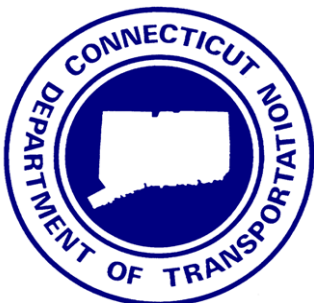


**CONNECTICUT
DEPARTMENT OF TRANSPORTATION
LOCAL BRIDGE PROGRAM MANUAL**



SEPTEMBER 2023



About the cover: this editions cover features Bridge No. 04575, Main Street over the Tankerhoosen River, in the Town of Vernon. This bridge rehabilitation project was designed by GM2 Associates, of Glastonbury, Connecticut, and was constructed by NJR Construction Company, of Torrington, Connecticut.

Construction work began in April 2021, and was completed in November 2022 at a construction cost of approximately \$2.5 million. Funding was provided by the Federal Local Bridge Program and the Town of Vernon.

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NEW IN THIS EDITION

The most relevant changes incorporated into this edition of the Local Bridge Program Manual are listed below. They are supposed to assist those readers who are well versed in the contents of the previous edition(s) in quickly identifying relevant new or revised information. This list is not all-encompassing and should not preclude a thorough review of this manual.

- All submissions were moved to digital submissions.
- Language for the new Bipartisan Infrastructure Bill was added to the Federal Local Bridge Program
- The Design Managed by State Program within Federal Local Bridge Program was added. This was previously referred to as the Pilot Program.
- Appendix 1 – Eligible Bridges was removed from the manual since the Eligible Bridge List resides on the Local Bridge webpage.
- General editorial changes.

LESSONS LEARNED & OPPORTUNITIES FOR IMPROVEMENT

The following are the most prevalent issues the Local Bridge Program Office has identified as either hindrances to recent projects or items to be given special attention due to their importance for the success (or streamlining) of a project. See Section [1.2 – Definitions](#) for acronyms listed below.

- New longitudinal barriers, including bridge and approach rails, must satisfy the requirements of CTDOT [Engineering Directive 2020-01](#). Designers should choose previously approved longitudinal barriers by FHWA to avoid using details of barriers that do not meet this standard. Any deviations from this requirement should be avoided to the extent possible and must follow the normal design exceptions approval process.
- Load Rating documentation. This item is often mistakenly omitted on State Local Bridge Program projects. Inventory and operating load ratings shall be determined for all replacement and major rehabilitation bridge projects per the CTDOT *Load Rating Manual*. Replacement of a bridge’s superstructure is included in the major rehabilitation category. Failure to provide a load rating could result in forfeiture of funds.
- For traditional Federal Local Bridge Program projects, municipalities should only proceed with final design and advertising activities once the Department has notified the municipality that the federal funds are authorized. Without this authorization, reimbursement of federal dollars is jeopardized.
- Risks to timely project delivery:
 - Late submittals to DEEP Fisheries and DEEP Wildlife for approvals. Early coordination regarding fish passage, once the hydraulic opening and span configuration has been determined, is recommended. Communications regarding wildlife and protected species should begin once the anticipated impact areas have been identified.
 - Substandard requests to DEEP for 401 Water Quality approvals. Initial comments provided by DEEP regarding fish passage and water quality should be incorporated into the design and a final concurrence should be obtained from DEEP before submittal of the project for an Army Corps of Engineers Pre-Construction Notification. This item has caused several delays in recent state funded Local Bridge Program projects.
 - When a PCN is required, timeliness of the submission to Army Corps is paramount.
 - The following reports, whenever applicable, should adhere to their respective expected submittal milestones:
 - Hydrology & Hydrologic report: both the draft and final hydrology reports should be accomplished in the preliminary engineering phase.
 - Hydraulics & Hydraulic reports: preliminary hydraulic analysis for and report for all alternates should be submitted with the

-
- structure type study. Draft hydraulic report for the selected alternate is expected at 30% design. Final hydraulic report is expected at 60% design.
- Floodway Analysis & Reports: Draft floodway report for the selected alternate is expected at 30% design. Final floodway report to be submitted at 60% design.
 - Scour Analysis & Reports: Draft scour report for the selected alternate is expected at 30% design. Final scour report is expected at 60% design.
 - Drainage analysis: Preliminary drainage report is expected at 60% design. Final drainage report is expected at 90% design.
 - Preliminary Engineering Report: A preliminary engineering report is expected at 30% design, with comments incorporated into final design phase.
- Late submittals for Flood Management Certification request. A proper request packet should be submitted when the design has progressed to approximately 60% for federal funded Local Bridge Program projects.
 - Late submittals of ROW maps. Payment of state and federal funds are contingent on proper ROW documentation. For federal funded projects, ROW maps must be submitted well in advance of FDP. For State funded projects, the documents contained in [Engineering Directive Number 2015-6-E](#), must be submitted before payment of the State grant can be made.

CHAPTER 1: INTRODUCTION

In Connecticut, there are thousands of bridges and culverts on municipally maintained roads. Construction and maintenance of these often-expensive structures is solely the responsibility of the municipalities.

Recognizing the budget constraints that municipalities are under, The Department makes State and Federal funding available for municipal bridge projects from State Bridge Bonds, and from Connecticut's off-system bridge set-aside from the Federal Highway Administration's bridge formula program.

Note that the funding administered by the Local Bridge Program office is priority based. That is, projects which repair, replace, remove, or improve an existing bridge will be considered first for funding. New bridges in a location that did not previously have a bridge or other type of crossing are eligible under the new Bridge Formula Program (BFP), however, funding priority will be given to bridges that are in poor condition.

1.1 – ABOUT THIS MANUAL

This manual has been created to guide municipalities through the process of developing bridge projects and applying for funding under the Local Bridge Program. It is aimed at both those with non-technical orientations, such as mayors and selectmen, as well as those with technical backgrounds, such as engineers and public works directors. We have attempted to give an overview of the program, with additional coverage given to those subjects which have proven troublesome, confusing, or have resulted in frequent questions. This manual is updated biennially to incorporate new information, updated procedures, and lessons learned over previous years.

There are five major sections to this manual:

- **[Chapter 2: Bridge Evaluation](#)** explains how bridges are rated. Because bridge ratings determine both eligibility for funding and project priority, an understanding of the process is important.
- **[Chapter 3: Funding Programs](#)** gives an overview of the funding programs administered by the Local Bridge Program unit.
- **[Chapter 4: Project Development](#)** gives a general overview of the process of project development, with additional information given on areas which have proven to be troublesome, such as environmental permits.
- **[Chapter 5: Guidelines For Obtaining Funds](#)** gives a step-by-step outline of the path that a Local Bridge Program project will follow. The process is much more

involved when federal funding is used, so there are separate sections provided for state and federal-funded projects.

- **Appendices** contain state statutes related to municipal bridge projects; Program regulations; and hydraulic analysis guidelines.

The Department strives to make the Local Bridge Program as user-friendly as possible, and this manual is part of that effort. Comments or suggestions for its improvement are welcomed. An email [Comment Form](#) is included at the back of this manual for your convenience but comments will only be accepted via email to the Program office.

1.2 – DEFINITIONS

To aid in understanding some of the terms used in this manual, some definitions are given below. The definitions are based on usage common in the field, but are not intended to be legally governing. In the event that any definition conflicts with a definition given in the Regulations or Statutes, the definition given in the Regulations and/or Statutes shall govern.

AASHTO: The American Association of State Highway and Transportation Officials.

ADT: The Average Daily Traffic; the average number of vehicles that pass over a given structure on a typical day.

ADTT: The Average Daily Truck Traffic; the average number of trucks that pass over a given structure on a typical day.

Bridge: A structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads, and having an opening measured along the center of the roadway of more than 6 feet (note: federal definition is more than 20 feet) between undercopings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it includes multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening. (Note: in non-technical usage, a “culvert” may also be called a “bridge”.)

Bridge Design Manual: The Connecticut Department of Transportation *Bridge Design Manual*. Available online at: <https://portal.ct.gov/DOT/State-Bridge-Design/State-Bridge-Design-Publications>

Bridge Inspection Manual: The Connecticut Department of Transportation *Bridge Inspection Manual*. Available online at: <https://portal.ct.gov/DOT/Bridge-Safety-and-Evaluation/Bridge-Safety-and-Evaluation>

Bridge Replacement: The complete replacement of a structure, including any necessary approach work.

Consultant Liaison Engineers (CLE): This is a firm that has been selected by the Department to assist Department staff with project delivery. The CLE acts as an extension of Department staff and will be tasked with a variety of assignments including design of projects and coordination with municipal and other agency staff.

Coding Guide: The "Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges", prepared by the Federal Highway Administration. Available online at <http://www.fhwa.dot.gov/bridge/bripub.htm>.

Commissioner: The Commissioner of the Department of Transportation, or his authorized representatives.

Commitment to Fund: A commitment issued to a municipality by the Division Chief of Bridges to fund the project costs of an eligible bridge project either through a grant in accordance with Section 5 of the Regulations (see [Appendix 2 – Regulations](#)) for state-funded projects; or through reimbursement in accordance with the Federal Off-system Bridge Program for federal-funded projects.

Consultant Design Manual: The Connecticut Department of Transportation *Consultant Design Manual*. Available online at: <https://portal.ct.gov/DOT/Publications/Consultant-Design/Consultant-Design-Manual>

Culvert: A drainage opening or similar passageway beneath a roadway embankment with no definite distinction between superstructure and substructure, with an interior span length of 6 feet or more. It may also include multiple pipes, which carry the same body of water, in which the clear distance between openings is less than half of the smaller contiguous opening or which share a common headwall, provided the overall structure length is 6 feet or more.

Deck Replacement: The complete replacement of that portion of a superstructure, which provides a smooth traveling surface for vehicles, including subdecking and wearing surface, if any, and includes curbing within the limits of the replacement.

DEEP: The Connecticut Department of Energy and Environmental Protection.

Deficient Bridge: A bridge or culvert with a major structural component rated “poor”.

Department: The Connecticut Department of Transportation. Also referred to in this manual as CTDOT.

Drainage Manual: The Connecticut Department of Transportation *Drainage Manual*. Available online at: <https://portal.ct.gov/DOT/Hydraulics-and-Drainage/Drainage-Manual>.

Eligible Bridge: A bridge or culvert owned and/or maintained by a municipality, carrying a certified public road, and whose physical condition, as determined by the Commissioner, requires it to be rehabilitated, replaced, or improved. For more eligibility criteria, including eligibility for preservation related work, see Section [3.1 – State Local Bridge Program](#) for state funding and Section [3.3 – Federal Local Bridge Program](#) for federal funding.

Erosion and sedimentation control measure: A specific design for vegetative, nonstructural or structural means for controlling erosion and sedimentation described in the Connecticut [2002 Guidelines for Soil Erosion and Sediment Control](#) published by the Connecticut Council on Soil and Water Conservation pursuant to Section 22a-328 of the General Statutes. This manual should be used as a guide for developing proper temporary Erosion & Sedimentation control measures to be utilized during construction.

Erosion and Sedimentation Control Plan: A scheme that minimizes soil erosion and sedimentation and includes, but is not limited to, a map and narrative. The map must show topography, cleared and graded areas, proposed area alterations and the location of and detailed information concerning erosion and sediment measures and facilities. The narrative should describe the project, the schedule of major activities on the land, the application of conservation practices, design criteria, construction details and the maintenance program for any erosion and sediment control facilities that are installed.

Federal Fiscal Year: The fiscal year of the Federal Government, October 1 to September 30.

Fiscal Year: The fiscal year of the State, July 1 to June 30.

FEMA: The Federal Emergency Management Agency.

FHWA: The U.S. Department of Transportation, Federal Highway Administration.

Form 818: The Standard Specifications for Roads, Bridges, Facilities and Incidental Construction, published by the Connecticut Department of Transportation, including its respective supplements, available online at: <https://portal.ct.gov/DOT/IT/ConnDOT-Publications-Manuals>. Since Local Bridge Program Projects are administered by the municipalities, some definitions and references in the Form 818 are intended to pertain to Municipality and its officials instead of Department and its officials for these projects.

Highway Design Manual: The Connecticut Department of Transportation *Highway Design Manual*. Available online at: https://portal.ct.gov/-/media/DOT/documents/AEC/Manuals/Highway-Design-Manual_2023-01_v2.pdf.

Inventory Rating: The rating, in tons, denoting the safe sustained load capacity of a structure, determined in accordance with the AASHTO Manual for Bridge Evaluation.

Load Rating Manual: The Connecticut Department of Transportation *Bridge Load Rating Manual*. Available online at: <https://portal.ct.gov/DOT/State-Bridge-Design/Load-Rating/Load-Rating>.

Movable Bridge: A bridge whose deck and superstructure or portions thereof can be rotated or lifted in order to allow crossing of marine vehicles.

MSAT: The Connecticut Department of Transportation Municipal Systems Action Team (MSAT). This team is to assist the Municipalities in the administration of their construction projects that are Federally and/or State funded through the Department.

Municipal Road: Any road accepted, owned and maintained by a municipality and open to public use by motor vehicle traffic.

Municipality: Any town, city, borough, consolidated town and city, consolidated town and borough, district, commission, authority or other political subdivision of the state, owning or having responsibility for the maintenance of all or a portion of an eligible bridge.

National Bridge Inspection Standards (NBIS): Federal regulations establishing requirements for bridge inspections.

Operationally Deficient: A movable bridge which has a numerical condition evaluation equivalent code of 4 or less given to its mechanical or electrical components if such components are deemed essential to the rotation or lifting operation of the bridge.

Orphan Bridge: Any bridge, which carries a municipal road and spans a railroad right-of-way not owned by the state, and whose ownership and/or maintenance responsibility is in dispute.

Preservation: The work to prevent, delay, or reduce deterioration of a bridge or its elements in order to preserve a bridge's good condition or extend its useful life.

Rehabilitation: The major work required to restore the structural integrity of a bridge as well as work necessary to correct major safety defects.

Scour: Erosion or removal of streambed or bank material from bridge foundations due to flowing water.

Scour Critical: A bridge with abutment or pier foundations, which are rated as unstable due to:
1) observed scour at the bridge site, or 2) a scour potential as determined from a scour evaluation study.

Specification for the National Bridge Inventory (SNBI): The Specifications for the National Bridge Inventory, prepared by the Federal Highway Administration. Available online at: https://www.fhwa.dot.gov/bridge/snbi/snbi_march_2022_publication.pdf

Stormwater Quality Manual: The Connecticut Department of Energy and Environmental Protection *2004 Connecticut Stormwater Quality Manual*. This manual should be used as a guide to design permanent Stormwater Quality Measures for inclusion into projects. Available online at: <https://portal.ct.gov/DEEP/Water-Regulating-and-Discharges/Stormwater/Stormwater-Manual>

Structure Evaluation: An overall rating of the structure, which takes into account all major structural deterioration, and evaluates a bridge in relation to the level of service it provides, as compared with a new bridge built to current standards. Important factors considered in this appraisal are the inventory rating and the condition ratings of the deck, superstructure and substructure.

Sufficiency Rating: The numerical rating of a bridge based on its structural adequacy and safety, essentiality for public use, and its serviceability and functional obsolescence. Sufficiency Rating is an overall rating of a bridge's fitness for the duty that it performs based on more than 20 data fields. A low Sufficiency Rating may be due to structural defects, narrow lanes, low vertical clearance, or many other possible issues.

Superstructure: Bridge structural members above the top of the piers and abutments.

Substructure: Structural components, which support the superstructure, such as piers, abutments, piles, fenders, footings, etc.

Waterway Adequacy: The evaluation of the adequacy of waterway opening with respect to the passage of flow through the bridge. Important factors considered include the backwater depth, the likelihood of overtopping, and the resultant impact on traffic.

CHAPTER 2: BRIDGE EVALUATION

Though the specific eligibility criteria differ between the state and federal assistance programs, the main factor determining eligibility for funding under both programs is the bridge's physical condition. Therefore, it is necessary to have an understanding of how a numerical rating is applied to a bridge in order to understand how funding priority is established. To aid in that understanding, the rating system is explained in the following sections.

The Connecticut Department of Transportation's Bridge Safety and Evaluation Section inspects all state bridges, and all municipally owned bridges with spans greater than 20 feet, on a regular basis (every 2 years or less). Current bridge inspection reports for these National Bridge Inventory (NBI) bridges are available to prequalified consultants and municipalities through SharePoint; please see the [Getting Started with SharePoint for Municipalities](#) web page for more information. Inspections of municipally-owned bridges with spans of less than 20 feet are the responsibility of the respective municipality; they are not routinely inspected by CTDOT.

However, in early 2018, CTDOT completed a special screening of these "under 20" municipal bridges. This screening was performed since the vast majority of the available data for these structures is over two decades old. That data is mainly the result of a one-time inspection of these "under 20" bridges performed by CTDOT to comply with Public Act 87-584, "Local Bridge Study of Town-Owned Structures Less Than Twenty Feet but Greater Than or Equal to Six Feet in Span Length." This study was completed on April 30, 1992 and a final report was forwarded to the Connecticut General Assembly in June 1993. That data can no longer be relied upon. CTDOT's screening reports have been submitted to the respective municipalities, noting the bridges with elements/components rated poor or worse, and in need of a full inspection and potential rehabilitation/replacement.

During full inspections, the bridge inspectors carefully evaluate each component of a bridge, and then assign a numerical rating to each component. The ratings range from 0 to 9, with "9" being the best, and "0" being the worst rating (see the tables in the Sufficiency Rating section for more explanation). There are two broad categories of ratings: condition and appraisal. Condition ratings rate bridge components relative to their original condition when new. Appraisal ratings rate components in comparison to current standards.

In general, bridges are considered to be in poor condition if the physical condition rating of any of the major structural components (deck, superstructure and substructure) are rated as a numerical rating of 4 or less. Because culverts do not have distinct decks, superstructures and substructures, these components are not rated as such when evaluating a culvert. Instead, a "culvert rating" is assigned which takes into account the overall condition of the culvert. A culvert is considered in poor condition if the overall condition of the culvert is rated as numerical rating of 4 or less.

A bridge or culvert, which is in poor condition, may or may not be able to carry full legal loads, and if left unchecked, will continue to deteriorate until it is unsafe for any load. Once a bridge is considered to be in poor condition, it should be programmed for major repair or replacement.

Another area of inspection is scour. Bridge scour is the removal of sediment such as sand and gravel from around bridge abutments or piers. Hydrodynamic scour, caused by fast flowing water, can carve out scour holes, compromising the integrity of a structure. A bridge is inspected for its scour susceptibility and given a rating to reflect this. A rating of “3” or less classifies the bridge as scour critical, making it eligible for funding to address the scour concerns.

In recognition of the importance of mechanical and electrical elements to the safe and efficient operation of a movable bridge, deterioration to these elements have received equivalent condition ratings between 0 and 9, similar to those for bridge components. A bridge is considered “operationally deficient” if an equivalent rating of “poor” (numerical rating of 4 or less) is assigned to its mechanical or electrical elements if such elements are deemed essential to the rotation or lifting operation of the bridge.

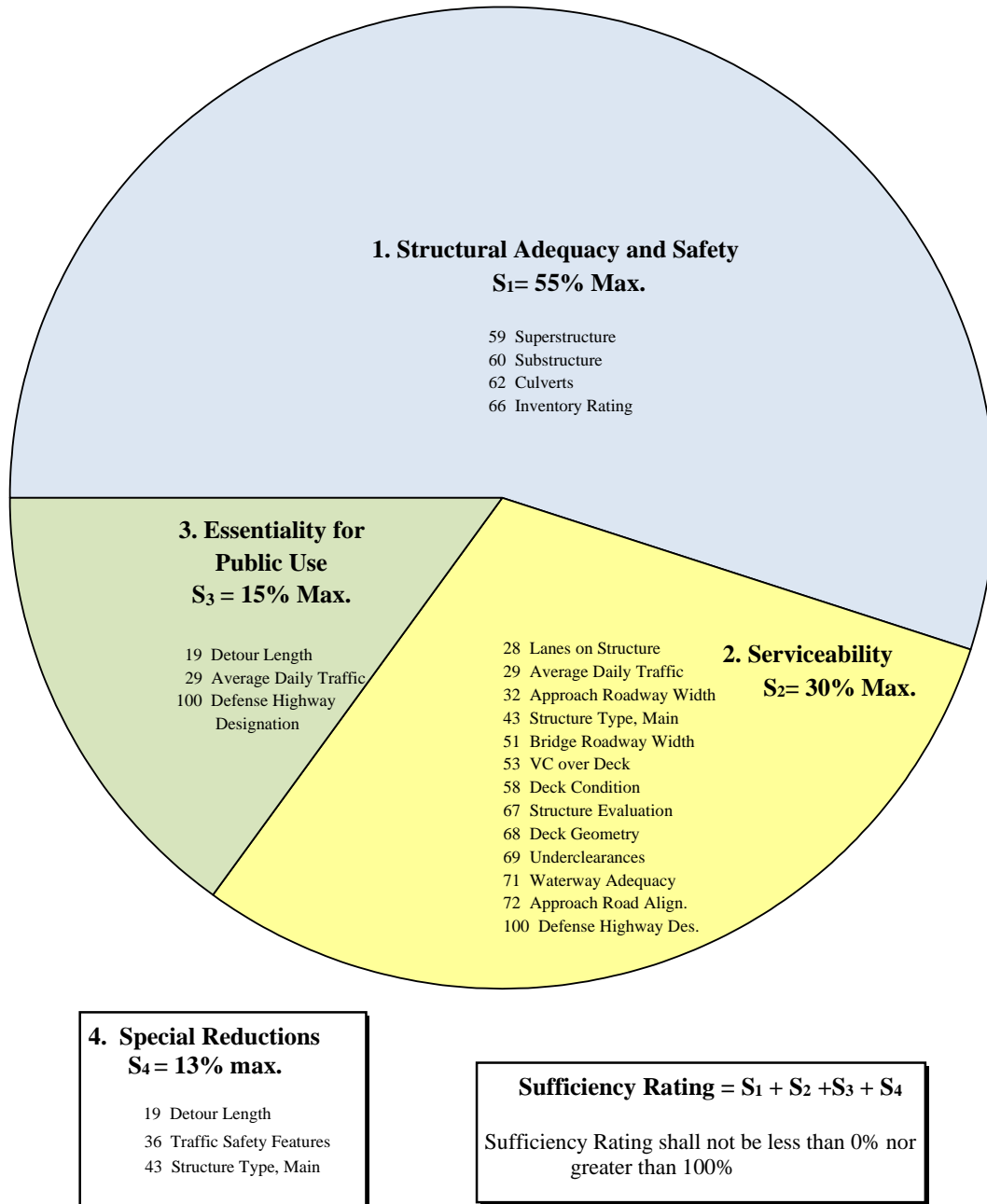
2.1 – SUFFICIENCY RATING

The sufficiency rating formula is a method of rating the quality of a bridge by calculating four separate factors to obtain a numeric value, which is indicative of a bridge’s sufficiency to meet the demands placed upon it. In this formula, 55% of the total is based on structural adequacy and safety, 30% on serviceability, and 15% on essentiality for public use. The result of this calculation is a percentage in which 100% would represent an entirely sufficient bridge and 0% would represent an entirely deficient bridge. The primary use of the sufficiency rating is as a planning tool to prioritize bridge projects for funding purposes; it is NOT the best indicator of the absolute physical condition of a bridge; because of the weight given to a bridge’s relative importance in the highway network, two identical bridges on different roads may have very different sufficiency ratings.

Condition ratings of the superstructure, substructure (or culvert, if applicable) and the inventory rating (load carrying capacity of the structure), have the most impact in the sufficiency rating calculation. Serviceability, and essentiality for public use are also considered in the sufficiency rating calculation. Loss of accessibility to schools, homes, businesses, etc., due to a load-restricted or closed bridge, constitutes an undue hardship to the public, not to mention the reduction or loss of essential services such as, fire protection, police, and medical services. In addition, lengthy detours due to a closed or posted structure present ecological and financial hardship.

A graph illustrating the relative weighting of factors comprising the sufficiency rating criteria is shown in [Figure 2-1](#) below. For a more complete explanation of how the sufficiency rating is calculated, see Appendix B of the *Coding Guide*.

Figure 2-1. Summary of Sufficiency Rating Factors



Condition Ratings: For evaluating structural components such as decks, superstructures, substructures and culverts, the following numerical condition rating system is used:

<u>Code</u>	<u>Description</u>
N	NOT APPLICABLE
9	EXCELLENT - no noticeable deficiencies or deterioration.
8	VERY GOOD - no problems requiring attention.
7	GOOD - some minor problems; potential exists for minor maintenance.
6	SATISFACTORY - structural elements show some minor deterioration; non-structural cracking; potential exists for major maintenance.
5	FAIR - all primary structural elements are sound, but may have minor section loss, structural cracking, spalling or scour; potential exists for minor rehabilitation.
4	POOR - advanced section loss, deterioration, spalling or scour; requires major rehabilitation.
3	SERIOUS - loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present. Rehabilitation or repair required immediately.
2	CRITICAL - advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present, or scour may have removed substructure support. Need for immediate repair or rehabilitation is urgent; unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	IMMINENT FAILURE - major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic, but corrective action may put it back in light service.
0	FAILED - out of service - beyond corrective action.

Appraisal Ratings: For rating the overall structural evaluation, deck geometry (width), under-clearances, approach roadway alignment, and waterway adequacy, the following appraisal rating system is used:

<u>Code</u>	<u>Description</u>
N	Not Applicable
9	Superior to present desirable criteria
8	Equal to present desirable criteria
7	Better than present minimum criteria
6	Equal to present minimum criteria
5	Somewhat better than minimum adequacy to tolerate being left in-place as-is
4	Meets minimum tolerable limits to be left in place as-is
3	Basically intolerable requiring high priority of corrective action
2	Basically intolerable requiring high priority of replacement
1	<i>(this value not used)</i>
0	Bridge closed

The types of defects that are characteristic of each numerical rating are explained in detail in Chapter 10 of the *Bridge Inspection Manual*.

2.2 – PRIORITY RATING

Section 13a-175s of the Connecticut General Statutes requires the Commissioner of Transportation to maintain a list of eligible bridges and establish a priority list of eligible bridge projects for each state fiscal year. The purpose of the prioritized list is to rank the bridges statewide on the basis of need, and to determine which bridges will be funded if not enough funds are available to fund all applications received in a given year. To accomplish this, each bridge is assigned a “Priority Rating”, using the methods explained below. In general, the structures in the worst condition will have the lowest Priority Ratings, with the lowest rating being the highest priority for funding, with exceptions possible in emergency situations.

The Priority Rating represents the physical condition of the structure, based upon the sufficiency rating (as discussed above), with additional “weight” given to the ratings of the main structural components and the structure’s load carrying capacity. The following formulas are used, depending upon whether the structure is a bridge or a culvert. These formulas are used to define the “physical condition” as required in Section 13a-175p of the Connecticut General Statutes, as amended. The data for the formulas is taken from the rating reports developed by the bridge inspectors using the Coding Guide.

1. For Structures with Abutments and Piers

$$\text{Priority Rating} = SR - 2 \left(1 - \frac{DC + SUB + SUP}{27} \right) - 4 \left(1 - \frac{IR}{36} \right)$$

Where:

- SR* = Sufficiency Rating
- DC* = Deck Condition Rating (0-9)
- SUB* = Condition Rating of Substructure (0-9)
- SUP* = Condition Rating of Superstructure (0-9)
- IR* = HS-20 Gross Inventory Rating in Tons (Tractor semi-trailer combinations inventory rating - Max. 36)

Note: The factors of 27 and 36 are the maximum condition ratings for deck, substructure and superstructure conditions (9 x 3) and the acceptable load limit for a structure (36 tons) respectively.

2. For Culverts and Arches

$$\text{Priority Rating} = SR - 2 \left(1 - \frac{CUL}{9} \right) - 4 \left(1 - \frac{IR}{36} \right)$$

Where:

- CUL* = Culvert Condition Rating (0-9)

2.3 – PRIORITY LISTS

A preliminary list of eligible bridges is posted on the Local Bridge Program website. This list is updated annually and utilizes the most recent data gathered by CTDOT during the Department’s regular inspections of Municipally-owned and maintained structures, and inspection data submitted by municipalities. *Bridges that have received funding under the Local Bridge Program within the last 10 years are not included on the eligible bridge list, even though they may again be deficient.* The list will indicate if the bridge is eligible for state funding, federal funding, or both.

If a municipality wishes to have a bridge added to the eligible bridge list, it may use staff professionals or engage a consulting engineer to conduct an inspection to provide updated information that may enable a structure to qualify for funding. The inspection report must be developed using the Federal Coding Guide (if performed prior to 2024) or SNBI (if performed after 2023) and the *Bridge Inspection Manual*, be signed and sealed by a Connecticut-licensed professional engineer, and be submitted to the Department of Transportation for review and approval. The inspection team must be headed by someone qualified as a Team Leader under NBIS rules, and the inspection report must be signed by an individual qualified as a Program Manager under NBIS guidelines. If the bridge is found to be eligible, it will be added to the list of eligible bridges and a priority rating will be assigned. A bridge inspection report may be submitted for review at any time during the year, but the bridge will not be considered for funding until the inspection report has been reviewed.

It is important to note that the bridges listed on the Eligible Bridge list, located on our webpage, contains only *eligible* bridges; not all *deficient* municipal bridges are listed. That is, for each bridge on the list, the Department has determined, from available data, that the bridge is deficient *and* that the bridge meets all the other eligibility criteria of the funding programs. There also exist municipal bridges which are deficient, but do not meet other criteria for funding; these bridges are not included on the eligible bridge lists. Once a bridge receives a commitment to fund from the Local Bridge Program or another aid program administered by CTDOT, it is removed from future eligible bridge lists – this is the most common reason for a bridge to “disappear” from the eligible bridge list from one year to the next.

Normally, by June 30 of each year, the Department will establish a priority list of eligible bridge projects for which applications have been submitted. Authorization for funding is determined by the project's ranking on that list, and the extent of the funding available. Projects for which applications were submitted in one fiscal year, but due to program funding limitations were not accepted into the Program, may be resubmitted for funding consideration in a subsequent fiscal year, provided that construction has not yet begun.

2.4 – EMERGENCY CONDITIONS

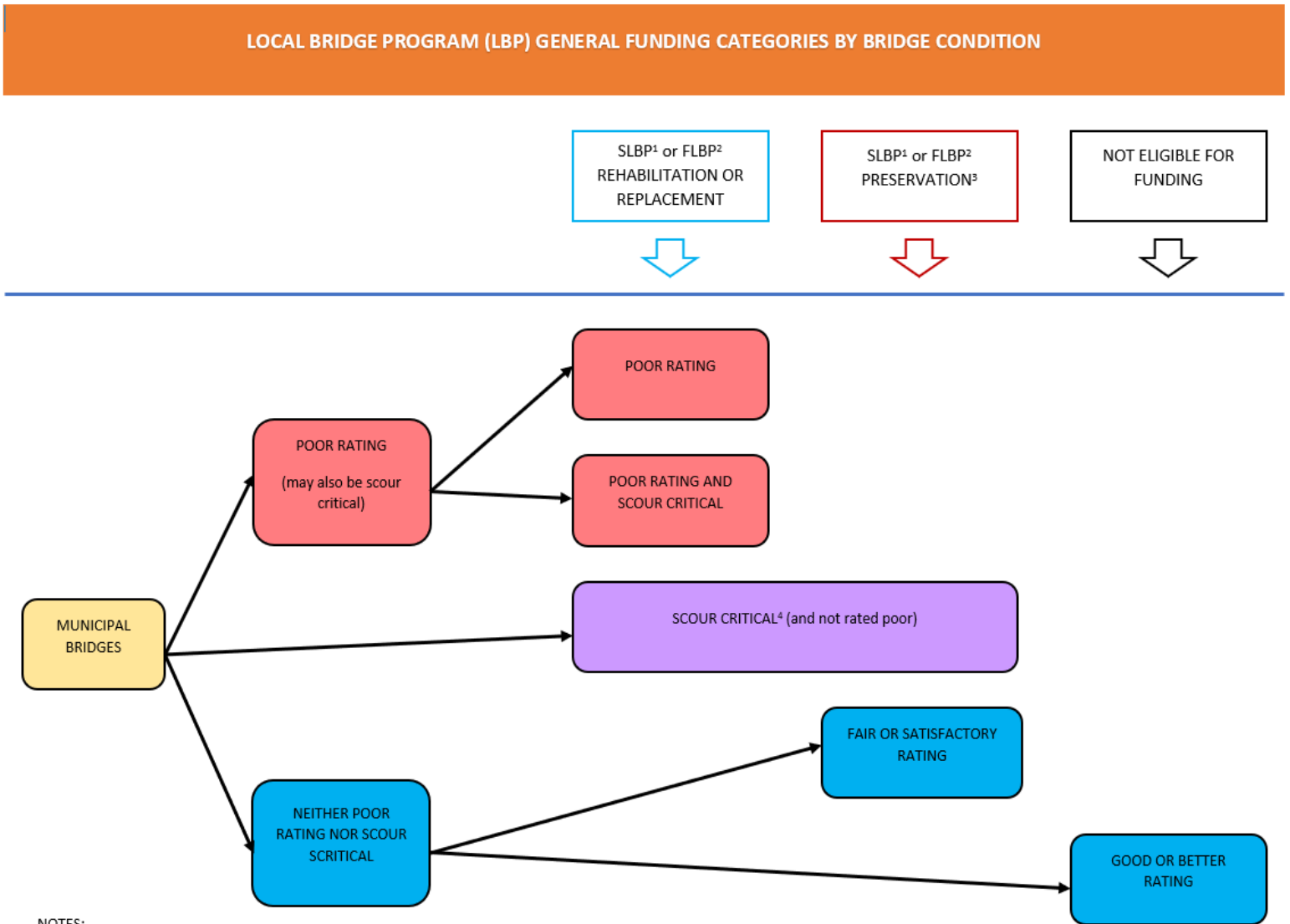
The legislation governing the State Local Bridge Program permits the Commissioner to approve projects without regard to the priority list if a public emergency exists. A public emergency is interpreted to mean a situation in which the condition of a bridge requires it to be

closed, or its load limit reduced substantially, resulting in the isolation of people or a significant delay in the availability of services to such an extent that public safety is jeopardized.

If a municipality wishes to have an application processed under the emergency provision, a letter to that effect should accompany the application, with the reasons for the emergency noted. Emergency applications may be submitted at any time of year.

CHAPTER 3: FUNDING PROGRAMS

The funding categories are shown in Figure 3-1 below are for both state and federal funded Local Bridge Programs.



- NOTES:
- 1 – 50% State Contribution. Bridge must be 6 feet or more in length and no have an existing LBP or LOTCIP funding commitment.
 - 2 – Minimum 80% Federal Contribution/ Maximum of 20% State Contribution. Bridge must be “off-system”, more than 20 feet in length, and not have an existing LBP commitment.
 - 3 – Preservation project must be reasonably estimated to cost more than \$500,000 to efficiently accomplish preservation work on one or more bridges.
 - 4 – Funding category depends on site-specific extent of scour issue.

Figure 3-1 – Funding Categories by Bridge Condition

3.1 – STATE LOCAL BRIDGE PROGRAM

State financial assistance is available to municipalities under the Local Bridge Program in the form of a grant-in-aid. Recognizing the difficulty that municipalities have in keeping their bridges in a state of good repair, in 1984, the General Assembly enacted P.A. 84-254 (now known as Sections 13a-175p through 13a-175w of the Connecticut General Statutes) as part of the State's Infrastructure Renewal Program. The Program provides for state financial assistance to municipalities for the removal, replacement, reconstruction or rehabilitation of local bridges. Under this program, a municipality may qualify for a grant of 50% to cover eligible project costs. FY 2016 and older projects still receive the grant percentage shown on their respective Commitment to Fund letters.

To qualify for state funding, a bridge must carry a certified public road, be municipally owned and/or maintained. The bridge must be considered a deficient bridge (see [Chapter 2: Bridge Evaluation](#)), and must not have a prior commitment from the state – not withdrawn or expired – to fund the project. In addition, preservation work for bridges that are rated scour critical, fair or satisfactory (condition rating of 5 or 6 given to the lowest rated component – deck, superstructure, substructure, or culvert condition) may be eligible if the project cost can be reasonably anticipated to be \$500,000 or higher. This minimum project cost is intended to make it more efficient to accomplish rehabilitation work to preserve one or more bridges under the same project. A determination for preservation projects will be made on a case by case basis, but preservation funding will not be allowed for bridges that are structurally deficient, functionally obsolete, or operationally deficient. Projects that construct a new bridge in a new location (not built as a replacement for an existing bridge) are not eligible.

Many types of projects are eligible for funding. The scope of the project may include reconstruction, rehabilitation, modifications or improvements such as widening, complete replacement, or complete removal, as long as the project corrects the deficiencies that made the bridge eligible for funding. Sections [3.3.1.1 – Replacement and Rehabilitation Projects](#) and [3.3.1.2 – Preservation Projects](#) describe the respective types of projects. The project may use standard materials such as steel and concrete, traditional material such as timber, or innovative materials such as plastics and aluminum, as long as sound engineering practices are used. Any reasonable structure type may also be used, including trusses, if conditions permit.

Applications for funding will be evaluated only for those projects that are anticipated to be under way during the upcoming fiscal year, as demonstrated by the schedule submitted with the Preliminary Application. Time extensions can be granted provided that the municipality demonstrates that it is actively making significant progress on the project.

If the municipality submits all required documentation on schedule, funding for eligible projects is generally made available just after the construction contract is awarded. Preliminary studies, engineering and property acquisition costs are eligible, subject to certain restrictions, and are reimbursed retroactively. Under exceptional circumstances, municipalities may apply for an advance grant to fund the preliminary engineering phase of a project. Construction costs incurred prior to the Commitment to Fund are **not eligible** for reimbursement.

In the event of multiple municipal involvement in a bridge project (such as a bridge on a municipal line), a decision must be made by the governing bodies of each involved municipality as to which municipality will be the “managing municipality” relative to contact with the Department. The managing municipality will be responsible for overall prosecution of the project, including coordination with other municipalities, meeting all requirements of the Statutes, regulations and the Department's administrative documents. Agreements between municipalities defining concurrence in the selection of the managing municipality must be submitted to the Department at the Preliminary Application stage. Subsequent agreements defining financial responsibility must be submitted at the Supplemental Application stage. The Department may deem the managing municipality to be the only municipality eligible for financial aid, without regard to the ownership or other interests of any other municipality in the eligible bridge. In this case, agreements will be made with, and grant disbursements will be made to, the managing municipality only.

3.1.1 – Grant Percentages

Once a Commitment to Fund a project is issued, the grant percentage assigned to a project at the time of the Commitment to Fund will remain unchanged for the life of the project, regardless of any subsequent changes in a municipality’s grant percentage. In accordance with Public Act 16-151, the Grant Percentage is 50 percent of eligible project costs effective July 1, 2016 (starting with FY 2017 Projects). Earlier projects will receive the Grant Percentage specified on their respective Commitment to Fund letter.

3.1.2 – Eligible Costs

Program regulations specify that only those costs of a bridge project that are determined to be necessary and reasonable are reimbursable. In general, a cost is “necessary and reasonable” if, in its nature or amount, it does not exceed that which would be incurred by a prudent person in the conduct of a competitive business. In any given project, the reasonableness or necessity of certain items of cost may be difficult to determine. In order to avoid a possible subsequent disallowance or dispute based on a cost being found unnecessary or unreasonable, the municipality is encouraged to seek advance approval from the Project Engineer for the Local Bridge Program as to the treatment to be accorded such cost.

Examples of items that will ordinarily be considered eligible costs include, by category:

3.1.2.1 – Preliminary Engineering:

- Advertising for consulting engineer selection (RFQ/RFPs, etc.);
- Engineering studies and inspections undertaken to determine whether a bridge is eligible for the Local Bridge Program;
- Preliminary surveys;
- Preliminary engineering activities, including type studies, preparation of project plans, specifications, and cost estimates;
- Preparation of bid documents;

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- Preparation of permit applications;
 - Soil borings and other subsurface investigations used for design;
 - Public hearings and legal notices;
 - Historical reviews and archeological studies prior to construction;

3.1.2.2 – Rights-of-Way:

- Property and easement acquisition;
- Property appraisals;
- Title searches;
- Legal fees for eminent domain proceedings;

3.1.2.3 – Utilities:

- Engineering costs related to municipally owned utility relocation;
- Municipally owned utility adjustment and relocation costs;

3.1.2.4 – Construction:

- Construction costs (those payments made to the construction contractor) for work on the bridge, including approach roadway work necessitated by the bridge project, and any extra work required to properly complete the project;
- Temporary structures necessary to perform the work, or to carry traffic around the work area while the permanent structure is completed;
- If a bridge is removed and not replaced, demolition and road closure costs;
- Where a municipality undertakes a project using its own labor, equipment and material: payroll costs of municipal employees directly working on the project, burden and fringe costs, such as FICA, vacation pay, sick leave pay, and pension contributions, of such employees so long as such costs can be audited; documented costs of materials; costs per hour of an item of equipment so long as such costs can be audited; if such costs cannot be audited then the then current equipment charges published by the Federal Emergency Management Agency, or calculated in accordance with the Form 818.
- Costs generally recognized as reasonable and necessary for the performance of the project taking into account established contracting or construction practices;
- Costs incurred to comply with federal and state laws and regulations, and contract terms and specifications;

3.1.2.5 – Construction Engineering/Incidentals to Construction:

- Construction inspection;
 - Materials testing;
 - Construction advertising;
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- Construction bid review and analysis;
 - Review of shop, construction and working drawings;
 - Engineering support and consultation during construction;
 - Inspector's field office costs;
 - Archeological studies after beginning construction;
 - Construction staking and surveying not performed by the construction contractor;
 - Other costs generally recognized as reasonable and necessary for the performance of the project to the standards used on CTDOT projects

Costs that ordinarily will not be eligible for state local bridge program funding include:

- Bridges not usable by street-legal motor vehicles;
- Bridge not open to the public;
- Construction of a Covered Bridge (unless the project is to replace an existing Covered Bridge);
- General municipal administration costs, including the wages or salaries of municipal employees not working directly on the project;
- Overhead costs of a municipality performing construction on its own account;
- Interim or final audits;
- Construction costs incurred prior to the commitment to fund;
- Costs for connecting roadways, interchanges, ramps, and other roadway work not necessitated by the bridge project;
- Costs of long approach fills, causeways, and other extensive earth structures, when constructed beyond the attainable touchdown point;
- Expenses for relocation of utilities not owned by a municipality;
- Legal fees;
- Premiums for insurance;
- Costs specifically excluded by the Form 818;
- Any costs generally *not* recognized as reasonable and necessary for the performance of the project to the standards used on CTDOT projects.

For costs normally eligible for preservation projects, see Section [3.3.1.2 – Preservation Projects](#).

3.2 – OTHER STATE GRANT PROGRAMS

The Local Bridge Program does not prohibit the use of other state funding sources, such as Town Aid for Roads (TAR), [Small Town Economic Assistance Program](#) (STEAP), or [Local Capital Improvement Program](#) (LoCIP) grants, in conjunction with Local Bridge Program funding. However, any other funding programs being used should be checked to see if *they* prohibit funding from other sources. In any event, no municipality may receive a grant amount, which exceeds the allowable percentage of eligible project costs. Since the Local Bridge

Program grant is based on the municipality's share of eligible project costs, participation in other aid programs, such as the [Local Transportation Capital Improvement Program](#) (LOTICIP – not to be confused with LoCIP), that pay for 100% of construction costs will render the project ineligible for a grant from the Local Bridge Program for the same project.

The LoCIP program specifically allows a LoCIP grant to be used along with a Local Bridge Program grant. For more information on LoCIP Grants, contact the LoCIP Coordinator at (860) 418-6401, or by e-mail at: Christine.Goupil@ct.gov. Grant requests guidance can be found on the LoCIP webpage: <https://portal.ct.gov/OPM/IGPP/Grants/LoCIP/Local-Capital-Improvement-Program-LoCIP-HOME-PAGE>

For more information on STEAP Grants, contact OPM by phone at (860) 418-6355 or by e-mail at: Martin.Heft@ct.gov. Grant requests guidance can be found on the STEAP webpage: https://portal.ct.gov/OPM/Bud-Other-Projects/STEAP/STEAP_Home

LOTICIP program funds CAN NOT be combined with Local Bridge Program funds. For more information on LOTICIP, contact Mr. Vitalij Staroverov, P.E., Transportation Supervising Engineer, at (860) 594-3218, or by e-mail at: Vitalij.Staroverov@ct.gov. Grant applications are to be submitted by municipalities to their Regional Planning Organization for forwarding to the Department of Transportation. More information can be found on the LOTICIP webpage: <https://portal.ct.gov/DOT/Office-of-Engineering/Highway-Design-Local-Roads-LOTICIP>

3.3 – FEDERAL LOCAL BRIDGE PROGRAM

3.3.1 – Off-System Bridge Set-aside

The FHWA requires , the Department to set aside federal funding to fund off-system municipally owned bridges from the Federal Highway Administration's surface transportation funding program. Under Bipartisan Infrastructure Law (BIL), enacted as the Infrastructure Investment and Jobs Act (IIJA), several new funding programs have been created, as well as revisions to existing ones. The BIL establishes the Bridge Formula Program (BFP), which provides funds for projects to replace, rehabilitate, preserve, protect, and construct highway bridges. The program sets aside a minimum of 15% of each State's BFP apportionment for use on "off-system" bridges (highway bridges located on public roads, other than bridges located on Federal-aid highways). The Federal Share for projects funded under the BFP will, as a general rule, be in accordance with 23 USC 120 (typically 80% Federal share unless on the Interstate, in which case Federal share can be increased to 90%); however, 100% Federal share can be used on an off-system bridge that is owned by a local agency. The 100% Federal Funding is available for all 3 phases of the project. Surface Transportation Brock Grant (STBG) – formerly known as Surface Transportation Program (STP), that was enacted under MAP-21 will still be available as a funding source for Off-System Bridges. This program will be funded with 80% Federal share and 20% State share for all phases of the project. In order for a municipality to be eligible for 100% funding of project costs, the municipality must participate in the Design-Managed-By-State, or DMS Program. [Section 3.3.2](#) further outlines the DMS program.

To be eligible for federal funding for replacement or rehabilitation, the bridge must be listed on the National Bridge Inventory (NBI); be municipally owned and/or maintained; carry a

public road classified by federal guidelines as being either a “urban local” road, a “rural local” road, or a “rural minor collector” road; and must not have an active commitment – not withdrawn or expired – from the state to fund the project. Please see additional criteria in Section [3.3.1.1 – Replacement and Rehabilitation Projects](#) and Section [3.3.1.2 – Preservation Projects](#) for the respective funding type.

The types of costs that are eligible or not eligible for federal participation are for the most part similar to the state program, but there are some differences.

Off-system funds may be used for:

- The total replacement of a highway bridge classified as being in poor condition, located on any public road with a new facility constructed in the same general traffic corridor,
- The rehabilitation that is required to restore the structural integrity of a bridge on any public road, as well as the rehabilitation work necessary to correct major safety (functional) defects,
- Bridge painting, seismic retrofitting, installation of environmentally acceptable anti-icing/de-icing systems, or installation of scour countermeasures.

Highway bridges eligible for replacement or rehabilitation must be over waterways, other topographical barriers, other highways, or railroads. Federal participation is limited to those eligible bridges on the NBI. A bridge that has been closed for an extended period of time or removed is no longer carried on the NBI, and thus would not be eligible for funding.

When a project is contemplated as part of a systematic preventative maintenance program (bridge painting, seismic retrofitting, anti-icing/de-icing systems, scour countermeasures, etc.), the project scope should also include, where feasible, correction of major safety deficiencies on the bridge. Be aware that systematic preventative maintenance program projects have the lowest priority for funding.

Because federal funds are involved, additional requirements and procedures come into play. To ensure that municipalities do not run afoul of the federal requirements, CTDOT works closely with the municipality during the course of a federally aided project. Once a commitment to fund for a qualifying municipal bridge project is issued by CTDOT, the municipality is provided guidance by CTDOT in developing the contract plans, specifications and estimates. The municipality must stay in close contact with CTDOT to ensure compliance with all program requirements. Failure to follow these rules may result in the municipality being responsible for some or all of the project costs. Cancellation of a project by a municipality after federal funds have been expended may also result in the municipality being required to reimburse the federal government for costs incurred prior to cancellation.

It is important to note that this is a **reimbursement** program. This means that the municipality must be prepared to pay project expenses “up front”, and then be reimbursed after the fact. Thus, the municipality should budget enough local funding to cover several months of project costs, which may be considerable during the construction phase. In addition, because

federal funds are released to the state in a piecemeal fashion over the lifespan of the Transportation Bill, it may take several years for a particular bridge to receive funding.

Some other significant differences caused by federal funding requirements are outlined in the section “Guidelines for Obtaining Funds under the Local Bridge Program”.

Costs that ordinarily will not be eligible for Federal Local Bridge Program funding include:

- General municipal administration costs, including the wages or salaries of municipal employees not working directly on the project;
- Overhead costs of a municipality performing construction on its own account;
- Interim or final audits;
- Consulting engineer fees, if the engineer was not selected by a procedure approved by CTDOT;
- Construction costs incurred prior to the commitment to fund;
- Costs for connecting roadways, interchanges, ramps, and other roadway work not necessitated by the bridge project;
- Costs of long approach fills, causeways, and other extensive earth structures, when constructed beyond the attainable touchdown point;
- Expenses for relocation of utilities not owned by a municipality;
- Legal fees;
- Premiums for insurance;
- Extra work performed without prior approval by CTDOT;
- Ornamental treatments not approved by CTDOT;
- Any costs specifically excluded by the Form 818;
- Any costs generally *not* recognized as reasonable and necessary for the performance of the project to the standards used on CTDOT projects.

For the cost of a proprietary item to be eligible for FHWA participation, it must be procured in conformance with [23CFR635.411](#). The Contract Administration Core Curriculum, [Participant's Manual and Reference Guide](#) (Part III.B.8.1.v) provides non-regulatory guidance on identifying and justifying FHWA participation in the cost of proprietary products.

3.3.1.1 – Replacement and Rehabilitation Projects

Bridge Replacement and Bridge Rehabilitation projects are those bridge projects that require complete replacement of an existing structure or major work to bring an existing structure to a state of good repair. In order to qualify for this type of funding, the bridge must be structurally deficient, functionally obsolete, or scour-critical according to criteria developed by the Federal Highway Administration in the Coding Guide (see [Chapter 2: Bridge Evaluation](#)). In addition, the bridge must fit the criteria outlined in Section [3.3.1 – Off-System Bridge](#).

The types of costs considered eligible for federal funding for bridge replacement and rehabilitation projects are described in Section [3.3.1 – Off-System Bridge](#).

3.3.1.2 – Preservation Projects

Between 2014 and 2018, the Federal Local Bridge Program initiated 4 bridge preservation projects as a test to determine if preservation projects were feasible using Off-System Bridge projects. All 4 projects have been completed and data has been gathered on costs from Design and construction. Upon review, it has been determined that the cost to design and perform construction inspection services is more than the actual construction costs. Additionally, in some instances, it was determined that larger repairs were required due to the existing bridges being unable to meet current design standards, or the condition of the structure deteriorated beyond the threshold for preservation. In light of this, applications for preservation projects will be reviewed, however rehabilitation and replacement projects will be prioritized for funds. The Program does not recommend funding preservation projects as the number of bridges requiring rehabilitation or replacement exceeds the number of preservation eligible bridges. If a municipality wishes to pursue a preservation project for a structure, it is recommended that they contact a qualified engineering firm to discuss preservation options.

3.3.2 – CTDOT Design Managed by State Program – 100% Design Funding

In 2016 the CTDOT initiated a pilot program in which, with the municipality's agreement, the Department administers the design and rights-of-way phases of a Federal Local Bridge Program project, from concept to design completion. This pilot program was initiated due to the Department's recognition of the difficulties faced by many municipalities in carrying out design activities in a timely fashion. Due to the overwhelming success of the pilot program, CTDOT has opened up this program to all municipalities, **contingent upon availability of state funds**.

The Municipality now has the option to request for CTDOT to administer the design and rights-of-way phase. For a Municipality that opts into this program, CTDOT uses state funds to pay for 20% of design costs to match the 80% federal funding. The municipality remains responsible for advertising for construction, and administering construction of the project. See [Appendix 4 - Project Implementation Tables](#) for an overview of the municipal, state, and federal responsibilities for this type of project.

3.3.3 – Other Federal Programs

For information on other federal funding programs, please contact your regional planning organization (RPA or COG). See FHWA Funding Eligibility Chart at https://www.ct.gov/dot/lib/dot/documents/dbridgedesign/localbridgeprogram/documentsandforms/fhwa_funding_eligibility_chart.pdf for a full picture of federal funding programs available for various bridge categories (i.e. by ownership, bridge size, and roadway classification).

CHAPTER 4: PROJECT DEVELOPMENT

Each year when funding is available, the Department solicits applications for the upcoming state fiscal year, which runs from July 1 of one year until June 30 of the following year.

The municipality, as the structure's owner, is ultimately responsible for all phases of the project, with the exception of projects funded in accordance with Section

3.3.2 – CTDOT Design Managed by State Program – 100% Design Funding. This may include, but is not limited to, survey, studies, preliminary and final design, material testing, utility relocation, rights-of-way activities, permit acquisition, construction work, construction supervision and inspection. If a municipality does not diligently pursue the project, no progress will be made, which may lead to a withdrawal of the state's commitment to fund the project. For federally funded projects, CTDOT will provide considerable oversight and guidance in completing these tasks, and if requested, the Department may perform rights-of-way activities. On state funded projects, much less oversight is provided.

These activities may be accomplished either in-house by municipal staff, or by consulting engineers and contractors solicited for that purpose. When selecting a consultant engineer for a project that is not federally funded, the municipality may use its normal procedure for purchasing outside services. When federal funds are used for a project, under most circumstances a "qualification based" selection procedure must be employed, and the consultant's activities will be governed by the latest edition of the *Consultant Design Manual*.

Should the municipality opt to accomplish the construction using its own employees (the "force account" method), the municipality may use equipment rental rates determined in accordance with the Form 818, or current F.E.M.A. (Federal Emergency Management Agency) schedule of rates for rental of equipment. Hourly rates for personnel and the pre-bid prices for materials from the current "Town Aid" schedule will also be allowed. The necessary guidelines for equipment rate charges, material certification and municipal payroll costs will be made available to the municipalities.

Section 58 of the June Special Session Public Act 15-5 is now in effect and mandates small business and minority business enterprise (SBE and MBE) goals for Municipal Public Works Contracts, as defined therein. The law applies to projects funded only under the State Local Bridge Program with construction advertising on or after October 1, 2015. The Commission on Human Rights and Opportunities (CHRO) has been tasked with overseeing and regulating compliance with the respective SBE and MBE goals. However, the burden of compliance and reporting will fall on the contractor. The municipality's role is to follow CHRO's guidance in terms of specific language that must be incorporated into bid solicitation and contract award documents. For information and documents regarding this legislation and compliance procedures, please contact CHRO's Contract Compliance and Affirmative Action Unit by calling (860) 541-3434 or by visiting website www.ct.gov/chro.

4.1 – TYPICAL PROJECT STEPS

Following is a list of typical project steps by the municipality, in the order in which they typically occur. Further details can be found in Section [5.2 – Procedures for State](#), and Section [5.3 – Procedures for](#), depending upon funding source.

- 1) Determine eligibility – See Section [3.1 – State Local Bridge Program](#) for state funds, or Section [3.3 – Federal Local](#) Bridge Program for federal funds.
- 2) Submit Preliminary Application.
- 3) Return Commitment to Fund letter within 30 days.
- 4) Begin (or continue) design (for federal funds, authorization must first be issued by FHWA and CTDOT before costs become reimbursable).
- 5) Secure environmental permits.
- 6) Upon design completion, submit Final Plans, Specifications, and Estimates (PS&E) (federally-funded projects).
- 7) Advertise for construction. Bid solicitation and contract award documents must include specific language published by CHRO regarding SBE/MBE goals (SLBP Only). CHRO can be reached at (860) 541-3434 or by visiting www.ct.gov/chro. supp
- 8) Sign and return grant agreement (State Funded Projects)..
- 9) Receive grant (federal-funded projects receive funds on a reimbursement basis).
- 10) Begin construction (notify CTDOT as to starting date).
- 11) When nearly complete, notify CTDOT as to semi-final inspection date.
- 12) Certify project as complete.
- 13) Submit final cost information and as-built plans.
- 14) State adjusts grant amount (for State Local Bridge Program).

4.2 – INITIATION/PRELIMINARY APPLICATION

A project is initiated by the municipality determining that it desires to repair or replace an eligible bridge. Bridges which are known by CTDOT to be in poor condition *and/or* meeting other program requirements (and thus known to be eligible) are listed in the eligible bridge list posted on the Local Bridge Program website. Additional bridges may also be considered for addition to the eligible bridge list if the municipality submits an inspection performed by a qualified professional engineer revealing them to be in poor condition, and the Department agrees with the results of the inspection report.

The municipality begins by estimating the scope of work needed to preserve or return the bridge to good condition, and preparing a preliminary cost estimate for this work. At the

preliminary application stage, cost estimates are generally based on “rule of thumb” estimates for similar types of work; detailed plans and specifications are not required at this point.

Once the municipality has a rough idea of the project’s scope and cost, a Preliminary application should be submitted to the Department. The preliminary application must be submitted using the latest application form posted on the Program’s website. Due to the limited number of bridges that qualify for federal funding, and to reduce the time that it takes to get a deficient bridge rehabilitated, the Department is accepting applications for federal funding at any time; there is no specific deadline. In the event that demand exceeds the available funding, the Department will establish a cut-off date, and return to the practice of funding applications in order of Priority Rating. The State Local Bridge Program has a defined application window that usually falls within the Spring of the prior fiscal year that the application will be for (I.E; the application window for Fiscal Year 2023 applications will be held in the Spring of 2022). The application window is covered under CGS 13a-175s.

The Local Bridge Program office will review the preliminary application, and if the project qualifies and sufficient funding is available, CTDOT will issue a “Commitment to Fund” letter. Once such a commitment is issued, subsequent priority list revisions will not alter the commitment, and the Department will participate in the applicable portion of all eligible project costs, up to the limit of available funding. Engineering costs incurred prior to the Commitment to Fund date *are* reimbursable under the state program, but construction costs incurred prior to the commitment to fund are *not*. Therefore, construction should not begin until after the Commitment to Fund is signed. For federally funded projects, no costs incurred before being specifically authorized by FHWA and CTDOT are reimbursable, even if there is a Commitment to Fund the project in place.

Please note that the application form is a legal document, which will be referenced in the project agreements. The most recent version must be used, and it must not be altered in any way. Because legal requirements change from time to time, use of an altered or outdated form may cause an application to be delayed or rejected.

After the Commitment to Fund is issued, the subsequent development of the project will be determined by whether or not federal funds are involved. Federally funded projects will follow the path outlined in Section [5.3 – Procedures for](#) . Projects not federally funded will follow the path outlined in Section [5.2 – Procedures for State](#) .

4.3 – PROJECT DESIGN

With the Commitment to Fund in hand, the municipality is ready to proceed with the design stage, where the scope and estimated costs will be more accurately defined. As a part of the design process, a public informational meeting should be held to solicit public input. The purpose of the public informational meeting is to provide a forum where the project is presented and explained, then the public is given an opportunity to ask questions and make comments. Minutes summarizing the public comments should be kept, but it is not necessary to have a word-by-word transcript prepared by a stenographer.

As the project develops, the municipality must inform the Department of any major changes in the cost of the project (in excess of 10%), so that the Department can allocate sufficient funding to the project. Failure to notify the Department of increases in the cost of a project may result in the state not participating in any costs beyond the amount of the original Commitment to Fund.

The individual responsible for the project's design must be a professional engineer licensed in Connecticut, and must sign and seal the plans and specifications. The designer will be required to certify, on the State Local Bridge Program Supplemental Application form, that the project has been designed in accordance with applicable standards.

While not mandatory on the State Local Bridge Program, the municipality may want to use CTDOT standard drawings and specifications. Standard drawings, specification, and other references are available online at: <https://portal.ct.gov/DOT/Business/General/Doing-Business-With-CTDOT>.

All coordination and design submittals must be sent to the Local Bridge Program Project Engineer assigned to the project, who will forward it to the respective CTDOT or other agencies for review and/or approval. All general project information or guidance request should be addressed to the assigned Project Engineer.

4.3.1 – Design Standards – State Funds

Design criteria should be consistent with the latest edition, in effect at the time of the filing of the Supplemental Application, of the AASHTO LRFD Bridge Design Specifications, the *Bridge Design Manual*, the *Highway Design Manual*, the *Drainage Manual*, the Form 818 (with current Supplemental Specifications), and the *Stormwater Quality Manual*. These guidelines have considerable flexibility built into them, and also have provisions for deviating from standards when conditions warrant. Additional consideration should be given to remaining fatigue life, hydraulic analysis, and scour susceptibility.

4.3.1.1 – Geometrics

Design criteria should comply with AASHTO and *Highway Design Manual* standards for the applicable roadway classification. CTDOT encourages designers to use context-sensitive design solutions whenever appropriate. As part of the Supplemental Application, to be filed with CTDOT after the design of the project is complete, the licensed professional engineer responsible for the project's design is required to certify that the design conforms to current CTDOT and AASHTO standards "or previously agreed to digressions from those standards". The wording allowing "previously agreed to digressions" from standards is intended to allow municipalities, as the owners of local bridges, to play the same role in weighing design factors for their own bridges as CTDOT plays for state bridges. The allowance for reasonable flexibility in design should not be interpreted to mean that *no* standards apply to Local Bridge Program projects; it only means that the municipality, rather than CTDOT, should weigh and document the criteria for deviating from standards. As the decision-maker, the municipality also assumes any liability associated with departing from standards. Note that a professional engineer will be

reluctant to sign any plans that deviate too far from accepted practices, and should not be pressured to do so.

As a rule of thumb, CTDOT and AASHTO standards require that the curb-to-curb roadway width on a bridge should be at least as wide as, and preferably wider than, the approach roadway including usable shoulders, whether or not the approach roadway shoulders are paved. This is important for public safety, since bridges that are narrower than the approach roadway are associated with significant increases in motor vehicle accidents at the bridge, either impacting the bridge itself, or striking on-coming traffic in an attempt to avoid striking the bridge parapet. New one-lane bridges are only acceptable on one-lane roads.

If, in order to retain and rehabilitate an existing bridge constructed prior to 1972, the municipality determines that it is necessary to deviate from the AASHTO or *Highway Design Manual* guidelines, it must consider and document all of the factors listed in CGS Section 13a-86a (see [Appendix 1 – Local Bridge Legislation](#)). This documentation should be retained in the project’s file, and need not be submitted to the Department unless requested. If federal funds are involved, specific authorization from CTDOT and FHWA must be received to deviate from standards.

4.3.1.2 – Life Expectancy

All projects must follow Engineering Bulletin [EB-2022-2](#) “Life-Cycle Cost Assessment (LCCA) Guidelines to determine appropriate life expectancy.”

4.3.1.3 – Load Capacity

Bridges on the National Bridge Inventory (NBI) must be designed to carry all legal loads, while a minimum of HL-93 load capacity must be achieved on all structures, except that in the case of a rehabilitation project where it would be difficult or impractical to upgrade the structure to carry full legal loads, a municipality may opt for a lesser load limit. In all cases, a minimum load capacity of at least 14 tons must be obtained. Minor rehabilitation projects may use either the Load Factor (LF) or Load and Resistance Factor Rating (LRFR) methods to determine the load rating; major rehabilitation (such as superstructure replacement) or replacement projects must be designed using the LRFR method. Load ratings must be performed and submitted as part of the final design submittal or as part of the Supplemental Application package.. Load ratings must adhere to the *Bridge Load Rating Manual* (see Section 1.4 of the Load Rating Manual for requirements for performing load rating analysis). Further information can be found in [Engineering Bulletin 2018-2: Revised Bridge Load Rating Manual](#) and the *Bridge Design Manual*.

4.3.1.4 – Scour Analysis

Reasonable and prudent hydraulic analysis of a bridge design requires that an assessment be made of the proposed bridge's vulnerability to undermining due to potential scour. Because of the extreme hazard and economic hardships posed by a rapid bridge collapse, substructures for bridges over waterways should be designed to safely support the structure subjected to the design scour.

With regard to abutment or pier foundations, two basic approaches to achieving this goal are available to the designer, listed as follows in order of preference:

- Design the foundation to resist the effects of scour from a superflood:
Foundations subjected to scour should be designed with footings supported on piles, footings founded on rock or deep footings (located below the maximum estimated scour). Structural tremies (concrete poured under water, which directly supports the foundation loads) should be used only where no other solution is feasible. Preference for foundations adjacent to or within waterways will be for pile-supported footings or direct foundations on rock. For pile foundations, the top of footing should be set below the sum of the long-term degradation and contraction scour.
- Protect the substructure units with riprap or similar armoring layers:
In general, the use of riprap to provide scour protection for new bridges is discouraged and should be used only where it has been demonstrated that alternate, preferred means of designing bridges to be safe from scour related failures are not feasible. On bridge rehabilitation projects where the substructure is being repaired and incorporated in the reconstruction of the bridge, riprap scour countermeasures may be an effective solution for protecting the bridge from scour.

The designer should explore and incorporate into the design all reasonable methods of minimizing local scour, such as the use of embankment or "stub" abutments placed at the top of a protected slope. These types of abutments are much less susceptible to scour than full height abutments. The use of stub abutments does not relieve the requirement for founding on piles or directly on rock. Piers that may experience local scour should be flow aligned and should have streamlined end sections.

4.3.1.4.1 – Reconstructed or Rehabilitated Bridges

Generally, scour evaluations should be performed for all bridges that are to be reconstructed or rehabilitated where significant capital investment is involved, and where the bridge has been classified as scour susceptible or scour critical. A significant capital investment correlates to the following improvement categories:

- Deck Replacement
- Superstructure Replacement or Widening
- Modification or Major Repairs to Substructure Units

Bridges that have been classified as scour susceptible or scour critical should have hydrologic, hydraulic and scour evaluations performed which are sufficiently detailed to satisfy all applicable design and permitting requirements. All necessary scour countermeasures for scour susceptible or scour critical bridges should be incorporated into the overall project plans.

Further information on designing foundations for scour can be found in the Department's *Drainage Manual*, and the FHWA document entitled "Evaluating Scour at Bridges" (HEC-18) and the *Bridge Design Manual*, Section 5.14.

4.3.1.5 – Hydraulics

A hydraulics analysis will be required whenever the waterway has been studied by FEMA for flood insurance purposes, or if an U.S. Army Corps of Engineers permit is required. All culverts and bridges must be designed in accordance with methods and procedures defined in the *Drainage Manual* as revised, Best Management Practices as outlined in Section 1.10 of the Form 818, as revised by the latest supplements, and the *Stormwater Quality Manual* as revised, and meet the following requirements:

- Culverts and bridges must be designed for flood frequencies and under clearances stipulated in the *Drainage Manual*, except that on local roads and driveways with low traffic volumes and where alternate routes are available, lower design criteria are acceptable when:
 - Flood discharges may be allowed to cross over roads that are at or close to the floodplain grade.
 - Water surface elevations are not increased by more than one foot, and will not cause damage to upstream or downstream properties.
 - Provisions are made to barricade the road when overtopped, including a monitoring plan.
 - The road or driveway is posted as being subject to flooding.
- The location of new bridges and culverts must minimize the relocation of the watercourses.
- Rigid floors at new or replaced bridges and culverts must be depressed below the normal streambed with one foot native streambed material on top in order to maintain fish passage, unless written approval is given by DEEP Fisheries.
- Solid parapet walls at bridges and culverts in the sag part of vertical curves are only to be used when such walls are deemed hydraulically acceptable and if such walls do not cause an adverse impact.
- Multiple small openings are discouraged.

4.3.1.6 – Fatigue

Designs must also consider fatigue on existing structural elements in accordance with the AASHTO Guidelines for Fatigue Evaluation of Bridges.

4.3.1.7 – Longitudinal Barriers

Guide railing must conform to AASHTO standards and include safe leading end transitions. Consideration should be given to upgrading the bridge railings to current AASHTO standards. All new longitudinal barriers, including bridge leading end attachments, must meet or exceed requirements of CTDOT [Engineering Directive 2020-01](#). Any deviations from this requirement must request an exception from design standards from the Department. Solid

parapet walls at bridges and culverts in the sag part of vertical curves are only to be used when such walls are deemed hydraulically acceptable.

4.3.1.8 – Environmental

Stormwater management systems must be designed in accordance with the *Stormwater Quality Manual*, and must incorporate primary treatment measures whenever possible. Projects must be constructed and maintained in accordance with permit requirements, which generally include conditions such as:

- **Time of Year Restriction on In-water Construction:** construction activities are not permitted during certain times of the year in any watercourse unless the work is confined by a cofferdam or other device which isolates the activity from the watercourse, unless the DEEP Inland Fisheries Division has given written authorization that the proposed activity will not adversely impact any fisheries habitat.
- **Pollution Prevention/Best Management Practices:** The work shall not result in pollution or other environmental damage and shall employ best management practices to prevent such damage. In addition to employing any other best management practices necessary, erosion and sedimentation controls must be installed and maintained in good condition to prevent erosion and discharge of material into any waters, including wetlands. Erosion and sedimentation controls should be designed, installed and maintained in accordance with the [2002 Connecticut Guidelines for Soil Erosion and Sediment Control](#), and Best Management Practices as outlined in Section 1.10 of the Form 818, as revised by the latest supplements.
- All equipment and materials should be stored outside the 100-year floodplain whenever possible. The contractor shall be required to have a flood contingency plan and remove equipment and materials from the 100-year floodplain during periods when flood warnings have been issued or are anticipated by a responsible governmental agency. It shall be the contractor's responsibility to be knowledgeable of such warnings when flooding is anticipated.
- Work shall not be conducted in or adjacent to watercourses and reservoirs used as public drinking water supply sources without coordination with the water supply utility and Department of Public Health.
- All temporary structures, cofferdams, and fill shall not impede the movement of flood flows and shall be removed at the completion of their use (Sheet piling that is cut 1 foot below existing grade is considered to be removed.). The design of temporary structures, cofferdams and fill shall be based on Appendix 6f of the *Drainage Manual*, where applicable. Temporary facilities must allow for passage of fish with minimal disturbance to the streambed. Any temporary facilities or equipment requiring work in, or placement in a waterway, must be able to be removed in a timely manner from the site in case of a flood warning, except temporary structures that have been designed in accordance with the guidelines outlined in the *Drainage Manual* for Temporary Hydraulic Structures.

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- Structures should be designed in accordance with [DEEP's Stream Crossing Guidelines](#), and the U.S. Army Corps of Engineers Stream Crossing Best Management Practices.
 - All fill shall be clean material, free of stumps, rubbish, hazardous, and toxic material.
 - Once work is initiated, it shall proceed rapidly and steadily until completed and stabilized in order to minimize use of temporary structures and to minimize soil erosion.

4.3.2 – Design Standards – Federal Funds

For projects with federal funding, the project's design will be required to comply with all CTDOT standards where possible; any deviations from the AASHTO or CTDOT design guidelines *must* be approved by the Department and FHWA. In all cases, the design must improve the existing conditions, and correct all of the problems that rendered the bridge eligible for federal funding. A scour analysis will also be required, as described above and in the *Drainage Manual*.

4.3.3 – Permits

The municipality is responsible for obtaining all permits required by federal, state and local regulatory agencies, including local Inland Wetlands and Watercourses agency approval. Most projects that affect a waterway or wetlands will require a permit from the U.S. Army Corps of Engineers, *regardless of the funding source*. Most bridge projects will also require some type of Flood Management review, typically at the local level, to comply with the National Flood Insurance Program. If the Municipality elects to use the DMS program for FLBP, the Department's Consultant Liaison Engineer (CLE) will be responsible for obtaining all permits.

If the project is likely to involve a structure of historic interest, the [State Historic Preservation Office](#) (SHPO) should be contacted. Tribal Historic Preservation Office (THPO) coordination may also be required.

Northern Long Eared Bat Protection; On November 29, 2022 the U.S. Fish and Wildlife Service published a final rule to reclassify the northern long-eared bat as endangered under the Endangered Species Act. Any project requiring a federal permit (e.g. Army Corps of Engineers permit, including Self-verification) or receiving federal funding will require consultation with the United States Fish and Wildlife Service (USFWS) mapping database IPaC at <http://ecos.fws.gov/ipac/> to determine if the species is present within the project limits and if further consultation is required for the project. Time of year restrictions for tree clearing may be required by USFWS as part of the consultation or the Army Corps as part of their permitting process. If an Army Corps permit is required, early coordination with the Corps is recommended to determine if the presence of Northern Long-eared bats will affect permit category (See USACO Connecticut General Permit General Condition #10.). It is recommended that coordination be conducted at an early stage for all projects. The responsibility for coordination is dependent on which program is being used. For State Local Projects, the Municipality will be responsible, for Federal Local Projects, the Department/CLE will be responsible.

Essential Fish Habitat Coordination – The National Marine Fisheries Service (NMFS), a division of the National Oceanic and Atmospheric Administration (NOAA) may be consulted by USACE during the permitting process. If Essential Fish Habitat (EFH) is identified within the project limits. This consultation between ACOE and NMFS could result in permit special conditions, some of which may relate to time-of-year (TOY) restrictions, particularly in coastal areas or tidal waterways. Early coordination with the ACOE may be warranted to determine if the presence of EFH within the project limits may affect permitting or result in TOY restrictions. More information regarding EFH can be found on NOAA’s website at: <https://www.fisheries.noaa.gov/insight/understanding-essential-fish-habitat>

Some projects, especially those involving extensive impacts or larger waterways, may also require additional state and federal permits, such as a U.S. Army Corps of Engineers Individual permit, and U.S. Coast Guard Bridge Permit (and/or navigation lighting approval or waiver). Projects impacting tidal, coastal or navigable waters will require permits from the DEEP’s Bureau of Water Protection & Land Reuse (Formerly Office of Long Island Sound Programs). Construction sites disturbing one acre or more will also require a National Pollutant Discharge Elimination System (NPDES) permit under the Federal Clean Water Act. For construction projects with a total disturbed area (regardless of phasing) between one and five acres, the Municipality must provide a review and written approval of the erosion and sedimentation control measures and certify that the plan follows the [2002 Connecticut Guidelines for Soil Erosion and Sediment Control](#). If no review is conducted by the Municipality, the permittee must register and comply with Section 6 of the DEEP **General Stormwater Discharge Permit for Construction Activities and Dewatering of Wastewater**, Modified April 9, 2010. Copies of all permit applications and approvals must be included in the contract documents.

Following is a list of regulatory approvals which may be required, depending upon the particulars of the project:

- Municipal Inland Wetlands and Watercourses Permit under the Inland Wetlands and Watercourses Act (CGS Sections 22a-36 to 22a-45(a), inclusive), and municipal flood management review;
- Water Diversion Permit under the Connecticut Water Diversion Policy Act (CGS Sections 22a-365 to 22a-378(a), inclusive),
- Dam Safety Construction Permit (CGS Sections 22a-401 to 22a-411, inclusive),
- DEEP Structures, Dredging and Filling Permit (CGS Sections 22a-359 to 22a-363f, inclusive),
- DEEP Tidal Wetlands Permit under the Tidal Wetlands Act (CGS Sections 22a-28 to 22a-35a inclusive),
- DEEP Certificate of Permission (CGS Section 22a-363b (a)),
- Long Island Sound General Permits (CGS Sections 22a-28 to 22a-35 and Sections 22a-359 to 22a-363f inclusive),
- Coastal Area Management Review (CAM) (CGS Section 22a-90 to 22a-113b, inclusive)
Note: not required if obtaining a COP, Structures & Dredging or Tidal Wetland Permit

approval from DEEP OLISP. Some Municipalities have a local CAM program - please contact the appropriate municipal commission or agency.

- U.S. Army Corps of Engineers Permit Application (typically a General Permit concurrence). If the project may require a Pre-Construction Notification (Formerly Category 2) or individual USACE permit, request that the project be reviewed at the monthly DOT/DEEP/USACE Project Managers' Meeting held at CTDOT.
- U.S. Coast Guard Bridge Permit, Construction Letter, and/or navigation lighting approval (or waiver).
- Department of Public Health Change in Land Use Permit Application.
- DEEP Section 401 Water Quality Certificate.

In the case where a general permit authorization, or State 401 Water Quality Certification is required, the municipality or its engineer should consult with the CTDOT Local Bridge Program staff for advice as to how to handle the situation.

1. **NOTES FOR ALL DEEP PERMIT APPLICATIONS:** Applications must include plans signed and sealed by a professional engineer licensed in Connecticut. ***The application will not be reviewed until signed and sealed plans are provided.*** If these plans are not final construction plans, a notation to the effect of "For Permit Application" should appear on the plans. It is not necessary for plans submitted for permitting purposes to show internal structural details unrelated to the project's environmental impact (such as rebar details). All plan sheets must be dated, and any future modifications to the plan sheets provided with the application must include a list of drawing revisions on the cover sheet, including sheet number, description, and date of the revision. The revised sheet must also include the latest revision date. Permit approvals refer to the plans, including the date, and any revisions. Therefore, the applicant is responsible for providing clear and accurate documentation of all proposed activity on the plan sheets. Any activity not shown on the approved plans is not in compliance with the issued permit. Further permit plan guidance can be found on the [Office of Environmental Planning Webpage](#)

When submitting an application requiring river hydraulic models, the following information must be provided.

1. A copy of the FEMA back-up data. FEMA cross-sections and flows must be used in development of the model. If FEMA backup is not available, a copy of the original request to FEMA and the response letter back from FEMA must be provided.
2. Electronic Files including all runs as defined in [Appendix 3 – Hydraulic Analysis Guidance Document](#). (All runs must be provided on one disk under one project.)
3. No modifications to floodway boundary are permitted without approval from FEMA.
4. The hydraulic analyses and results of the hydraulic modeling should be clearly summarized in the engineering report. More guidance on the requirements for hydraulic analysis is included in [Appendix 3 – Hydraulic Analysis Guidance Document](#).

This is fundamental information required to make a complete application; it is not considered to be extra work. Failure to provide the above as a minimum requirement *will result in rejection* of the application.

4.3.3.1 – Flood Management Certification

As of July 1, 2013, State Flood Management Certification is no longer required for projects funded under the State Local Bridge Program. However, municipalities are reminded that local flood management review is still required. If available, a copy of the hydraulics, hydrology, and scour analysis should be furnished to CTDOT to be kept in the file on the bridge. It is recommended that the designer consult with [DEEP Fisheries Division](#) early in the process to address any concerns they might have.

Note that project funding from any other state or federal program may trigger the need for State Flood Management Certification.

4.3.3.2 – Flood Management General Certification – Federal Local Bridge Program

For certain minor activities within regulated floodplain, the Department of Transportation has been granted a “General Certification” by DEEP through March 22, 2032. Authorized activities are also recognized as being allowed in any Coastal Flood Hazard Area, with the understanding that all other necessary coastal permits will be obtained through DEEP OLISP. When all work on a project falls into the categories described in the approval, CTDOT’s Hydraulics and Drainage Section will certify that the project is covered by the general certification, and no separate FMC application to DEEP, or FM-MOU application, will be needed. Activities should be defined as eligible by the actions listed in the description under each category, and that the nature of work itself does not necessarily have to match with the Category heading.

The [Flood Management Certification Request Form](#), must accompany the application package. The justification section must be completed by the designer

4.3.3.3 – Stream Channel Encroachment Lines

Stream channel encroachment lines were previously established for about 270 linear miles of riverine floodplain throughout the state, but those lines are no longer in effect. However, if the DEEP Commissioner establishes new lines in the future, they must be taken into account.

4.3.3.4 – U.S. Army Corps of Engineer Permits

Any project that impacts a federally regulated waterway or wetlands (which are almost all waterways) will require a permit from the U.S. Army Corps of Engineers (, USACE). It is the responsibility of the municipality’s designated agency or commission (for example, Inland Wetland or Conservation Commission) to pursue these permits and provide the necessary documentation to the USACE. If a project may fall under Pre-Construction Notification category (previously known as Category 2) of the General Permit, or may need an individual USACE permit, a request should be made through the CTDOT Project Manager to be placed on the monthly interagency DOT/DEEP/USACE Project Managers’ Meeting. During the interagency meeting, DEEP will determine if the project requires an Individual 401 Water Quality Certification. If a project falls under the Self-Verification category (previously known as Category 1), attendance at the interagency meeting is not necessary.

4.3.3.4.1 –General Permit

The New England District of the U.S. Army Corps of Engineers issued a new general permit (GP) in December 2021 (expiring December 2026) to expedite review of minimal impact work in coastal and inland waters and wetlands within the State of Connecticut and lands located within the exterior boundaries of an Indian reservation. Most Local Bridge Program projects will have impacts small enough that they will be covered under the Connecticut General Permit. Please note that any project with impacts to vegetated tidal wetlands will automatically require an individual ACOE permit, regardless of the acreage disturbed. Be aware that ***there are some changes from the prior PGP***. If there are questions about eligibility, a request should be made to have the project reviewed at the monthly Project Managers’ Meeting. GPs only cover work initiated prior to the expiration of the GP.

Please refer to the USACE [Connecticut General Permit Documents](#) webpage for copies of the GP documents and more information.

4.4 – SUPPLEMENTAL APPLICATION

This sub-section is only applicable to state-funded projects.

Once the final design, rights-of-way acquisition, utility coordination, permits, public hearing are completed, and the project has been advertised for construction bids, the municipality is ready to submit the Supplemental Application. The Supplemental Application must be filed within 18 MONTHS from the Commitment to Fund date, unless an extension of that deadline is requested and approved. To request an extension, the municipal official overseeing the project must send the latest version of the Time Extension for Supplemental Application form to the

Project Engineer for the Local Bridge Program. The form contains fields for providing the reason(s) for the project delay, revised project schedule, and revised cost estimates. The municipality must demonstrate that it is actively pursuing the project in order to justify an extension. **If there are significant scope or cost changes (in excess of 25% of original estimate, or \$250,000, whichever is larger) from the original approved application, the municipality must inform the Department immediately for review of program eligibility and availability of funds. Failure to submit a time extension request or supplemental application within the allotted time periods will result in the project being considered inactive and subject to cancelation.**

The Supplemental Application packet will be submitted with the latest version of the Supplemental Application form supplied by the Department without any alterations, and must include the final plans, specifications, engineer's final detailed cost estimates, and other items listed in the form's checklist, and certifications including the following:

- By an authorized municipal official that the project has been designed in accordance with the program requirements. The municipality has the responsibility for approving any digressions from AASHTO or *Highway Design Manual* guidelines for rehabilitation projects funded solely under the State Local Bridge Program. If there are deviations from accepted standards, the municipality must certify that the deviations do not reduce public safety, and must accept any liability which arises from deviation from the accepted standards, and must retain, for the lifetime of the bridge, documentation of the rationale for the deviation from standards.
- By an authorized municipal official that all necessary permits have been acquired and will be complied with.
- By a professional engineer licensed in Connecticut that the design conforms to the minimum design loading, design life, AASHTO, *Highway Design Manual*, and *Drainage Manual* requirements. If there are deviations from accepted standards, the designer must certify that the deviations have been authorized by the municipality and do not reduce public safety, and must accept any liability which arises from deviation from the accepted standards.
- By an appraiser that all property values assessed on the project are fair and reasonable. If no property was acquired for the project, a letter to this effect should be submitted.
- By an authorized municipal official, that property acquisition is complete or will be complete at the time construction starts. Please note that the documents listed in CTDOT's Engineering Directive regarding state funded municipal projects requiring rights of way acquisitions must be submitted to the Local Bridge Program office before payment of the state grant can be made.
- By an authorized municipal official that public utility companies are aware of the project and prepared to relocate or adjust facilities as necessary to construct the project, and that estimates for the relocation or adjustment of municipally owned utilities are realistic for the project need.
- Certified copies of all bids of contractors with respect to the Project.

- Evidence that the Municipality has available to it or has sufficient funds to pay for their portion of the Project Costs.

On projects that are not federally funded, the Department requires plans and specifications to be submitted primarily for data collection purposes, load rating, and for planning inspections, so that the official files maintained on each bridge can be kept up to date. The Department does not routinely review or approve any plans or specifications (except for those projects that are federally funded) - that responsibility lies solely with the municipality. However, the Department will require that any project where the bridge is on the National Bridge Inventory (NBI), or if the municipality is installing a bridge that will be on the NBI (Over 20 foot span), that a 60% plan set be submitted for a review. The Department may offer comments on the proposed design, as workload permits. The plans should show structural members in sufficient detail to enable load-rating calculations to be performed (if structural details are left to a vendor, working drawings and any shop drawings must be submitted as well).

4.5 – AGREEMENTS

All payments to the municipality by the state must be made in accordance with a formal state/municipal agreement. This agreement is a standard form agreement, approved by the Attorney General, which the municipality will not be allowed to add, delete, substitute, or modify any portion of. For federally-funded projects, there will be separate agreements for each phase of the project (design, rights-of-way, and construction). For state funded projects, there will normally be only one agreement covering all phases of the project. If the scope of the project changes significantly after the execution of the original agreement, a supplemental agreement may be executed.

Upon review and acceptance of the Supplemental Application, the Department will prepare and forward a state/municipal agreement to the municipality for signatures. The grant amount in the agreement is based on the data submitted as part of the Supplemental Application. The agreement will be prepared electronically by the Local Bridge Program office, and forwarded to the municipality along with instructions for signature by the municipal official. Once signed by the municipality, an electronic copy of the agreement, along with attachments, must be returned to the Department to be signed by the state. When the agreements are fully executed, an electronic copy of the agreement will be returned to the municipality.

Upon receipt of bids, the municipality will certify the bids, select the successful bidder, and submit certified copies of the bids to the Department as part of the Supplemental application package. In the event that the municipality selects a bidder other than the “low bidder”, documentation substantiating the selection should be submitted.

Once all administrative requirements are complete and all documents required by the agreement have been submitted, the Department will issue the final grant payment to the municipality. The grant funds will then be transferred into the municipality’s account by ACH or a check; the Local Bridge Program office will prepare the documents necessary to transfer the

funds. The municipality should ensure that the Department's Accounts Payable unit has the correct receiving account information on file in the CORE-CT system.

4.6 – PROJECT COMPLETION

When construction is nearly completed, the Municipality should notify the Department as to the date of the semi-final inspection, so that representatives of CTDOT can be present for the inspection. Once construction has been finished and the final inspection completed, the municipality must certify to the Department that the project has been completed, within 90 days of the completion of construction. It is important that the project be certified as complete as soon as possible after construction is completed, since the certification date will be used to determine future funding eligibility. The municipality should also submit any shop drawings and a set of “as-built” plans to the Department, to be included in the Bridge Safety & Evaluation Section's file on each bridge. The shop drawings and as-built plans will be used to plan any future inspections, and for load rating purposes.

The municipality must obtain an audit of the total final cost of the project by a Certified Public Accountant (either a project-specific audit, or more typically, as part of the annual municipal single audit) and forward the audit and supplemental schedules to the Department for the purpose of adjusting the final grant amount and closing out the project. Failure to provide an audit is an event of default under the project agreement, and may result in the Department requesting the return of the grant, and the municipality becoming ineligible for future financial assistance.

The contents of the audit report must be in accordance with government auditing standards issued by the Comptroller General of the United States, and the requirements as outlined in the OMB Circular A-133, “Audits of States, Local Governments, and Non-Profit Organizations” and the State Single Audit Act, as applicable.

If the audit will be performed as part of the municipality's annual single audit, the auditor should be given notice that the municipality has a Local Bridge Program project. The auditor can then identify and separate out all expenditures directly related to specific bridge projects, in supplementary schedules with program/grant information such as the bridge number and location, account numbers, CTDOT project number, project phase (design, construction, etc.), and expenditures broken down by phase (see Section [3.1.2 – Eligible Costs](#) for state funded projects or Section [3.3.1 – Off-System Bridge](#) for federally funded projects for a list of expenditures which can be included in each phase). A sample supplemental schedule will be attached to the project agreement. The sum of project expenditures should agree, in total, to the program/grant expenditures as shown in the annual audit report. Any costs that are not supported by the audit report and supplemental schedules will not be eligible for reimbursement.

The municipality must retain all records for at least seven years after issuance of the project's certification of acceptance, or three years after receipt of the final payment, whichever is later, provided that there is no pending litigation. These records include the contract, contractor's monthly and final estimates and invoices, construction orders, correspondence, field books, computations, contractor's payrolls, EEO/AA records/reports, and any other project related records. **The audited Municipality must obtain written approval from the Connecticut Department of Transportation's Local Bridge Program prior to destruction of any records and/or documents** pertinent to the project. This requirement is *in addition to* any requirements of the Freedom of Information Act or the Connecticut State Library's Office of the Public Records Administrator. Note that many of records for a bridge project must be retained for the life of the bridge, and may only be destroyed after receiving the signed approval form (RC-075) from the Public Records Administrator.

Upon review by the Department's External Audits staff, the municipality will be notified by letter of its eligibility for additional grant funds, or that reimbursement is due the state. If a balance is due the municipality, the Project Engineer for the Local Bridge Program will make arrangements to have the supplemental grant transferred to the municipality's account. If a balance is due the state, the Department's Accounts Receivable unit will send an invoice to the municipality.

CHAPTER 5: GUIDELINES FOR OBTAINING FUNDS

The following guidelines outline, in typical order, those steps that municipalities must follow to obtain funding under the Local Bridge Program. These guidelines are general, and are intended only to give an overview of the process. CTDOT will give additional guidance to the municipality as the project progresses. Of the steps outlined below, please note the additional procedures that must be followed when a bridge is owned or maintained currently by more than one municipality.

ALL APPLYING MUNICIPALITIES SHOULD REVIEW THESE PROCEDURES WITH THEIR MUNICIPAL ATTORNEYS AND BOND COUNSEL, WHEN APPROPRIATE, IN ORDER TO PLAN FOR THEIR LOCAL BRIDGE PROJECTS. NOTE THAT THE MUNICIPALITY MUST APPROPRIATE FUNDS FOR THE FULL AMOUNT OF THE LOCAL BRIDGE PROJECT. WHEN A LOCAL BRIDGE PROJECT IS TO BE FINANCED BY BORROWING, THE MUNICIPALITY MUST AUTHORIZE BONDS FOR THE MUNICIPALITY'S SHARE OF THE TOTAL COSTS.

5.1 – INSTRUCTIONS FOR COMPLETING THE PRELIMINARY APPLICATION

Completing the Preliminary Application is the first step in the application process. Because there are specific legal requirements that must be met, application must be made using the latest form published to the Local Bridge Program webpage. Other forms are not acceptable, and may delay processing of the application. It must contain the following information:

5.1.1 – Administrative Project Info

Town/City/Borough of: Name of the municipality responsible for the bridge project.

Bridge Location: The name of the road that the structure carries and the feature (road, river, railroad, etc.) that the bridge crosses.

Bridge Number: The 5 or 6-digit number assigned to the structure by CTDOT's Bridge Safety & Evaluation Section.

Structure Length: The length of roadway which is supported on the bridge structure. Length should be measured from back to back of backwalls of abutment or from paving notch to paving notch. For culverts, lengths should be measured along the center line of roadway regardless of their depth below grade. This measurement should be made between inside faces of exterior walls.

Sufficiency Rating: The sufficiency rating calculated from the most recent bridge inspection report. If there is no sufficiency rating shown in the list of eligible bridges, it can be computed from the inspection report using the formula found in Section [2.1 – Sufficiency Rating](#).

Priority Rating: The priority rating can be found on the list of eligible bridges in the appendices. If there is no priority rating shown in the list of eligible bridges, it

can be computed from the inspection report using the formula found in Section [2.2 – Priority Rating](#).

Program Inclusion: Whether the application is requesting funding under the State Local Bridge Program or the Federal Local Bridge Program.

Evaluation & Rating Performed by: Check “*State Forces*” if the rating data shown and the description of existing conditions given was performed by CTDOT (an inspection conducted by a consultant under contract to perform bridge inspections for CTDOT’s Bridge Safety & Evaluation Section should be shown as being accomplished by state forces). Check “*Others*” if the rating data shown and the description of existing conditions given were performed by someone other than CTDOT, such as the Town/City Engineer or a consulting engineer retained by the municipality. If the rating is based on an inspection by someone other than CTDOT, a copy of the inspection report must be included.

If Others, Name of Professional Engineer: The name of the Connecticut-Licensed Professional Engineer who actually evaluated the bridge, if the evaluation was not done by CTDOT.

Connecticut Professional Engineers License Number: The license number of the Professional Engineer who actually evaluated the bridge, if the evaluation was not done by CTDOT.

Engineer’s Address: The address of the Connecticut-Licensed Professional Engineer who actually evaluated the bridge, if the evaluation was not done by CTDOT.

Description of Existing Condition of Structure: Attach a description of the current condition of the bridge. This should generally include the latest inspection report.

Description of Scope of Project: Attach a description of the proposed work to be done. At this point in the project, which may be before detailed engineering is performed, only rough estimates may be available. If available, preliminary plans, specifications, quantity estimates and hydraulic data should be included. One or more of the following codes can be used to describe the scope of the project:

Figure 5-1: Bridge Repair Codes

Letter Code	Description
A	Bridge replacement (in place)
B	Bridge replacement (New Alignment)
C	Superstructure replacement
D	Superstructure repair or strengthening
E	Deck replacement
F	Deck repair
G	Substructure repair / modification
H	Full field painting (abrasive blast cleaning or overcoating)
I	Bridge demolition
J	Bridge railing / sidewalk repair
K	Culvert repair / extension / rehabilitation
L	Bridge widening
M	Temporary bridge
N	Bearing replacement or repair
O	Peen cover plates
P	Pin-and-hanger repair or replacement
Q	Field touch-up painting
R	Bridge drainage system repair or replacement
S	Pin-and-hanger elimination-splice plates
T	Pin-and-hanger fail safe system
U	Joint repair or replacement
V	Waterproof membrane w/ bituminous concrete overlay
W	Cathodic protection
X	Other overlays (bituminous, latex modified concrete, thin polymer, etc.)
Y	New bridge on new roadway system
Z	Install environmental or structural monitoring system
AA	Install / repair Incident Management System
BB	Install / repair lighting system
CC	Raise superstructure
DD	Install / repair sign supports
EE	Scour protection
FF	Seismic retrofit
GG	Install / repair fire suppression system
HH	Install / repair inspection equipment
II	Install fencing (use only when fencing is installed onto existing bridge)
JJ	Install structure mounted noise barrier
KK	Mechanical rehabilitation on moveable bridges
LL	Electrical rehabilitation on moveable bridges

Name of Municipal Official to Contact: The name of the municipal official who will be responsible for administering the project, and who can be contacted if any questions arise. Copies of all correspondence will be sent to this person.

Mailing Address: The mailing address for the municipal official who will be the official contact. This will be the address where all agreements and legal notices are sent.

Telephone Number: The telephone number, with area code, for the listed municipal official.

FAX Number: The facsimile telephone number with area code, for the listed municipal official.

E-mail: The e-mail address for the municipal official who will be handling administration of the project. E-mail will only be used for formal, informal, and routine contacts.

5.1.2 – Anticipated Schedule

Note: Dates may be actual or estimated, depending upon circumstances, but all dates should show month, day and year. For example, state “April 30, 2019”, not “Spring 2019” or “mid-2019”, etc. It is understood that estimated dates for future events are approximate and subject to change.

Public Hearing Held: The date that a public meeting is planned to inform the public of the project. This does not have to be a “formal” hearing with a word-for-word transcript, as long as the public is provided an opportunity to comment on the project and minutes are kept.

Design Completion: The date that all final plans, specifications and estimates will be completed.

Property Acquisition Completion: The date that all Rights-of-Way activities will be completed.

Utilities Coordination Completion: The anticipated date that all arrangements with utility companies will be completed.

Advertising: The anticipated date that the invitation for construction bids will be made.

Supplemental Application Submission: The anticipated date that the supplemental application and all of its support documentation will be submitted. This date can be any time after the final design is complete. Please note that this date must be within one year of the Commitment to Fund date. *Note: This item does not apply to federally funded projects.*

Start of Construction: The date that construction is anticipated to begin.

Completion of Construction: The date that construction is anticipated to be completed.

5.1.3 – Preliminary Cost Figures

Preliminary Engineering Fees: The estimated cost of designing the project; include a breakdown of fees. If not known, an amount equal to 15-20% of the Estimated Construction Costs can be used.

Rights-of-Way Cost: The estimated cost of acquiring any property, easements, rights, etc. needed to construct the project.

Municipally Owned Utility Relocation: The cost of relocating any utilities owned by a municipality. Costs are eligible for reimbursement in accordance with ED 2020-3.

Estimated Construction Costs: The engineer's estimate of construction costs, based upon the preliminary plans and specifications. A detailed estimate with estimated quantities and unit prices should be attached, if available.

Construction Engineering: The estimated cost of engineering and related services needed during construction, such as construction inspection, materials testing, review of working drawings and/or shop drawings, etc. If not known, an amount equal to 15% of the Estimated Construction Costs can be used.

Contingencies: The amount to be set aside for unforeseen problems and extra work. This amount may not exceed an amount equal to 10% of the Estimated Construction Costs.

Total Estimated Project Cost: The grand total of all above eligible costs.

Signature: The Application must be signed by the Chief Executive of the municipality, unless another municipal official has been authorized by the municipality's legislative body or charter. If the application is submitted by someone other than the chief executive, proof of authorization by the municipality's legislative body must be submitted along with the application.

5.2 – PROCEDURES FOR STATE LOCAL BRIDGE PROGRAM

5.2.1 – General Steps

- 1) Municipality submits a Preliminary Application to the state by the stipulated deadline. The application deadline will be listed on the Local Bridge website.
- 2) CTDOT reviews the Preliminary Application. If accepted, the state issues a Commitment to Fund letter to the municipality on or about July 31 of the same year that the application is filed. If rejected, the municipality will be so notified, and may reapply in any future fiscal year.
- 3) Municipal official signs and returns the Commitment to Fund letter to the state within 30 days (45 days for bridges owned by more than one municipality). Once the Commitment to Fund has been issued, the project may proceed with design and/or construction as soon as it is ready.

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- 4) The municipality submits a packet, by email, to the Department's Project Engineer containing an Environmental Review Request form and supporting documents (as listed on the form). CTDOT will give SHPO an opportunity to comment on the project as part of the environmental review process, so the municipality does not need to perform this initial coordination. A Permit Need Determination form may also be required in some instances when other sources of state funding are used, such as STEAP. These forms should be submitted as soon as a basic scope has been defined for the project, including possible disturbed/impacted areas. The municipality is responsible for coordinating with regulatory agencies for their approvals/permits as early as possible to prevent delays and potential costly design revisions at a later stage. DEEP Fisheries and NDDB, ACOE, and the local permitting authority are some examples.
 - 5) The municipality's engineer prepares plans and specifications for the project. If preliminary plans and specifications were not ready at the time of preliminary application, they should be furnished to the Department when the design is 30% complete. CTDOT does not "approve" these plans, but may offer suggestions.
 - 6) Municipality holds a public informational meeting about the project, considers public comments, and completes the project design.
 - 7) When the final design is complete, the municipality shall solicit for construction bids. Once responsive bids have been received, the municipality submits the latest version of the Supplemental Application form (see Section [4.4 – Supplemental Application](#)) within 18 months of the Commitment to Fund letter, unless a time extension has been granted, along with the following:
 - (a) Final plans (half-scale is preferred, along with a PDF copy) and specifications certified by a Connecticut Professional Engineer, including any design exceptions;
 - (b) Final estimates;
 - (c) Load Rating documentation;
 - (d) Hydraulic and scour analysis;
 - (d) Proposed project schedule;
 - (e) Municipal certifications, such as:
 - Conformance with design requirements;
 - Acquisition of all permits;
 - Completion of property acquisition;
 - Ownership of or responsibility for bridge;
 - Coordination for relocation of public utilities;
 - (f) Appraiser's certificate as to property acquired, if applicable;
 - (g) Cost data and amount of grant requested.
 - (h) Certified copies of all bids of contractors with respect to the Project along with a bid tabulation
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- 8) CTDOT reviews Supplemental Application. When complete, CTDOT prepares and delivers an electronic copy of a Grant agreement to the municipality.
 - 9) Municipal legislative body votes to approve the local bridge project and to authorize the project financing in accordance with statutory and charter requirements as follows:
 - (a) Appropriates funds to meet total estimated cost of bridge project;
 - (b) Authorizes bonds, including supplemental project obligations, if necessary.
 - 10) Authorized municipal official executes (signs and seals) and returns to the state an electronic copy of the Grant agreement (with exhibits), and a certified copy of municipal proceedings authorizing the project financing.
 - 11) CTDOT reviews the agreement package and authorizing proceedings. State then creates a purchase order, executes the Grant agreement, and returns one original copy to the municipality. (Note: the purchase order is not sent to the municipality.)
 - 12) As soon as possible and before commencing construction - but no later than 90 days after the date of the Grant agreement (unless an extension is granted) - the municipality must submit the following to the state:
 - (a) Evidence that the municipality and the contractor have entered into a legally binding construction contract.
 - (b) Evidence that the municipality has funds available to pay its share of the total project costs;
 - (c) An inquiry as to whether or not the state has funds available to finance, in part, any increase in cost should the total project cost exceed the total project cost stated in the Supplemental Application.
 - 13) Once all the above requirements have been met, CTDOT notifies the municipality that the funds will be released by ACH transfer or check.
 - 14) The municipality commences construction of the project no later than 90 days from the date of the Grant agreement and notifies CTDOT.
 - 15) At the close of every fiscal year during which expenditures were made on the project, the municipality forwards a copy of its annual single audit, along with supplemental schedules, to CTDOT. The state Grant ID number is usually 13033-DOT57000-43456 (see OPM's [Single Audit Compliance Supplement](#) for more information).
 - 16) When the project is deemed to be nearly substantially complete, the Municipality notifies CTDOT of the date of the semi-final inspection. For bridges with spans greater than 20 feet, CTDOT bridge inspectors will attend the semi-final inspection.
 - 17) Within 90 days of the completion of construction, the municipality must certify to CTDOT that the project has been completed in accordance with the submitted plans and specifications.
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- 18) After the final payment to the contractor has been made, the municipality forwards a final supplemental schedule with the total costs of the project to CTDOT to adjust the grant amount.
 - 19) As soon as possible after construction is complete, the municipality (or its Engineer) submits as-built plans to the Local Bridge Program office.
 - 20) CTDOT reviews the project audit, and notifies the municipality of the findings. If the project costs exceed those in the original agreement, the Department will send a supplemental grant to the municipality, provided that funding is available. If the project costs are less than those in the original agreement, the Department will invoice the municipality for the balance due.
 - 21) For any bridge owned or maintained by more than one municipality, the following additional procedures govern funding under the Local Bridge Program:
 - (a) One municipality (the “lead”, also known as “managing” municipality) may assume responsibility under the Local Bridge Program for design and construction of the entire bridge project under an interlocal agreement approved by its legislative body entered into with another municipality whose legislative body must also approve such agreement. Upon entering into such interlocal agreement, the managing municipality may file a preliminary application for the total project costs;
 - (b) In the absence of an interlocal agreement allocating responsibility for maintenance, CTDOT will rely on the municipality named as the applicant on the Preliminary Application form as the managing municipality and seek concurrence from the other municipality(ies) allowing the Commitment to Fund to be issued solely to the managing municipality;
 - (c) Under either of the above scenarios, evidence that each municipality is legally bound to complete its respective portion of the project must be delivered to the state before funds may be disbursed.
 - (d) If one municipality (the “lead” or “managing” municipality) has assumed full responsibility for maintenance of a bridge under a valid interlocal agreement approved by the legislative bodies of all participating municipalities, the lead municipality may file a preliminary application for the total project costs.

5.3 – PROCEDURES FOR FEDERAL LOCAL BRIDGE PROGRAM

5.3.1 – General Steps

- 1) Municipality submits a Preliminary Application.
 - 2) CTDOT reviews the Preliminary Application. If accepted, the state issues a Commitment to Fund to the municipality.
 - 3) Municipal official signs and returns the Commitment to Fund letter to the state within 30 days (45 days for bridges owned by more than one municipality).
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- 4) Following acceptance of a project, a concept meeting is scheduled by CTDOT, between representatives of CTDOT and the municipality, to review the program requirements and to discuss the steps required to move forward with the project following federal and state guidelines. At the concept meeting, the Department will also discuss the Design Managed by State process. The Town will have the choice of electing DMS or Traditional for administration. If DMS is elected, jump to step 10. Following the meeting, the municipality should begin to inform the public of the project by publishing a press release, and by sending notification letters to abutting property owners and other interested parties.
 - 5) The Municipality will then publish a request for qualifications for an Engineering firm to perform the design of the project. Please see Section [5.3.2 – Consultant Selection, Negotiation and Contract Monitoring Procedures for Municipally-administered Projects](#).
 - 6) A design fee will be negotiated for the project between the Municipality and the Selected firm. CTDOT will assist in fee negotiations.
 - 7) Once the design fee is approved, an agreement between CTDOT and the municipality for the design phase of the project is prepared and forwarded to the municipality for signature. If the Municipality has signed the Master Municipal Agreement (MMA) for Preliminary Engineering, then this will be a Project Authorization Letter (PAL).
 - 8) Municipal legislative body votes to approve local bridge project, and to authorize the financing in accordance with statutory and charter requirements, as follows:
 - (a) Authorizes municipal official to execute project agreement;
 - (b) Appropriates funds to meet total estimated cost of bridge project;
 - 9) Authorized municipal official executes (signs and seals) and an electronic copy of the project agreement (with attachments) together with the resolution authorizing the appropriate municipal official to execute the agreement, and certified copies of authorizing proceedings to the state. If the Municipality has signed the MMA for PE, then only one copy of the PAL will need to be submitted to CTDOT for execution.
 - 10) The following pre-design activities are initiated by CTDOT:
 - (a) Environmental Review;
 - (b) State Historic Preservation Office (SHPO) Review;
 - (c) Natural Resources Review;
 - (d) Preliminary Fisheries Review and coordination;
 - (e) Hazardous/Contaminated Materials Screening.
 - 11) If the Municipality elects DMS, CTDOT will conduct the design phase on behalf of the municipality.
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5.3.2 – Consultant Selection, Negotiation and Contract Monitoring Procedures for Municipally-administered Projects (non-DMS Projects)

2. After the concept meeting, the municipality initiates the selection of a designer. Municipalities may undertake the design phase themselves if they have appropriate staff, or may hire a consulting engineer. If a consultant is to be engaged (and reimbursed with Federal-aid), the Qualifications Based Selection (QBS) process must be used unless there is no reasonable expectation that the engineering fees will exceed \$250,000.

The QBS process is intended to promote open competition by advertising, ranking, selecting, and negotiating contracts based on demonstrated competence and qualifications for the type of engineering, design-related and construction inspection services being procured by the town or city (“Municipality”) for a project administered by the Municipality in accordance with an agreement with the State of Connecticut Department of Transportation (“Department”).

The QBS process to be used by the Municipality consists of the following steps:

5.3.2.1 – Solicitation

The Municipality shall solicit, in conformance with federal law and regulations, including but not limited to, 40 U.S.C. § 1101-1104 (“Brooks Act”), 23 U.S.C. § 112, and 23 C.F.R. part 172, the qualifications of prospective consultants to perform services on a Municipally-administered project (“Project”), using at least one of the following methods:

- i. **Publication:** The Municipality shall prepare a Legal Notice by customizing only the indicated fields on the form attached hereto (entitled “Legal Notice Template”) and shall have the Legal Notice published in at least one (1) newspaper having substantial Connecticut circulation **and** at least one (1) trade publication, professional magazine or newsletter. When possible, the Legal Notice shall also be posted on the Municipality’s website (if the municipality does not have an active website, the notice can also be posted on the Local Bridge Program Website). . With respect to any other modifications the Municipality makes to the Legal Notice Template, the Municipality must obtain prior approval from the Department.
- ii. **Publication and Direct Notification:** The Municipality shall prepare a Legal Notice by customizing only the indicated fields on the form attached hereto (entitled “Legal Notice Template”) and shall insert the Legal Notice in at least one (1) newspaper having substantial Connecticut circulation. When possible, the Legal Notice shall also be posted on the Municipality’s website. **In addition**, the Municipality shall prepare a Notification Letter by customizing only the indicated fields on the form attached hereto (entitled “Notification for Letter of Interest Template”) and shall mail the Notification Letter to consulting firms prequalified by the Department. The list of prequalified firms is prepared annually by the Department and available from the Department’s website. The Municipality must mail the Notification Letter to ALL prequalified consultant firms listed under the category of services most appropriate for the Project. With respect to any other modifications the Municipality makes to the Legal Notice Template and Notification Letter Template, the Municipality must obtain prior approval from the Department.

The Municipality shall obtain approval of its selected method of solicitation from the Department. Prior to publishing the Legal Notice and mailing the Notification Letter (as applicable), the Municipality shall obtain approval of those documents from the Department.

Each Project shall be reviewed by the Department's Screening Committee which assigns the appropriate Disadvantaged Business Enterprise (DBE) goal, Small Business Enterprise (SBE) goal or Small Business Participation Pilot Program (SBPPP) goal. The Municipality shall include the goal assigned for the Project in the Legal Notice and the Notification Letters, as applicable.

The deadline for prospective consultants or consultant firms to submit the requested information in response to the Legal Notice or Notification Letter shall be a minimum of thirty (30) days after the publication date of the Legal Notice or the postmark date of the Notification Letter, as applicable. This deadline should be noted in the Legal Notice or the Notification Letter, as applicable.

Solicitation Process – Actions and Approvals Summary:

- The Municipality selects a solicitation method
- The Department approves the solicitation method
- The Municipality prepares draft Legal Notice and/or Notification Letter
- The Department reviews and approves draft Legal Notice and/or Notification Letter prior to publication/mailing by Municipality

5.3.2.2 – Selection

The Municipality shall establish a Consultant Selection Panel ("Panel") having three (3) or four (4) municipal officials and upon request of the Municipality, a member of the Department's Federal Local Bridge Program. One of the panel member must be designated Chairperson by the Municipality. All members of the Panel shall be Municipal officials or employees. At least one (1) member of the Panel shall be the Town/City Engineer, the Director of Public Works or other Municipal official or employee with considerable engineering, technical or other relevant specialized experience that possesses substantial knowledge about the Project. The member of the Panel designated as the Chairperson shall be the individual authorized to sign on behalf of the Municipality the agreement with the Department with respect to its administration of the Project and the agreement with the consultant for performance of services for the Project, or his/her designated representative. The names and titles of Panel members shall be provided to the Department for approval prior to the first official meeting of the Panel.

The Panel shall give fair and impartial consideration to all responses received within the specified time period from prospective consultants. Firms that did not make a submission in accordance with the legal notice may be disqualified. The Municipality must confirm that the

responding consultants are registered with the Secretary of the State of Connecticut, the State of Connecticut Board of Examiners for Professional Engineers and Land Surveyors, and any other applicable State of Connecticut licensing board.

Using the attached “Letter of Interest Rating Form” and “Letter of Interest Rating Summary Form” as samples, the Municipality shall develop individual and summary Letter of Interest Rating Forms to be approved by the Department. Using the approved individual Letter of Interest Rating Form, each Panel member shall independently rate all consultant firms that have responded in accordance with the requirements advertised. The total score from each Panel member for each consultant firm evaluated shall be entered on the approved Letter of Interest Rating Summary Form by the Chairperson. The Chairperson shall review and establish the five (5) top-ranked firms (the “short list”). The Panel shall request that each of those five (5) firms on the short list attend a personal interview with the Panel. All remaining firms shall be notified that they have not been selected for a personal interview. If five (5) or less consultant firms submit responses, the Panel shall interview all firms that have responded in accordance with the requirements advertised. The Municipality must receive approval of its short list from the Department prior to notifying firms and the scheduling of interviews.

Using the attached “Interview Rating Form” and “Interview Rating Summary Form” as samples, the Municipality shall develop individual and summary Interview Rating Forms and a list of proposed interview questions to be approved by the Department prior to scheduling interviews. The interview questions and related selection materials shall NOT be given out to prospective consultant firms or other outside parties in advance of the interviews.

During (or immediately following) each interview, each Panel member shall independently evaluate and rate each consultant firm using the approved individual Interview Rating Form. Subsequent to the completion of each consultant firm’s interview, the Panel members may discuss their observations, and each individual Panel member may enter and adjust their rating only on their own individual Interview Rating Form based on these discussions.

The total score from each Panel member for each consultant firm interviewed shall be entered on the approved Interview Rating Summary Form by the Chairperson. The Chairperson shall make the final selection from the list of all interviewed consultant firms submitted by the Panel. In the process of making the final selection of the most qualified consultant for a specific Project, the Chairperson shall utilize the evaluation criteria set forth in the Interview Rating Form. The Chairperson may request additional information from other sources or individuals that he or she deems appropriate (e.g., the Chairperson may contact references of the consultant firms) to assist in the final selection. All additional information requested and received shall be documented by the Chairperson. Should the Chairperson select a firm other than the top-rated firm following the interviews, the rationale for his/her selection shall be fully documented and should not violate the QBS requirements.

The Municipality shall not request, accept or consider any information relative to fees, costs, pay rates, etc. from any consultant firm or give preference to locally-based consultant firms in the evaluation, ranking, interview or selection of any consultant firm.

Once the Municipality has made its final selection, all of the interview rating materials along with any additional information reviewed by the Municipality for all of the interviewed firms shall be submitted to the Department for review. The Municipality must receive written approval of its final selection from the Department prior to notifying the selected firm, the scheduling of the assignment meeting and the commencement of fee negotiations with respect to the Project. The Municipality shall prepare a written notification to the selected firm advising that the firm has been selected. The Municipality shall also prepare written notification to all other interviewed firms that the firm was not selected, but that it may be contacted should the fee negotiations with the selected firm not be successfully completed.

Selection Process – Actions and Approvals Summary:

- The Municipality establishes Consultant Selection Panel
- The Department reviews and approves Consultant Selection Panel
- The Municipality develops Letter of Interest Rating Forms
- The Department reviews and approves Letter of Interest Rating Forms
- The Municipality reviews responses received and prepares a Short List
- The Department reviews and approves the Short List
- The Municipality develops proposed interview questions and Interview Rating Forms
- The Department reviews and approves interview questions and Interview Rating Forms
- The Municipality notifies all responding firms of their status, conducts interviews of short-listed firms, and makes final consultant selection
- The Department reviews and approves (**in writing**) final consultant selection
- The Municipality notifies (**in writing**) all interviewed firms of their status

5.3.2.3 – Assignment Meeting

After the Department’s approval of the Municipality’s consultant selection process, an assignment meeting will be arranged by the Municipality or the CLE, at which all parties (i.e., Department, CLE, Municipality and selected firm) will discuss the scope of work, schedule and fee proposal format.

Following the assignment meeting, the selected firm shall draft a detailed scope of services and list of line item tasks which may be used as the basis for fee negotiations. The selected firm shall submit these drafted items to the Municipality for review and approval. The Municipality shall submit the proposed final scope of services to the Department for approval. Upon approval, both the Municipality and the selected firm shall then concurrently and independently prepare man-hour/fee proposals and submit them to the Negotiations Committee established by the Municipality in accordance with Section 4, “Negotiations.”

Assignment Meeting Process – Actions and Approvals Summary:

- The Municipality conducts an assignment meeting
- The selected firm drafts a scope of services with a blank man-hour proposal and submits it to the Municipality
- The Municipality reviews the scope of services with a blank man-hour proposal
- The Department approves the scope of services with a blank man-hour proposal
- The Municipality and selected firm prepare man-hour/fee proposals and submit them to the Negotiations Committee

5.3.2.4 – Negotiations

The Municipality shall establish a Negotiations Committee (“Committee”) to perform the fee negotiations phase. The Committee should have three (3) or four (4) members, including at least two (2) individuals from the Consultant Selection Panel. All members of the Committee shall be Municipal officials or employees. At least one (1) member of the Committee shall be the Town/City Engineer, the Director of Public Works, or other Municipal official or employee with considerable engineering, technical or other relevant specialized experience that possesses substantial knowledge about the Project.

3. Once the work scope is agreed to by the municipality, the consultant, and CTDOT, the consultant prepares a fee proposal for submission to the municipality. A certified payroll list is submitted to the municipality and CTDOT for use in calculating the lump sum fee. At the municipality’s request, CTDOT will prepare an independent man-hour counterproposal estimate for use by the municipality as a guide during negotiations. The CLE is not a party to the negotiations.

It is imperative that fee negotiations be a fair and open process. This means that if the Committee is unable to successfully negotiate a contract with the selected firm at a price that the Committee determines to be fair, competitive and reasonable, negotiations with that firm shall, with prior Department approval, be formally terminated. The Municipality shall then select the next highest-ranked firm from the interview process and submit all of that firm’s information to the Department for review and approval.

The Committee shall comply with the requirements of Agreement Bulletin 91-3, Pre-Award Auditing of Consultant (copy attached).

Once the Committee successfully negotiates a fee with the selected firm (“Consultant”), the following must be submitted to the Department for review and approval:

1. Consultant’s fee proposal
2. Municipality’s fee proposal
3. Negotiated fee

Upon receipt of the Department’s written approval of the negotiated fee with the Consultant, the Municipality shall send a written notification to all other interviewed firms that they were not selected.

Negotiations Process – Actions and Approvals Summary:

- The Municipality establishes Negotiations Committee
- The Negotiations Committee negotiates a fee with the selected firm
- The Department reviews and approves (**in writing**) the negotiated fee
- The Municipality notifies all other interviewed firms (**in writing**) of their status

5.3.2.5 – Agreements

Upon agreement of the fee, the Municipality shall enter into an agreement with the Consultant (“Consultant Agreement”). A draft agreement between the municipality and the consultant is prepared by Department and is forwarded to the parties for signature.

All Consultant Agreements are subject to the Department’s contracting requirements, including but not limited to insurance and audit requirements, and, if there is federal participation in funding for the Project, all applicable federal contracting requirements.

The Municipality must receive written approval from the Department for any Consultant Agreement, and any supplemental agreements thereto, prior to signature by the Municipality or the Consultant.

The Consultant Agreement must be fully executed before the commencement of any activities on the Project. A supplemental agreement, and/or supplemental grant authorizing document (GAD), as applicable, between the municipality and the state may be required if the actual negotiated fee exceeds the amount of reimbursement indicated in the original state/municipal agreement and the state approves the increase in fees.

With respect to the agreement between the Municipality and the Department for the Project, a supplemental agreement and/or Project Authorization Letter (“PAL”), as applicable, between the parties may be required if the actual negotiated fee exceeds the amount of reimbursement specified in the original agreement and/or PAL, as applicable, and the Department has approved the increase in fees.

All costs incurred by the Municipality for advertising, consultant selection and fee negotiations are non-reimbursable under the agreement and/or PAL, as applicable, between the Department and the Municipality for the Project.

4. Electronic copy of the fully executed agreement are forwarded to CTDOT for distribution, along with a copy of the Notice to Proceed issued by the municipality to the consultant.

Agreement Process – Actions and Approvals Summary:

- The Department prepares a draft Consultant Agreement
- The Municipality and Consultant reviews draft Consultant Agreement and sign the agreement
- The Department will prepare a PAL and the Municipality will return a signed copy
- The Department will give the Municipality approval to issue a Notice to Proceed

5.3.2.6 – Contract Monitoring

The *Consultant Design Manual* outlines the procedures and contract monitoring provisions that are employed for Department-administered projects and that the Municipality must likewise employ for its Consultant Agreements entered into for Municipally-administered Projects.

Consultant performance evaluations shall be conducted on an annual basis. Both the Municipality, and the CLE will be rating the consultant using the evaluation form provided by the Department. The evaluation form has been divided into two sections, one for the Municipality to fill out and the other for the CLE to fill out.

Each section contains rating criteria relevant to the consultant’s performance that the Municipality and CLE are directly involved in. After both sections have been filled out, the rating shall be signed by the Municipality, the CLE and the FLBP Program Manager (where applicable) and stored in the project file. Rating sheets will be submitted every January, provided that the consultant was actively working on a project during the rating period.

If there are performance issues with the consultant prior to the completion of design activities, the Municipality may submit an interim performance evaluation to the Department.

Upon completion, Consultant performance evaluations for the Preliminary Engineering phase are to be submitted to:

Project Manager
 Division of Bridges – Local Bridge Program
 Connecticut Department of Transportation
 2800 Berlin Turnpike
 P.O. Box 317546
 Newington, Connecticut 06131

Consultant performance evaluations submitted will be kept by the Department and provided to other Municipalities upon their request. A Consultant performance evaluation for the Construction Inspection phase shall be prepared in accordance with the procedure set forth in the Office of Construction’s latest edition of the “Municipality Manual” – Consultant and Contractor Evaluations.

By agreement, the responsibility for settling all contractual and administrative issues with the Consultant rests solely with the Municipality, not the Department.

A template evaluation form is included in [Appendix 5 – Consultant Solicitation, Rating, and Evaluation Template](#)

Contract Monitoring Process – Actions and Approvals Summary:

- The Municipality and the Department’s CLE conducts annual Consultant performance evaluations and provides copies of the ratings to the Department

5.3.2.7 – Confidentiality

The Panel and Committee shall maintain all rating information as confidential until execution of a Consultant Agreement. Any participating consultant firms wishing to discuss, in general terms, their initial submittals or their interview presentation may do so through the Municipality’s Chief Elected Official. Panel or Committee members shall not meet jointly or as a whole to discuss their evaluations with any consultant firm.

5.3.2.8 – Revisions

The procedures and documents referenced in this Consultant Selection, Negotiation And Contract Monitoring Procedures For Municipally-Administered Projects are subject to revision by the Department, and, as may be applicable, the Federal Highway Administration. With respect to a particular Project, the Municipality shall comply with the version in effect at the time the Municipality commences the QBS process for the consultant services required on the Project.

5.

5.3.3 – Design Tasks

Following is a partial list of references, which may be used during the design phase:

- 1) *Consultant Design Manual (CE Manual)*
- 2) Standard Specifications for Roads, Bridges, Facilities and Incidental Construction – Form 818 & Supplemental Specifications
- 3) *Highway Design Manual*
- 4) [Location Survey Manual](#)
- 5) [Specifications for Checking Photogrammetric Mapping](#)
- 6) [Specifications for Aerial Photography & Photogrammetric Mapping](#)
- 7) [Policies and Procedures for Property Maps](#)
- 8) Guide for Preparation for 13a-57 Plans
- 9) *Bridge Design Manual*
- 10) Bridge Design Standard Practices
- 11) *Drainage Manual*
- 12) Bridge Scour Analysis – Technical Approach
- 13) Water Resources Coordination and Permit Processing Manual

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- 14) On-Site Mitigation for Construction Activities
 - 15) *Geotechnical Engineering Manual*
 - 16) Traffic Items
 - (a) [Manual of Traffic Control Signal Design](#)
 - (b) Catalogue of Signs
 - (c) Guide MP&T Special Provision and Traffic Control Plans
 - 17) Utility Mailing List
 - 18) [Policy on the Accommodation of Utilities on Highway Rights of Way](#)
 - 19) Standards
 - (a) Standard Roadway Drawings & List of Road Standards
 - (b) Standard Traffic Drawings
 - 20) Design Aids (Factors for Estimating Quantities)
 - 21) Bid Description Master File
 - 22) Weighted Unit Prices
 - 23) Product Use Status Lists
 - 24) Special Provisions and Guides
 - (a) Index of Recurring Special Provisions and Index of Guide Special Provisions
 - (b) Index of “Non Structural” Design Directives and Recurring Special Provisions
 - 25) CADD Manual
 - 26) MicroStation file package for CTDOT projects
 - 27) Design/Constructability Review Guidelines
 - 28) [2002 Connecticut Guidelines for Soil Erosion and Sediment Control](#)
 - 29) *Bridge Load Rating Manual*
 - 30) *Stormwater Quality Manual*

Following is an outline of design stage activities on a typical Federal Local Bridge Program project:

5.3.3.1 – Survey

- 1) For DMS projects, the Department will perform this task.
- 2) The consultant performs the topographic field survey and delineation of wetland boundaries (state and federal).
- 3) A title plan Mylar is prepared by the consultant from the topographic field survey at the completion of the preliminary design phase. In addition, property lines, street lines, and property owner names and addresses are shown. A survey or construction base line should also be shown for reference.
- 4) A Schedule of Property Owners is prepared by the consultant, at the completion of the preliminary design phase, to indicate the probable properties that are anticipated to be directly impacted by the project.

- 5) The CTDOT Office of Rights-of-Way, if requested by the municipality, undertakes the title search based upon the information contained on the title plan Mylar and the Schedule of Property Owners.
- 6) Following acceptance of the preliminary design, if rights-of-way are required, the consultant prepares individual property taking maps. (See Item #1 under Final Design.) For further information, refer to the manual entitled, "Rights-of-Way Acquisitions, A Procedure Guide for Design/Rights-of-Way Coordination for the Federal Local Bridge Program".

5.3.3.2 – Preliminary Engineering

- 1) For DMS projects, the Department will perform this task.
- 2) Hydrology is developed by the consultant for use in the hydraulics analyses. The calculated flows are compared to previously published data (e.g., FEMA).
- 3) Hydraulics are analyzed for the project by the consultant for the 2 year, 10 year, 50 year, 100 year and 500 year storms. On designs that convey watercourses greater than 1 square mile, the engineer performing the analysis must be approved by CTDOT on a project-by-project basis. The procedure for Department approval is outlined in the CE Manual. Approval requests for previously qualified engineers to work on other state projects will not require the resubmission of a resume. However, an approval request for the current project together with a copy of the Department's prior approval letter and an updated list of hydraulic designs performed by the candidate is required.
- 4) A scour analysis is performed by the consultant to determine the contraction and local scour depths, and to recommend scour countermeasures. Below is the Department's policy concerning the need and nature of bridge scour evaluations for new and rehabilitated bridges. Compliance with this policy is mandatory for projects with federal funding, and is strongly encouraged for projects receiving state funding.

Scour Evaluation Studies

Department of Transportation design practice states that substructures for bridges over waterways shall be designed to safely support the structure subjected to the design scour. ***All bridge scour evaluations shall be conducted in conformance with the procedures contained within the FHWA document entitled "Scour at Bridges" (HEC-18) and the Department's Drainage Manual.***

Bridges over water must be classified into one of three general categories: Low Risk (NBIS Item 113 Rating of 8 or 9), Scour Susceptible (NBIS Item 113 Rating of 4, 5

or 7¹) or Scour Critical (NBIS Item 113 Rating of 3 or below). Following is an explanation of the categories of scour reports:

- *Detailed (Level II) Bridge Scour Evaluations and Re-evaluation Reports* – These are comprehensive studies accomplished in conformance with the requirements of HEC-18 and the *Drainage Manual*.
- *Comparative Scour Evaluations* – These studies are developed using the data obtained from Level II evaluations as a basis for determining the scour vulnerability of bridges having similar characteristics. Comparative evaluations are not as detailed as Level II reports; however, they do provide NBIS ratings and the associated general scour classification.
- *USGS Screening Reports* – These studies, conducted by the United States Geological Survey, were undertaken to identify low risk bridges and to prioritize the remaining structures for further study. They are less detailed than either Level II Reports or Comparative Evaluations.

New Bridges over Waterways

Level II Scour Evaluations shall be performed for all new bridges over waterways unless one or more of the following conditions apply:

- The bridge has been designed to span the entire floodplain for the superflood (500-year recurrence interval) or the critical design event if less than the 500 year flood.
- The structure foundations will be set directly on sound bedrock.
- The abutment footings will be protected with riprap designed in accordance with the methods outlined in the latest version of “Bridge Scour and Stream Instability Countermeasures” (HEC-23) or successor documents. It should be noted that the use of riprap as the sole means of providing scour protection for new bridges is discouraged and should be used only where it has been demonstrated that alternate, preferred means of designing bridges to be safe from scour-related failure are not feasible. (Refer to the *Bridge Design Manual* for preferred foundation types).

Reconstructed or Rehabilitated Bridges

Generally, scour evaluations shall be performed for all bridges, which are to be reconstructed or rehabilitated where significant capital investment is involved and where

¹ The NBIS Item 113 rating of 7 is reserved for bridge locations at which countermeasures have been installed to mitigate a previous scour problem. If the structure is a clear span bridge (no piers) and if the countermeasures have been designed in accordance with the procedures contained within HEC-23, the bridge may be considered "low risk." When countermeasures are placed adjacent to piers to correct a previous scour condition, the bridge is classified as "scour susceptible."

the bridge has been classified as scour susceptible or scour critical. A significant capital investment correlates to the following improvement categories:

- Deck Replacement
- Superstructure Replacement or Widening
- Modification or Major Repairs to Substructure Units

Scour evaluations may be required where structures to be reconstructed or rehabilitated have previously been classified as low risk under the Department's Bridge Scour Evaluation Program or for scour susceptible bridges which are not undergoing substructure modification and have had countermeasures installed following a Level II study.

Bridges that have been classified as scour susceptible or scour critical shall have hydrologic, hydraulic and scour evaluations performed which are sufficiently detailed to satisfy all applicable design and permitting requirements. If a detailed (Level II) scour evaluation has already been performed, the designer shall modify the results of this document as necessary to incorporate the "Modified Abutment Equations" contained within the *Drainage Manual*. All necessary scour countermeasures for scour susceptible or scour critical bridges shall be incorporated into the overall project plans, as appropriate.

Scour Report Format

All bridge scour evaluation reports must be presented using the following format:

A. Table of Contents

B. Executive Summary – The following items must be included:

- (1) A brief description of the report findings as well as the engineer's recommendations regarding scour countermeasures or countermeasure design.
- (2) Executive Summary Table containing the items listed below:
 - (a) Recommend NBIS Item 113 Rating (Scour Critical Bridges)
 - (b) Recommend NBIS Item 71 Rating (Waterway Adequacy)
 - (c) Recommend NBIS Item 61 Rating (Channel and Channel Protection)
 - (d) Scour Risk Designation (Low Risk, Scour Susceptible or Scour Critical)
 - (e) Depth of Potential Scour (Provide the range of values computed for the various flood events analyzed.)
 - (f) Foundation Type (Known/Unknown)
 - (g) Recommendation(s) (Monitor, Install Countermeasures or Design Foundation for Predicted Scour)
- (3) Other Relevant Data – Any additional information, which, in the consultant's judgement, is valuable as a quick reference within this capsule summary, should be included in the narrative.

C. Background/Site Conditions – Provide a narrative description of the existing structure (if applicable), the stream reach adjoining the bridge site and any other relevant information obtained from data gathering efforts.

D. Hydrology and Hydraulics – Provide a description of the watershed properties, hydrologic methods used in the determination of peak flows and a tabulation of the maximum flow rates for the various return frequencies. At a minimum, the 10, 50, 100 and 500-year floods shall be presented for scour evaluations of existing bridges. With respect to new bridges, it is normally acceptable to evaluate only the 100 and 500-year floods unless a flood of lesser magnitude is the maximum scour-producing event.

With respect to the hydraulic analysis, a description of the program employed to develop design water surface profiles, flow depths and velocities should be provided. Further, methodologies used in the determination of the starting water surface elevations or boundary conditions must be described.

E. Scour Results – Describe the findings of the scour evaluation in narrative and tabular formats.

F. Structural Review/Foundation Stability Analysis – Provide a narrative description, as appropriate.

G. Conclusions and Recommendations – Summarize the findings of the Bridge Scour Evaluation and provide recommendations with respect to countermeasure or foundation design.

H. Report Graphics

- (1) Location Plan
- (2) Site Plan
- (3) Scour Depth Cross Sections – For each flood event analyzed, provide a cross section (Elevation View) at the upstream face of the bridge on which the various components of total scour have been depicted for all substructure units. Where foundation information is available, the depth and configuration shall also be depicted. This section must be drawn to scale and must indicate the design flood elevation, the low chord elevation and the overtopping elevation.

I. Technical Appendices

- (1) Field Evaluation Notes or Sketches (as appropriate)
- (2) Photographs
- (3) Hydrologic Computations
- (4) Water Surface Profile Computations
- (5) Scour Calculations
- (6) Geotechnical Data – Riverbed and soil sample characteristics and/or subsurface investigation findings
- (7) Countermeasure Design Computations and Sketches (as appropriate)
- (8) Pile Stability Computations (as appropriate)

- 5) A geotechnical evaluation, including soil borings, is conducted by the consultant to determine the requirements for the bridge foundation design, and to determine the location and depths of existing footings for abutments to be left in place.
- 6) A preliminary engineering report is prepared by the consultant to summarize the results of the above preliminary engineering studies, and in certain instances, to recommend a scope of work for either replacing or rehabilitating the structure. Included in the report should be a summary of the appropriate Connecticut Geometric Highway Design guideline parameters (Design Standard, existing and proposed) and justification for any items that require a design exception.
- 7) A structure type study is prepared by the consultant, subsequent to the determination and approval of the scope of work, to evaluate a minimum of three alternate designs for replacing or rehabilitating the bridge structure and provide a recommended alternate.
- 8) For DMS projects, a meeting is held where the CLE recommends an alternative. The various Department units provide feedback on the proposed alternative.
- 9) The Town will select which alternative proceeds to Preliminary Design. For non-DMS projects, the Department will need to approve the PE Report along with the recommended alternative prior to moving to Preliminary Design.

5.3.3.3 – Preliminary Design

- 1) For DMS projects, the Department will perform this task.
- 2) The consultant submits a 30% complete design plan package to CTDOT for review.
- 3) A design/rights-of-way meeting is conducted between the municipality, the consultant and CTDOT to discuss the probable rights-of-way requirements for the project.
- 4) CTDOT prepares a rights-of-way agreement between CTDOT and the municipality if the municipality requests that CTDOT acquire any necessary rights-of-way for the project. The municipality may acquire rights-of-way on their own provided the acquisitions are made in accordance with the federal “Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970”. For those municipalities that choose to handle rights-of-way work themselves, a manual is available entitled “Rights-of-Way Acquisitions Manual, An Information Guide to CTDOT Procedures”.
- 5) Section 106 historic documentation, if required by the ERR or site disturbance based on the selected alternate, is prepared by the consultant and sent to obtain approval by CTDOT, the State Historic Preservation Office, FHWA and the Advisory Council on Historic Preservation.
- 6) Archaeological resources investigations are conducted by a specialist contracted by CTDOT.
- 7) A programmatic Section 4(f) evaluation (if required) is prepared by the consultant and forwarded to CTDOT for further processing.

- 8) A Section 6(f) evaluation (if required) is coordinated by CTDOT.
- 9) Upon approval by CTDOT of the 30% design plans, the municipality schedules a public information meeting to be conducted by the consultant and the municipality.
- 10) Following the public information meeting, the CTDOT prepares the necessary request for a waiver of the design public hearing requirement.
- 11) A categorical exclusion request memorandum is prepared by CTDOT and forwarded to FHWA for approval.
- 12) If any of the appropriate Connecticut Geometric Highway Design and/or AASHTO design guidelines (as applicable) cannot be achieved with the proposed design, a request for a design exception is prepared by the consultant with assistance provided by CTDOT. The design exception request must be signed by the appropriate municipal official.
- 13) A request for design approval is prepared by the CTDOT using information supplied by the consultant, and the municipality requests permission from CTDOT to proceed to final design.
- 14) CTDOT issues authorization to proceed to final design. **The municipality must not proceed with final design activities until receiving this authorization**, which signals that Federal funds have been authorized.

5.3.3.4 – Regulatory Approvals

For DMS projects, the CLE will perform this task.

At approximately 60% design, the following documents, as appropriate, are prepared by the consultant to obtain the required regulatory approvals for the project:

- 1) CTDOT FM-MOU or DEEP [Flood Management Certification](#).
- 2) Municipal Inland Wetlands and Watercourses Agency Permit Application.
- 3) DEEP Tidal Wetlands and/or Structures Dredge and Fill Permit Application.
- 4) DEEP Certificate of Permission Application.
- 5) Army Corps of Engineers Permit Application (typically a General Permit concurrence).
- 6) U.S. Coast Guard Bridge Permit Application and/or navigation lighting approval or waiver.
- 7) Department of Public Health Change in Land Use Permit Application.
- 8) DEEP Section 401 Water Quality Certificate Application (if required).

5.3.3.5 – Final Design

- 1) As soon as possible after design approval has been received (see Item #13 under Preliminary Design), property-taking maps (if required) are prepared by the consultant and reviewed by CTDOT. When approved, an unsigned vellum of each map is sent to the CTDOT Office of Rights-of-Way to continue with the rights-of-way acquisition process.

- 2) Rights-of-Entry, if required, are obtained by the consultant or the municipality.
- 3) Utility coordination is handled by the CLE. A field utility meeting is required and the Utilities will prepare FIO plans.
- 4) If an MMA for construction is not executed, the agreement between CTDOT and the municipality for construction, inspection and maintenance is prepared by CTDOT and forwarded to the municipality for signature. Processing of the agreement is handled in the same fashion as for the design agreement.
- 5) The consultant submits four electronic copies each of the contract plans, specifications and cost estimates (PS&E) at the 60% and 90% complete stages of final design, and two (2) copies of the PS&E package at the 100% complete stage, for review by CTDOT. The cost estimates must separate federal and state participating contract pay items from the non-participating contract pay items.
- 6) The CLE compiles the final contract document package and prepares schedule of prices.
- 7) CTDOT reviews the above submittals, and if acceptable, authorizes the construction phase based on availability of funds. The following prerequisites must be completed before construction funds are committed:
 - (a) CTDOT Office of Rights-of-Way issues a Rights-of-Way Certificate when required. A Rights-of-Way certificate is issued by the CTDOT Office of Rights-of-Way when all of the required acquisitions are completed (maps filed and instruments recorded in the municipality's land records).
 - (b) CTDOT certifies that all federal, state, and local permits have been acquired.
 - (c) CTDOT prepares PS&E Approval memorandum, which initiates the requests for FHWA authorization to advertise.
 - (d) CTDOT requests FHWA authorization to advertise.
 - (e) FHWA authorizes advertising of project.
- 8) At this stage, the design and rights-of-way phases of the project are complete and the municipality prepares to advertise the project for construction bids. (See manual entitled, "Guidelines for Municipalities, Advertising, Bidding and Award of Contracts for the Federal Local Bridge Program").
- 9) CTDOT issues the authorization to advertise letter to the municipality. **The municipality must not advertise the project until this authorization is issued**, which signals that Federal funds have been authorized.

5.3.3.6 – Construction Advertising

- 1) Final Preparation for Advertising:
 - (a) CTDOT meets with the municipality and/or its consultant engineer to forward the following documents and to discuss the requirements for advertising, bidding and award of the project:

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- (1) Complete contract special provisions.
 - (2) construction plans.
 - (3) standard drawings referenced on the plans.
 - (4) Complete schedule of prices for inclusion with Bid Proposal documents and reduced versions for inclusions with Notice to Contractors.
 - (5) Design Report
 - (6) Engineer's Final Estimate (CONFIDENTIAL)
 - (7) Calendar Days Chart
- (b) Municipality (or its consultant engineer) requests State Wage Schedules from Connecticut Labor department. Request must be made no sooner than 20 days or later than 10 days prior to the advertising date. State Wage Schedules are included at the back of the contract special provisions. Note: Federal Wage Schedules are amended frequently and federal regulations require that the latest version be used.
- (c) Municipality (or its consultant engineer) prepares the following:
- (1) Legal Notice.
 - (2) Notice to Contractors.
 - (3) Bid Proposal Documents.
- 2) Municipality forwards to the CTDOT copies of the resumes of (a) the municipal personnel administrating the construction contracts, and (b) the consultant inspection personnel for approval by the CTDOT Office of Construction.
 - 3) Municipality publishes legal notices advertising the project in at least two newspapers having a substantial circulation in the project area, and notifies CTDOT of scheduled bid opening (date, time and place). A 28-day advertising period is recommended (a minimum of at least 21 days is required). The Disadvantaged Business Enterprises (DBE) set-aside percentage shall be included in the legal notices.
 - 4) Municipality issues Bid Proposal documents to any prospective bidder who submits a written request. Municipality maintains a log of all contractors who have been issued Bid Proposal documents and/or plans and specifications.
 - 5) Any addenda to the project must be submitted to CTDOT for approval prior to being issued. Municipality issues any addenda to the project no later than ten (10) calendar days preceding the scheduled bid opening date to all prospective bidders who have Bid Proposal documents. Addenda must be submitted electronically to the Department.
 - 6) Municipality publicly opens and announces bids.
 - 7) Municipality forwards pre-Award documents to the apparent low bidder. The municipality shall send copies of the completed pre-Award documents to CTDOT.
 - 8) Municipality audits all bids computations and forwards the following to CTDOT:
 - (a) electronic copies of all bids received and a statement of correctness of bids.
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- (b) Detailed bid breakdown by items of the lowest three bids with the names of the bidders.
 - (c) List of all bidders with the names of bidders and total bid amounts.
 - (d) A bid analysis and a justification for accepting (or rejecting) the low bid if the lowest responsible bid is less than 20 percent under or more than 10 percent over the Engineer's Construction Estimate.
 - (e) Statement of low bidder's qualifications.
 - (f) Statement that the affirmative action and disadvantaged business enterprise aspects of the contract have been complied with.
 - (g) Statement that the low bidder is a firm registered with the Secretary of State.
 - (h) Statement on First Injury Fund
 - (i) Recommendation to accept (or reject) the low bid.
 - (j) Copies of the transmittal letters for all of the above documents shall be sent to CTDOT.
- 9) CTDOT reviews documents submitted per above items. CTDOT also obtains final funding approval and executes CN PAL.
- 10) Municipality authorized to award contract per letter from CTDOT.
- 11) Municipality prepares contract documents, awards and executes contract, and arranges with CTDOT for the time, place, and date of the pre-construction meeting. Municipality notifies contractor to provide copy of Builder's Risk Insurance certificate at the pre-construction meeting.

Representatives of the following parties are notified to attend the pre-construction meeting:

- The municipality (including a traffic official);
- Consultant designer;
- Consultant inspector;
- Local Bridge Program;
- CTDOT District Construction office;
- All affected utility companies;
- Any affected railroads;
- CTDOT Laboratory (Tel. 860-258-0321);
- State Labor Department (Tel. 860-240-4288).

12) Municipality submits to CTDOT:

- electronic copies of the letter awarding the contract.
- electronic copies of contract.
- Notice of pre-constructing meeting.

13) Pre-Construction meeting is held, and contractor is ordered to proceed by the municipality.

14) Construction begins. Municipality pays contractor's invoices and requests reimbursement from CTDOT's Office of Construction District office.

Note: Field changes, contract time extensions, change in liquidated damages or other actions that will change the project cost or duration must receive advance approval in writing from the CTDOT District Construction Office. Significant changes in the project will require a supplemental agreement.

15) Periodically throughout the project, CTDOT personnel will visit the project to review the project's progress, and monitor compliance with record-keeping procedures.

16) When it appears that the construction work is substantially complete, the municipality or its consultant must arrange a semi-final inspection to determine if any additional work is needed to complete the project satisfactorily. CTDOT representatives *must* be invited to participate in the semi-final inspection.

17) Upon completion of the work identified in the semi-final inspection, the municipality schedules a final inspection. CTDOT representatives must be invited to participate in the final inspection. As-built drawings should be completed, or nearly so, by the time of the final inspection.

CTDOT audits the project, adjusts accounts, and notifies the municipality of the findings. The Federal CFDA number is 20.205 (see

<https://www.cfda.gov/?s=program&mode=form&tab=step1&id=9841e66c08cd4fe9ed2a013c188f223a>).

APPENDIX 1 – LOCAL BRIDGE LEGISLATION

Following is the current State Local Bridge Program legislation, which includes all the amendments contained in P.A. 13-239 and P.A. 16-151. For an extensive list of historical excerpts from the Connecticut General Statutes and Public Acts which relate to Local Bridges, please visit the Local Bridge Program’s website at <https://portal.ct.gov/DOT/Local-Bridge-Program/Local-Bridge-Program>. This information is included as a convenience to the reader of this manual, and is not intended to be a complete list of all relevant Statutes. The reader is cautioned that these excerpts are not certified copies, and to check that there have been no revisions to a statute before relying upon it.

APPENDIX 1 - LEGISLATION

CGS SECTIONS 13A-175P - 13A-175W: LOCAL BRIDGE PROGRAM

Sec. 13a-175p. Definitions. The following terms, as used in sections 13a-175p to 13a-175u, inclusive, shall have the following meanings unless the context clearly indicates a different meaning or intent:

- (1) “Commissioner” means the Commissioner of Transportation.
- (2) “Eligible bridge” means a bridge located within one or more municipalities in the state, the physical condition of which requires it be removed, replaced, reconstructed, rehabilitated or improved as determined by the commissioner.
- (3) “Eligible bridge project” means the removal, replacement, reconstruction, rehabilitation or improvement of an eligible bridge by one or more municipalities.
- (4) “Grant” means any grant made to a municipality pursuant to section 13a-175s.
- (5) “Grant percentage” means fifty per cent.
- (6) “Local bridge program” means the local bridge program established pursuant to sections 13a-175p to 13a-175u, inclusive.
- (7) “Local Bridge Revolving Fund” means the Local Bridge Revolving Fund created under section 13a-175r.
- (8) “Municipality” means any town, city, borough, consolidated town and city, consolidated town and borough, district or other political subdivision of the state, owning or having responsibility for the maintenance of all or a portion of an eligible bridge.
- (9) “Physical condition” means the physical condition of a bridge based on the condition of its components and elements, functional adequacy, scour susceptibility and load capacity all as determined by the commissioner.
- (10) “Priority list of eligible bridge projects” means the priority list of eligible bridge projects established by the commissioner in accordance with the provisions of section 13a-175s.
- (11) “Project costs” means the total costs of a project determined by the commissioner to be necessary and reasonable.
- (12) “Supplemental project obligation” means bonds or serial notes issued by a municipality for the purpose of financing the portion of the costs of an eligible bridge project not met from the proceeds of a grant.

(P.A. 84-254, S. 8, 62; P.A. 13-239, S. 76; P.A. 16-151, S. 1.)

History: P.A. 13-239 added new Subdiv. (4) defining “grant”, redesignated existing Subdivs. (4) to (10) as Subdivs. (5) to (11), amended redesignated Subdiv. (5) to increase range of grants from between 10% and 33% to between 15% and 50%, deleted former Subdivs. (11) to (14) re

APPENDIX 1 - LEGISLATION

project loan and project grant definitions, and redesignated existing Subdiv. (15) as Subdiv. (12) and amended same to replace “project grant or project loan” with “grant”, effective July 1, 2013; P.A. 16-151 amended Subdiv. (5) to redefine “grant percentage”, amended Subdiv. (9) to redefine “physical condition” and made technical changes, effective July 1, 2016.

Cited. 220 C. 556.

Sec. 13a-175q. Local bridge program. The establishment of a program for the removal, replacement, reconstruction, rehabilitation or improvement of local bridges is a matter of state-wide concern affecting the health, safety and welfare of the inhabitants of the state and of persons traveling within the state. It is the policy of the state to establish a timely and efficient method for municipalities to participate in this program and in furtherance thereof, sections 13a-175p to 13a-175u, inclusive, are intended to provide authority for municipalities to approve local bridge projects, and, in connection therewith, to authorize project agreements, and the issuance of supplemental project obligations. For the purpose of ensuring and encouraging participation by municipalities in the benefits of the local bridge program, the powers of municipalities are expressly enlarged and expanded to include the power to do all things necessary and incident to their participation in the local bridge program under sections 13a-175p to 13a-175u, inclusive.

(P.A. 84-254, S. 9, 62; P.A. 13-239, S. 77.)

History: P.A. 13-239 deleted “loan” and “project loan obligations”, effective July 1, 2013.

Sec. 13a-175r. Local Bridge Revolving Fund. There is established and created a fund to be known as the “Local Bridge Revolving Fund”. The state shall deposit in said fund (1) all proceeds of bonds issued by the state for the purpose of making grants to municipalities, including proceeds of any special tax obligation bonds which are issued for the purpose of funding the local bridge program, (2) any and all repayments of grants or loans made by municipalities, (3) all appropriations for the purpose of making grants, and (4) any additional moneys from any other source available for deposit into said fund. Moneys deposited in said fund shall be held by the Treasurer separate and apart from all other moneys, funds and accounts. Investment earnings credited to the assets of said fund shall become part of the assets of said fund. Any balance remaining in said fund at the end of any fiscal year shall be carried forward in said fund for the fiscal year next succeeding. Amounts in the Local Bridge Revolving Fund shall be expended only for the purpose of funding grants or for the purchase or redemption of special tax obligation bonds issued pursuant to sections 13b-74 to 13b-77, inclusive.

(P.A. 84-254, S. 10, 62; P.A. 89-240, S. 1, 3; P.A. 13-239, S. 78.)

History: P.A. 89-240 added provision re proceeds of grants to be deposited in fund, added new Subdiv. (3) re appropriations deposited in fund and relettered Subdiv. (3) as Subdiv. (4); P.A. 13-239 deleted references to project loans, replaced references to project grants with references to grants and added provision re repayment of grants or loans, effective July 1, 2013.

APPENDIX 1 - LEGISLATION

Sec. 13a-175s. Procedure for grants under local bridge program. (a) The commissioner shall maintain a list of eligible bridges and shall establish a priority list of eligible bridge projects for each fiscal year. In establishing such priority list, the commissioner shall consider the physical condition of each eligible bridge.

(b) In each fiscal year the commissioner may make grants to municipalities in the order of the priority list of eligible bridge projects to the extent moneys are available therefor. Each municipality undertaking an eligible bridge project may apply for and receive a grant equal to its grant percentage multiplied by the project costs allocable to such municipality. Notwithstanding the provisions of this section, in order to protect the public health and safety, the commissioner may make any grant to a municipality for an eligible bridge project without regard to the priority list if, in the opinion of the commissioner, an emergency exists making the removal, replacement, reconstruction, rehabilitation or improvement of an eligible bridge more urgent than any other eligible bridge project with a higher priority on such list.

(c) All applications for grants for the fiscal year ending June 30, 1985, shall be filed with the commissioner no later than October 1, 1984, and for each succeeding fiscal year all such applications shall be filed with the commissioner no later than May first of the preceding fiscal year. The commissioner may for good cause extend the period of time in which any such application may be filed.

(d) The terms and conditions of each such grant made by the state, acting by and through the commissioner, may be prescribed by the commissioner. Any such grant made by the commissioner shall not be deemed to be a public works contract, as defined in section 46a-68b, and the requirements for public works contracts provided in chapters 58 and 814c shall not apply to such grant.

(e) A grant shall not be made to a municipality with respect to an eligible bridge project unless: (1) Each municipality undertaking such project has available to it, or has made arrangements satisfactory to the commissioner to obtain, funds to pay that portion of the project costs for which it is legally obligated and which are not met by grants; (2) each municipality undertaking such project provides assurances satisfactory to the commissioner that it will undertake and complete such project with due diligence and that it will operate and maintain the eligible bridge properly after completion of such project; (3) each municipality undertaking such project and seeking a grant has filed with the commissioner all applications and other documents prescribed by the commissioner; (4) each municipality undertaking such project and seeking a grant has established separate accounts for the receipt and disbursement of the grants; and (5) in any case in which an eligible bridge is owned or maintained by more than one municipality, evidence satisfactory to the commissioner that all such municipalities are legally bound to complete their respective portions of such project. Notwithstanding any provisions of this subsection, the commissioner may make an advance grant to a municipality for the purpose of funding the engineering cost of an eligible bridge project. Such grant shall equal the municipality's grant percentage multiplied by the engineering cost, provided the amount of such advance shall be deducted from the total grant for the project.

APPENDIX 1 - LEGISLATION

(f) No grant for an eligible bridge project made pursuant to this section shall be deemed to be a proposed state action, activity or critical activity, as such terms are defined in section 25-68b, for the purposes of sections 25-68b to 25-68h, inclusive.

(P.A. 84-254, S. 11, 62; P.A. 88-60, S. 2; P.A. 89-240, S. 2, 3; P.A. 13-239, S. 79.)

History: P.A. 88-60 amended Subsec. (g) to allow the commissioner to make an advance grant to a municipality to fund engineering costs of an eligible bridge project; P.A. 89-240 deleted Subsec. (b) re allocation of funds between projects and fund, deleted Subsec. (f)(1) re approval by commissioner of preliminary plans and specifications and relettered Subsecs. (c), (d), (e), (f), (g) and (h) as Subsecs. (b), (c), (d), (e), (f) and (g); P.A. 13-239 deleted references to project loans and replaced references to project grants with references to grants, deleted former Subsecs. (b) and (c) re project loans, redesignated existing Subsecs. (d) and (e) as Subsecs. (b) and (c), amended redesignated Subsec. (b) to provide for emergency grants, amended redesignated Subsec. (c) to change application deadline from March to May, added new Subsec. (d) re exemption from requirements for public works contracts, redesignated existing Subsec. (f) as Subsec. (e) and amended same to delete provision re engineering cost not to exceed 15 per cent of construction cost, deleted former Subsec. (g) re emergency grants and loans, added new Subsec. (f) re grants not proposed state action, and made a technical change, effective July 1, 2013.

Sec. 13a-175t. Issuance of supplemental project obligations by municipality. (a) A municipality may authorize the issuance and sale of its supplemental project obligations, in accordance with such statutory and other legal requirements as govern the issuance of obligations and the making of contracts by the municipality. Supplemental project obligations shall be general obligations of the issuing municipality and each such obligation shall recite that the full faith and credit of the issuing municipality are pledged for the payment of the principal thereof and interest thereon. Obligations authorized under this section shall be subject to the debt limitation provisions of section 7-374.

(b) Whenever a municipality has authorized the issuance of supplemental project obligations, it may authorize the issuance of temporary notes in anticipation of the receipt of the proceeds from the issuance of its supplemental project obligations. Such temporary notes may be renewed from time to time by the issuance of other notes, provided that any such renewals shall conform to all legal requirements and limitations applicable thereto, including the requirements and limitations set forth in sections 7-378 and 7-378a.

(c) Except as otherwise provided in this section, supplemental project obligations and temporary notes issued in anticipation of the receipt of the proceeds thereof shall be issued by a municipality in accordance with such statutory and other legal requirements as govern the issuance of such obligations generally by such municipality, including, where applicable, the provisions of chapter 109.

(P.A. 84-254, S. 12, 62; P.A. 87-224, S. 1, 4; P.A. 13-239, S. 80.)

History: P.A. 87-224 amended Subsec. (b) by changing the time notice of a hearing is published from at least ten days to not less than five days prior to the day on which the hearing is held, and by defining the five-day period; P.A. 13-239 amended Subsec. (a) to delete provisions re project

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loans and add provision re supplemental project obligations are general obligations of the municipality, deleted former Subsecs. (b) to (d) re project loan obligations, and redesignated existing Subsecs. (e) and (f) as Subsecs. (b) and (c) and deleted references to project loan obligations therein, effective July 1, 2013.

Sec. 13a-175u. Regulations. The commissioner shall adopt such regulations in accordance with the provisions of chapter 54 as may be necessary to give effect to and carry out the purposes of sections 13a-175p to 13a-175t, inclusive.

(P.A. 84-254, S. 13, 62.)

Sec. 13a-175v. Interlocal agreements. If an eligible bridge is owned or maintained by more than one municipality, the municipalities owning or maintaining such eligible bridge may enter into an interlocal agreement concerning such eligible bridge. Such interlocal agreement may provide, among other things, that one municipality shall be responsible for undertaking and completing an eligible bridge project, maintaining such eligible bridge project, applying for a grant for such eligible bridge project and the apportionment of costs for such eligible bridge project. A municipality is authorized to enter into such an interlocal agreement by vote of its legislative body and the provisions of sections 7-339a to 7-339l, inclusive, shall not be applicable to such interlocal agreement. Any such interlocal agreement entered into prior to May 27, 1987, is validated.

(P.A. 87-224, S. 2, 4; P.A. 13-239, S. 81.)

History: P.A. 13-239 deleted provisions re project loans, replaced reference to project grant with reference to grant and added “the apportionment of costs”, effective July 1, 2013.

Sec. 13a-175w. Grant to municipality which enters into interlocal agreement. In any case in which an eligible bridge is owned or maintained by more than one municipality and such municipalities enter into or have entered into an interlocal agreement authorized by section 13a-175v, the commissioner may deem the municipality which has agreed pursuant to such interlocal agreement to undertake, complete and maintain an eligible bridge project to be the only municipality eligible for a grant concerning such eligible bridge project and the commissioner may make a grant to such municipality without regard to the ownership or other interests of any other municipality in such eligible bridge.

(P.A. 87-224, S. 3, 4; P.A. 13-239, S. 82.)

History: P.A. 13-239 deleted references to project loan and replaced references to project grant with references to grant, effective July 1, 2013.

APPENDIX 2 - REGULATIONS

APPENDIX 2 – REGULATIONS

Note: The Regulations governing the Local Bridge Program are currently in the process of being revised to conform with P.A. 13-239 and P.A. 16-151 and to allow for preservation projects. The proposed Regulations are posted on the Local Bridge Program Website. The former regulations, have been superseded in part by P.A. 13-239 and P.A. 16-151.

APPENDIX 3 – HYDRAULIC ANALYSIS GUIDANCE DOCUMENT

Supplemental Guidelines for Preparing Riverine Hydraulic Analyses in Permit Applications Submitted to the Inland Water Resources Division Including:

- **Inland Wetlands and Watercourses Permits**
- **Stream Channel Encroachment Line Permits**
- **401 Water Quality Certifications**
- **Water Diversion Permits**
- **Dam Construction Permits**
- **Flood Management Certification Approvals**

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SECTION 1. INTRODUCTION**Purpose of Guidelines**

These guidelines have been prepared by the Inland Water Resources Division (IWRD) to assist engineers in the preparation of engineering reports where hydraulic modeling is required. Such engineering reports are required to be submitted with IWRD permit applications for projects that fall within the IWRD's jurisdiction. Specifically, these guidelines detail the documentation necessary to demonstrate that a project is in compliance with the requirements of the State of Connecticut Flood Management Statutes and Regulations (Sections 25-68b through 25-68h of the Connecticut General Statutes [CGS] and Sections 25-68h-1 through 25-68h-3 of the Regulations of Connecticut State Agencies [RCSA]) applicable statutes and regulations. It also details the preferred format in which the documentation should be submitted to the Department of Environmental Protection (DEEP). It does not include the modeling requirements for open channel modifications, storm drainage systems, or stormwater detention facilities. Further information on these specific types of projects may be found in RCSA Section 25-68h-3.

Note to Users

These guidelines are intended for persons with a background in hydraulic modeling, therefore it is assumed that technical terms are generally understood and do not need to be explained. Applicants should remember that these guidelines have been prepared to outline a suggested format for documenting and presenting your modeling work and are not intended to provide training in the design of bridges, roadways, commercial site development, or wetlands mitigation. Compliance with these guidelines does not create a presumption that your project will be approved. Applicants should review all applicable statutes and regulations prior to preparing an application, including, where applicable, the provisions of the coastal management statutes, Chapter 444 of the general statutes.

When is a Hydraulic Analysis Required?

In any case where changes are proposed in a floodplain or in a watercourse that may affect the conveyance of flood flows, hydraulic information as outlined in this report is required. This includes but is not limited to; bridge/culvert replacements or relocations of any kind, bridge superstructure replacement if the hydraulic opening of the bridge is changed in any way, channel modifications including the placement of bank stabilization material, fill placed in a floodplain, excavation in a floodplain, or any combination of fill and excavation. The complexity of the analysis depends on whether special circumstances exist, such as the presence of a Federal Emergency Management Agency (FEMA) floodway or stream channel encroachment lines (SCEL) at the site.

SECTION 2. GOVERNING POLICIES

The following statutes and regulations establish the Flood Management policies and practices of the DEEP:

- State of Connecticut Flood Management Statutes and Regulations (CGS Sections 25-68b through 25-68h and RCSA Sections 25-68h-1 through 25-68h-3). All

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applications for permits in the programs administered by the IWRD are reviewed to insure that the proposed activities are in conformance with applicable flood management standards and criteria.

- National Flood Insurance Program (NFIP) (44 CFR, Chapter 1, Subchapter B, Part 60.3). The NFIP standards and criteria are the basis for the minimum requirements of the State's Flood Management Program.
- Inland Wetlands and Watercourses (CGS Section 22a-39 through 22a-45a), Dam Construction (CGS Section 22a-401 through 22a-411), Water Diversion (CGS Section 22a-365 through 22a-379a), Water Quality Certifications under Section 401 of the Federal Clean Water Act (33 USC 1341), and Stream Channel Encroachment (CGS Sections 22a-342 through 22a-349). These programs regulate Connecticut's inland water resources. Applications for permits in these programs are evaluated for environmental and flooding impacts.
- CGS Section 13a-94 requires that all structures built over or adjacent to streams in connection with state highway projects conform to the Stream Channel Encroachment Program requirements.

Most communities in Connecticut have adopted Flood Insurance Rate Maps and Floodway maps in conjunction with the NFIP administered by the FEMA for use in regulating development within floodplains. Many streams and rivers in these communities have been studied for the purpose of defining a flood plain area and a floodway area. The floodway is the central part of the floodplain that is reserved to ensure that a sufficient part of the flood plain will remain open to carry floodwaters efficiently.

The following are some of the standards and criteria that must be met in order for a project to be consistent with the State's Flood Management Policies:

- **Floodplains.** RCSA Section 25-68h-2(c)(1) prohibits any activity in a floodplain that would adversely affect the hydraulic characteristics of the floodplain. This includes floodplains in both inland areas and coastal areas. All permit applications for projects proposed within a floodplain must demonstrate that the project will not cause adverse impacts to upstream, downstream, or adjacent properties.
- **Floodways.** RCSA Section 25-68h-2(c)(5) and Section 60.3(d)(3) of NFIP regulations prohibit any activity within a regulatory floodway that would result in any increase in the base flood water surface elevation. In order for any proposed project that does not meet these standards to be approved, a map revision is required from FEMA.

10-Year Profiles. RCSA Section 25-68h-2(c)(5) prohibits any activity within a regulatory floodway that would result in an increase in the elevation of the 10-year water surface profile.

- **Natural Profile.** Bridges and culverts should be designed so that the proposed water surface profile does not exceed the natural profile by more than one foot for the 100-year or SCEL floodplain analysis. This applies to the replacement of existing bridges

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and culverts as well as the construction of new structures. If the proposed profile does not meet this standard, documentation must be submitted justifying the basis for the design. This standard does not apply to DOT Flood Management Certifications for projects that have a drainage area of less than one square mile. These projects have been exempted by regulation from Flood Management standards.

Notwithstanding the above, any increase over the existing water surface elevations will only be permitted provided no adverse impacts are created.

- **Water Resources.** The project should not adversely affect the environment or long range water resource planning or impair proper management and use of the water resources of the state.
- **Fish Habitat.** The project must provide for adequate fish passage and maintenance of fish habitat in watercourses that may support fish. DEEP Fisheries should be contacted in advance for technical advice for any project which may impact fisheries

SECTION 3. FUNDAMENTALS IN MODELING RIVER HYDRAULICS

Selection of Computer Modeling Programs. Most hydraulic models used in support of permit applications are one-dimensional models for calculating water surface profiles that assume steady gradually varied flow. Programs such as HEC-2, HEC-RAS, WSP2 and WSPRO are all acceptable models, since these are models that are in the public domain and can be recreated for review. In general, no other models should be submitted to the IWRD.

Other models *may* be acceptable, with prior approval from DEEP, provided they use the standard step method of solving the Energy Equation:

$$\boxed{WS_2 + a_2V_2^2/2g = WS_1 + a_1V_1^2/2g + h_e}$$

Unique situations may require specialized modeling, such as two- or three- dimensional models. If you are not using one of the above listed models, you must consult with the IWRD before submitting your application. The models used by FEMA to map floodplains assume subcritical flow and applicants recreating a FEMA study should apply the same assumption. In almost all cases, the FEMA analysis is available only on hard copy, which necessitates recreating the files for use on the computer. This should not be a problem unless the FIS utilized the U.S. Geological Survey's E431 or J635 computer programs. Neither of these programs can be run on a personal computer so it is necessary to convert the input data to another hydraulic model. In all other situations, the applicant should utilize the latest version of the same computer model as was used by FEMA, except that HEC-2 data may be run in the program HEC-RAS.

Design Discharge. If the subject site is located in a FEMA floodway or a *numbered* "A" zone, the discharge for analyzing the acceptability of a project at that site must be the same discharge used by FEMA in establishing the floodway or *numbered* "A" zone designation for the site. If the subject site is located in an *unnumbered* "A" zone or is not located in a FEMA flood zone, such that no detailed study is available), the applicant must establish an appropriate design discharge for evaluating the acceptability of the project at that site. If an applicant uses a design discharge other than the discharge used by FEMA, the applicant must still evaluate the project

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using the FEMA design discharge and provide a detailed justification as to why another discharge was selected. Both the applicant's selected design discharge and the FEMA discharge analyses must be submitted in the application package. If the subject site is riverward of SCEL, an analysis using the SCEL discharge must also be submitted. If the site is located in a floodway, the 10-year discharge must also be evaluated.

Existing Conditions Model

FEMA Cross-Section Data. As a starting point for any hydraulic modeling of a river mapped by FEMA, the most recent cross sections published in the specific community's Flood Insurance Study should be used. Applicants should contact FEMA Region I – Mitigation Division at 617-223-9561 for information on how to obtain a copy of the FIS back-up data. Applicants should note that the average request takes approximately 2 to 4 weeks to fill and costs between \$300 and \$400.

FEMA Calibration Run. The back-up data obtained from FEMA must be run “as-is” to check for any differences which may appear simply because a different version of the same model is used, or in cases where a different model is used (as when the original is unavailable to the public). This run must be included in the application package along with a summary of any differences from the published information that may occur.

Use of Cross Sections to Define a Site. An *existing conditions model* and an *existing conditions encroached model* (if a floodway is present) should be developed by utilizing the FIS data and inserting additional cross sections where appropriate to define the project site.

This is often necessary because the FIS section locations are frequently far apart and may not be located within the project limits. In the case where FEMA has accurately modeled an existing condition, the FEMA calibration run may be used for the existing conditions run unless additional cross sections are needed to define a proposed condition. For example, additional cross sections may be needed to define the site of a bridge relocation or widening. (Note: Each cross section from the *proposed conditions model* must have a matching section in the *existing conditions model*.) Existing cross sections should be taken at the locations of the downstream and upstream right-of-way limits in order to define water surface elevations in the areas beyond the roadway right-of-way. Cross section locations should be consistent with the recommendations of the manual for the model utilized.

As a starting point, the inserted cross sections should utilize roughness, contraction and expansion coefficients identical to those used by FEMA. Subsequently, based on the professional judgement of the engineer, these coefficients may need to be adjusted to reflect actual field conditions or if there are difficulties in matching the FEMA model. Such adjustments should be noted and summarized. Cross sections must span the entire floodplain. These cross sections may be a combination of survey data and existing available topographic information where appropriate. If sources other than survey data are used, an explanation should be provided. The floodway limits at the inserted sections should be scaled from the FEMA floodway maps. Floodway limits may not be modified unless a map revision has been issued from FEMA.

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Accuracy of Available FEMA Cross Sections. The FEMA cross sections within the study reach of the proposal should be compared to current survey information at the location of the FEMA cross sections in order to determine their accuracy. In situations where any discrepancies found between the FEMA data and the current survey information are relatively minor (generally matching to within 0.5' is acceptable), the FEMA data should be used to create the *existing conditions model*. The *existing conditions model* will be used for a comparison to the *proposed conditions model*. In cases where the discrepancies between the FEMA cross sections and the current survey information are unacceptable, or obvious input errors are noted, data from the actual site conditions should be utilized.

Map Revisions. Any request to amend or modify an existing floodway must first receive a letter or a conditional letter of map revision (LOMR or CLOMR) from FEMA before DEEP will issue an approval. The purpose of a CLOMR is to ensure that the modifications will be acceptable to FEMA. A LOMR is not generally issued until a project is complete. The map revision process may be lengthy, so be sure to allow sufficient time for this process in your project schedule. The applicant should contact FEMA to obtain the most current document that outlines the procedures for obtaining a CLOMR.

When there is no Detailed FEMA Study. If FEMA has not established a flood zone with elevations on the watercourse or has not established a floodway, the applicant must develop an *existing conditions model* using field survey data and reasonable coefficients with a calculated design discharge based on a hydrologic model that is appropriate for the site such as TR-55.

In some cases where a culvert is proposed to be replaced in an area which has an unnumbered "A" zone, use of a model such as HY-8 may be acceptable for use in calculating differences in the water surface elevation upstream of the proposed culvert.

When FEMA Data is Unavailable. In some situations the FEMA input information is not available. In this case, applicants must provide the DEEP a letter from FEMA indicating that the requested material cannot be supplied. Applicants may then exclusively use field survey data to produce a model that matches as closely as possible to the published FIS model. A closer match may be made by adjusting roughness, contraction, and expansion coefficients. At minimum, cross sections should be taken as close to FEMA sections as possible. On rivers with established SCEL, cross section information from the SCEL study may be available from the DEEP.

Natural Conditions Model

For new or replacement bridges and culverts, a *natural conditions model* must be developed. The natural conditions model is intended to show the floodplain in the vicinity of the project as it would be without any artificial encroachments or modifications. For replacement bridges, the natural profile may be developed by modifying the *existing conditions model* to remove the bridge or culvert structure and any approach embankments. In the case where a downstream bridge or dam affects the tailwater of the bridge at the site, two models are required. The first model should show the natural conditions with all obstructions removed. The second model should show the proposed conditions with the downstream obstruction removed but the subject bridge left in place. This will more clearly demonstrate the effect of the subject bridge in

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comparison with natural conditions. The backwater value of the proposed bridge will be considered to be the difference between the two models.

Proposed Conditions Model

The *proposed conditions model* and *proposed conditions encroached model* (if floodway is present) is developed by modifying the *existing conditions model(s)* to reflect proposed changes. The *proposed conditions model* is compared to the *existing conditions model* to evaluate the hydraulic impacts of the project. The proposed project must not increase the water surface elevations for the 10 or 100-year floodway (encroached condition) profiles. If the proposed activity causes any increases, then the project design must be modified to eliminate these increases. If increases are shown for the unencroached 100-year profile or the SCEL profile, the impacts must be thoroughly discussed. Adverse impacts are not permissible. Additionally, for bridge and culvert projects, the proposed profile must be compared to the natural profile to determine if the design satisfies the goal of no more than one foot of backwater over the natural profile for the 100-year and/or the SCEL floodplain analysis. The applicant must satisfy this goal unless they can demonstrate unusual circumstances such as adverse property or environmental impacts.

When a floodway run is required, you must use FEMA's discharge. Do not propose increases in the floodway model over the model representing existing field conditions. Remember, proposed encroachments into the regulatory floodway will not be permitted if the project results in any increase (greater than **0.00** feet) in either the 10 or 100-year floodway (encroached condition) profiles. The IWRD will not approve an increase in the floodway elevations unless FEMA has granted a conditional letter of map revision. Some increase in the floodway elevations within the roadway right-of-way of a state project may be acceptable without FEMA's prior approval.

If the proposed unencroached 100-year water surface profile will be lower than the published information by more than 0.5 feet or if there are significant differences in the published data and the proposed water surface elevation due to modeling differences or errors in the FEMA data, you must notify FEMA by letter with a copy to the municipality and DEEP once the project is complete and provide to FEMA the hydraulic model information with the 500 year, 100 year, 50 year and 10 year flood profiles and an equal conveyance floodway. The letter sent to FEMA should make it clear that the information is being submitted for FEMA's future mapping use and not for a current map revision, as per agreement between DEEP and FEMA. The address for the FEMA Region I office (serving Connecticut) is:

J.W. McCormack Post Office and Court House
Room 442
Boston, MA 02109
617-223-9561

SECTION 4. SUMMARY AND PRESENTATION OF INFORMATION

The results of the hydraulic modeling should be clearly summarized in the engineering report to show water surface elevations, velocities and cross section information. This is best

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done through tables, profiles, cross section plots, and a clear narrative. A well-organized presentation can greatly facilitate timely permit reviews.

Hydraulic analyses should be submitted with the input data and full output tables. In the engineering report, conclusionary statements should be explained and fully supported by back-up data. Copies of computer output sheets should be checked for legibility. Often these pages are too light to read after being copied.

A CD of all input files contained within the report with an index of these files should be included with the engineering report. Label the disk with the project name. By including this diskette, some additional information requests may be avoided. In addition, if a disk is included, the output of the models need not be submitted; only a hard copy of the input and the summary tables must be included in the submittal.

Narrative. A narrative sufficient to explain the project should accompany the hydraulic analyses. The narrative should contain sections for project description, natural conditions, existing conditions, proposed conditions, and the hydraulic summary. Unusual error messages identified by the hydraulic analysis should be explained and/or commented upon. A complete narrative will assist DEEP staff to understand unusual circumstances or complex situations pertaining to the project. Any other information that the applicant feels will be helpful in assessing the project should also be included. Make sure the copies of the engineering report, especially computer printouts and hand computation sheets are legible. If the report is bound, make sure that no portions of the computer printouts are obscured. Reports should be tabbed and labeled so that sections can be easily located.

Profiles. In a report containing more than one discharge, profiles should show existing, proposed, and natural conditions on one page for each discharge. This enables an easy comparison of the profiles. A separate page should be used for each discharge. The existing and proposed profiles should converge both upstream and downstream of the project site or at least pass through critical depth. If decreases in water surface elevation are shown, convergence within 0.5' is acceptable. If not, the analysis should be extended upstream until convergence or critical depth is reached.

Cross Section Plots. The report should include plots of the cross sections, looking downstream. Cross section plots should be clear and have proposed conditions superimposed onto the existing conditions. Computer generated plots are often of a scale which does not clearly differentiate between existing and proposed conditions. In these situations, the applicant should provide drafted plots of the project area large enough so that existing versus proposed conditions are clearly depicted. The scale of the plots should be clearly denoted. A plan sheet showing cross section locations is required.

Tables. Table fields should be clearly labeled. A separate table should be shown for each discharge. Each cross section that is used in the model should be listed together with the published FEMA water surface elevation, existing and proposed conditions. FEMA lettered sections should be labeled. Include the differences between the FEMA and the existing model, and the difference between the existing and the proposed model.

Summary

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Include in the hydraulic package:

- Natural, existing, and proposed models based on the appropriate discharge.
- CD with input.
- Adequate narrative.
- Hydraulic Data Sheets.
- Profiles – one page per discharge.
- Cross sections.
- Tables – one table per discharge.
- Plans including erosion and sediment controls and water handling

NOTE: TO ALL APPLICANTS AND THEIR DESIGN TEAM.

When submitting an application requiring river hydraulic models the following fundamental information must be provided.

- **A copy of the FEMA back-up data. Note: FEMA cross-sections and flows must be used in development of the model.**
- **If FEMA back-up is not available, a copy of the original request to FEMA and the response letter back from FEMA must be provided.**
- **A disk including all runs as defined in the hydraulic Guidance Document. (NOTE: All runs must be provided on one disk under one project)**
- **No modifications to floodway boundary are permitted without approval from FEMA.**
- **The Hydraulic Analyses and results of the hydraulic modeling should be clearly summarized in the engineering report.**

This is fundamental information required in making a complete application and is not considered extra work. Failure to provide the above as minimum requirement will result in rejection of the application.

SECTION 5. OTHER IMPORTANT CONSIDERATIONS

Fish Passage. Projects must be designed to accommodate fish passage and maintain fish habitat where needed. If a culvert is proposed instead of a bridge, some methodologies used to provide fish passage are: sinking a box culvert bottom roughly one foot to allow accumulation of natural sediment in the box, providing a low flow channel, or using an inverted “U” type culvert in order to leave a natural bottom. Whenever a box culvert is proposed as a new river crossing or as a replacement for an existing bridge, it is advisable to contact the DEEP Fisheries Division prior to completing plans.

Spanning the Floodway. When an existing bridge spans the floodway, with its abutments at or outside the floodway limits, a proposal to replace the bridge in kind or with a greater span will not require a floodway evaluation provided the low chord of the existing and

APPENDIX 3 - HYDRAULIC ANALYSIS GUIDANCE DOCUMENT

proposed bridge is higher than the floodway elevation. This information must be clearly shown on plans and elevations. In the design of a new crossing, it is highly recommended that no part of the structure be within the floodway. This will eliminate the need for a floodway assessment but does not negate the need for obtaining an environmental permit(s) or approval of a flood management certification.

Overtopping of Local Bridges. Under certain limited conditions defined by regulation, local bridges may be allowed to overtop by floodwaters if site constraints so warrant. In this case, the application must state how the bridge will be closed to traffic in the case of a flood, what detour routes are available, and that the bridge will be posted as being prone to flooding.

Flood Storage. When a hydraulically inadequate bridge or culvert is proposed to be replaced and a significant drop in backwater at the structure is expected, the applicant must investigate whether the subsequent loss of upstream flood storage will have an adverse downstream impact. Information provided to DEEP to show the downstream impact should include the volume of storage upstream of the bridge lost in acre-feet. If the volume of storage lost is significant, more detailed flood storage routing may be required. Measures such as replacing the bridge or culvert in kind may have to be taken to avoid an adverse downstream impact.

Metric vs. English Units. Projects are sometimes designed using metric units, in compliance with past federal mandates. A hydraulic analysis that is completed in metric units may be submitted with an application; however, the summary must contain tables in both English and metric.

Tailwater Control. Occasionally a bridge or culvert will be inundated by backwater from a downstream river or from Long Island Sound. In these cases, the hydraulic analysis should generally be conducted using the design inland storm together with a ten-year tailwater elevation, unless it can be demonstrated that use of a different tailwater elevation would be appropriate. DEEP should be contacted for concurrence prior to submission of the report.

Channel Restoration. Channel restoration plans must be provided for all open channel work. The plan will help restore and/or create an aquatic habitat suitable for fisheries, if applicable, as well as maintain or improve water quality, recreation, aesthetics and flow capacity. The channel restoration plan should include, as appropriate: avoidance of barriers to fish movement; formation of pools and riffles; provisions for areas of sheltered flow with use of deflectors, boulders, or low check dams; preservation of stream bank vegetation and establishment of new vegetation; use of clean natural bed materials of a suitable size; scheduling of work to minimize conflicts with spawning, stocking, and fishing season; and removal of excess debris. The plan must be designed to avoid adverse hydraulic impacts from obstructions placed in the stream. Consultation with the DEEP Fisheries Division is recommended.

Temporary Hydraulic Facilities. Temporary hydraulic facilities include, among other things, temporary bridges, by-pass channels, haul roads or channel constrictions such as cofferdams. The *Drainage Manual*, Chapter 6, Section 15, and Appendix 6.F describes the methodology for determining the temporary design discharge for such facilities. Such facilities must be capable of conveying the temporary design discharge for the temporary facility without endangering life or property (including the structure under construction). The temporary

APPENDIX 3 - HYDRAULIC ANALYSIS GUIDANCE DOCUMENT

hydraulic facilities should not cause roadways to be overtopped or aggravate existing flooding conditions during the temporary design discharge. In the case where such facilities are utilized, the hydraulic design based on the *Drainage Manual* must be provided.

Hydraulic Data Sheets. Hydraulic data sheets should accompany every hydraulic report involving a bridge. Data sheets may be found in the *Drainage Manual*, Chapter 9, Appendix A.

Plans. Plans should be provided that are in conformance with the requirements listed in the application instructions DEEP-IWRD-INST-100. Plans must include erosion and sediment controls as well as water handling and sequence of construction information.

Pre-application Meetings. In cases where a project is hydraulically complex or problems with hydraulic modeling are foreseen, a pre-application meeting with IWRD engineering staff is highly recommended.

Copies. Only one copy of a hydraulic analysis should be submitted with an application, regardless of how many total copies of the application are required. This does not include plans, which must be submitted in the appropriate number.

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
BUREAU OF WATER MANAGEMENT
INLAND WATER RESOURCES DIVISION
79 ELM STREET, THIRD FLOOR
HARTFORD, CT 06106-5127
TEL. 860-424-3019
FAX 860-424-4075

APPENDIX 4 - PROJECT IMPLEMENTATION TABLES

APPENDIX 4 - PROJECT IMPLEMENTATION TABLES

The following tables only apply to Federally-funded Local Bridge Program projects.

Table 2: Project Implementation Table for Preliminary Engineering

Work Activity	Projects on the NHS				Projects off the NHS	
	Projects of FHWA Division Involvement (PODI)		Non-PODI		Non-PODI	
	CTDOT Action ¹	FHWA Action	CTDOT Action ¹	FHWA Action	CTDOT Action ¹	FHWA Action
Project Authorization for Preliminary Engineering (CTDOT informally calls this the obligation date)	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve
Recommended Project Memorandum	Prepare & Submit	File	Prepare & Approve	None	Prepare & Approve	None
Major Scope Revision	Prepare & Submit	Review & Modify the FMIS Agreement if Necessary	Prepare & Approve	Comment	Prepare & Approve	Comment
Use of Consultants in a Management Role	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve
Consultant Contract Selection	Prepare & Approve	None	Prepare & Approve	None	Prepare & Approve	None
Consultant Scope of Services / Agreements	Prepare & Approve	None ⁴	Prepare & Approve	None	Prepare & Approve	None
Sole Source Consultant Contract Selection	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve
Provide approval for complex and other unusual structures on the Interstate	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	NA	NA
Interstate Access Modification	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	NA	NA
Design Exceptions	Prepare & Submit	Review & Approve	Prepare & Approve	Comment at Design Exceptions meeting	Prepare & Approve	None
All EA/FONSI, EIS/ROD, 4(f), 106, 6(f) and other approval actions required by Federal environmental laws and regulations ⁶	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve

APPENDIX 4 - PROJECT IMPLEMENTATION TABLES

Table 2: Project Implementation Table for Preliminary Engineering (continued)

Work Activity	Projects on the NHS				Projects off the NHS	
	Projects of FHWA Division Involvement (PODI)		Non-PODI		Non-PODI	
	CTDOT Action ¹	FHWA Action	CTDOT Action ¹	FHWA Action	CTDOT Action	FHWA Action
Categorical Exclusion Approval ⁶	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve
Design Approval and Authorize Final Design Activities	Prepare & Submit	Review & Approve	Prepare & Approve	None	Prepare & Approve	None
Project Authorization for Right-of-Way (CTDOT informally calls this the obligation date)	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve
Value Engineering ³	Prepare, Approve, and Submit	Review & Comment	Prepare & Approve	Review & Comment	NA	NA
Design Plan/Package Submittals (PE, PD, SLD, SF, FPR, etc)	Prepare & Submit & Resolve FHWA Comments	Review & Comment	Prepare & Comment	None	Prepare & Comment	None
Buy America Waiver	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve
Cost Effectiveness Determinations: Non-Competitive Bidding; Use of State Force Account; Use of Publicly owned equipment	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve
Public Interest Findings: Use of State-furnished materials; Mandatory use of borrow/disposal sites; Salvaging items	Prepare & Submit	Review & Approve	Prepare & Approve	None	Prepare & Approve	None
PS&E Approval	Prepare & Submit	Review & Approve	Prepare & Approve	None	Prepare & Approve	None
Project Authorization for Construction (CTDOT informally calls this the obligation date)	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve
Addenda	Prepare & Submit	Review & Approve	Prepare & Approve	None	Prepare & Approve	None

APPENDIX 4 - PROJECT IMPLEMENTATION TABLES

Table 2: Project Implementation Table for Preliminary Engineering (continued)

Work Activity	Projects on the NHS				Projects off the NHS	
	Projects of FHWA Division Involvement (PODI)		Non-PODI		Non-PODI	
	CTDOT Action ¹	FHWA Action	CTDOT Action ¹	FHWA Action	CTDOT Action	FHWA Action
Concurrence in Contract Award	Prepare & Submit	Review & Approve	Prepare & Approve	None	Prepare & Approve	None
Rejection of Low Bidder and/or All Bidders	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve
Transportation Management Plans ⁵	Prepare & Approve	None ⁴	Prepare & Approve	None	Prepare and Approve	None
Utility and Railroad Agreements	Prepare & Approve	None ⁴	Prepare & Approve	None	Prepare & Approve	None
Approve exceptions to maximum railroad protective insurance limits	Prepare & Approve	None	Prepare & Approve	None	Prepare & Approve	None
Approve the use of Consultants by a Utility	Prepare & Approve	None	Prepare & Approve	None	Prepare & Approve	None
State Police MOAs	Prepare & Approve	None ⁴	Prepare & Approve	None	Prepare & Approve	None
Preliminary Engineering (Determination of Payback, Repayment or Time Extensions)	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve
Approval of Advertisement Period of less than 3 weeks	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve	Prepare & Submit	Review & Approve
Airport highway clearance coordination and respective public interest finding (if required)	Prepare & Submit	Review & Approve	Prepare & Approve	None	Prepare & Approve	None

NOTE:

- ¹ All of the CTDOT 'Action' items which indicate that the CTDOT shall 'Submit' to the FHWA, shall be Approved or otherwise endorsed by the CTDOT prior to submission to the FHWA, as applicable.
- ² See *Major Projects Chapter*; this requirement is in accordance with 23 CFR 172.9. Major projects are projects whose cost for all phases exceed \$500M
- ³ Value Engineering is required for projects over \$50M and structures over \$40M (the cost estimate is for all phases.)
- ⁴ Available to FHWA upon request
- ⁵ Transportation Management Plans as required specific to meet 23 CFR 630 Part 630, Subpart J, Engineering and Construction Policy #46
- ⁶ If there is a 23 U.S.C. 326 or 325 assignment or Programmatic Categorical Exclusion agreement, decisions are handled in accordance with those assignments or agreements.

APPENDIX 4 - PROJECT IMPLEMENTATION TABLES

Table 3: Project Implementation Table during Construction

Work Activity	Projects on the NHS				Projects off the NHS	
	Projects of FHWA Division Involvement (PODI)		Non-PODI		Non-PODI	
	CTDOT ACTION	FHWA ACTION	CTDOT ACTION	FHWA ACTION	CTDOT ACTION	FHWA ACTION
Notification of Pre-construction Meeting	Submit	Information	None	None	None	None
Record of Prior Approval for Major Contract Change Order	Prepare & Approve ²	None	Approve ²	None	NA	NA
Change Orders	Prepare & Approve ²	Review during construction inspections	Prepare & Approve ²	None	Prepare & Approve ²	None
Value Engineering Change Proposals	Review & Approve	Information (See Change Orders above)	Review & Approve	Information	Review & Approve	None
Claims	Prepare & Approve	Approve for eligibility	Prepare & Approve	Approve for eligibility	Prepare & Approve	Approve for eligibility
Time Extensions	Prepare & Approve	Approve (agree with increase in incidentals, or application of liquidated damages)	Prepare & Approve	None	Prepare & Approve	None
Suspension of Work	Prepare & Approve	None	Prepare & Approve	None	Prepare & Approve	None
Termination	Prepare & Approve	Concurrence	Approve	Information	Approve	None
FHWA Construction Inspection Reports	Information & Action (if required)	Conduct & Prepare Report, Distribute to CTDOT	Information & Action (if required)	Conduct if Spot Checking	Information & Action (if required)	Conduct if Spot Checking
FHWA Final Construction Inspection	Information	Conduct & Prepare Report	Conduct & Prepare Report	None	Conduct & Prepare Report	None

APPENDIX 4 - PROJECT IMPLEMENTATION TABLES

Table 3: Project Implementation Table during Construction (continued)

Work Activity	Projects on the NHS				Projects off the NHS	
	Projects of FHWA Division Involvement (PODI)		Non-PODI		Non-PODI	
	CTDOT ACTION	FHWA ACTION	CTDOT ACTION	FHWA ACTION	CTDOT ACTION	FHWA ACTION
Final Acceptance (CON-501)	Prepare, Approve & Submit	Review (FHWA generates a final acceptance without notification back to CTDOT)	Prepare & Approve	Information	Prepare & Approve	Information
Final Materials Certification	Prepare & Approve	Information (normally submitted with final acceptance package above)	Prepare & Approve	None	Prepare & Approve	None
Buy America Waiver ¹	Prepare	Approve	Prepare	Approve	Prepare	Approve
Acceptance of Bidder's Good Faith Efforts to Meet Contract Goal or of Prime Contractor's Good Faith Efforts to Find Another DBE Subcontractor when DBE Subcontractor is Terminated or Fails to Complete its Work	Prepare & Approve	None	Prepare & Approve.	None	Prepare & Approve	None
Construction Issues Form	Prepare & Submit	Information	Prepare	None	Prepare	None
Direct Purchase of Construction or Safety Equipment by CTDOT ³	Prepare & Submit	Review and Approve	Prepare and Submit	Review and Approve	Prepare and Submit	Review and Approve
Federal-aid agreement (modifications, Close-outs, Withdrawals) ⁴	Prepare & Submit	Approve	Prepare & Submit	Approve	Prepare & Submit	Approve

NOTE:

- ¹ Value of Permanent and material in excess of 0.1% of the contract value or \$2500 whichever is greater
- ² All change orders are delegated even if a change order is changing the scope of the contract. The Non-Competitive approval row in Table 2 does not apply in terms of the FHWA approval. The CTDOT still must assess that it is in the public interest to perform the work via a change order and not by advertising a separate contract. In some cases, the description in the Federal-aid agreement may need to be changed also, prior to the work being performed. See the last row of the above table.
- ³ See FHWA memorandum dated 12/14/2018, on Eligibility of Construction and Highway Safety Equipment Acquisition Costs as a Direct Charge
- ⁴ CTDOT's Finance and Administration Section generates these actions

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

LEGAL NOTICE TEMPLATE

LEGAL NOTICE: The **Town/City of _____** is seeking to engage the services of a Consulting Engineering firm to provide engineering services for the preparation of contract plans and documents for the following transportation project:

State Project No. _____ - Project Title

{Project description}

The Consulting Engineering firm selected may also be required to provide survey, prepare environmental documents and perform construction inspection. The projected construction cost is expected to be in the range of \$ _____.

Firms responding to this request should be of adequate size and sufficiently staffed to perform the assignment described above.

The Consulting Engineering firm will be evaluated and selected based on design and technical competence, the capacity and capability to perform the work within the time allotted, past record of performance, and knowledge of Federal, State, and Municipal procedures, appropriately weighted in descending order of importance.

The design fee will be negotiated on a Lump Sum basis.

{Choose the appropriate paragraph from the following three and delete the two that do not apply regarding DBE/SBE/SBPPP assignments}

For a DBE Goal:

The Disadvantaged Business Enterprise (DBE) sub consultant goal will be no less than _____ percent (____%) of the original agreement value.

For an SBE Goal:

Under Connecticut General Statue § 4a-60g, Connecticut has an established and on-going commitment to providing equal opportunity to Connecticut small (SBE) and minority owned business enterprises (MBE) to contract as a contractor for the Connecticut's purchased goods and services. You are advised that there is a _____ percent (____%) small business sub consultant goal that applies to this assignment. Within the letter of interest narrative, you must include the designated certified Small Business Enterprise (SBE) sub consultant(s) which you plan to use. (The SBE sub consultants must be currently certified by the Department of Administrative

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

Services). All firms are advised that the prime consultant must perform the major part of the work with employees of the firm. Sub consultants may be used to comply with (SBE) requirements or perform specialized work. Joint venturing assignments will not be allowed.

For an SBPPP Assignment:

The Consulting Engineering firm selected for this project must meet the requirements of the Small Business Participation Pilot Program (SBPPP).

To be eligible to participate in the SBPPP, firms must be currently certified as one of the following: a Connecticut Department of Transportation certified Disadvantaged Business Enterprise (DBE), a Connecticut Department of Administrative Services (DAS) certified Small/Minority Business Enterprise (SBE/MBE), or certified under one of the United States Small Business Administration's Programs; (8(a) firm; Small Disadvantaged Business(SDB); HUB Zone; US SBA Loan recipient (Loan Note documentation required).

The selected firm must meet all Municipal, State, and Federal affirmative action and equal employment opportunity practices.

A letter of interest, together with general information on the firm and proposed sub consultants, the firm's brochure, current Federal Form SF330, experience of the firms, and resumes of key personnel shall be addressed to: **{Town/City contact} {address}**. Additionally, all interested firms must submit a detailed statement including the organizational structure under which the firm proposes to conduct business. Proposed sub consultants should be clearly identified. The relationship to any "parent" firm or subsidiary firm, with any of the parties concerned, must be clearly defined.

Personnel in responsible charge of the projects will be required to possess and maintain a valid Connecticut Professional Engineer's License. All letters of interest must be postmarked by a U.S. Post Office (if mailed) or brought to **{location}**, at the above address (if hand delivered) no later than **{time}** on **{date}**. Responses received or postmarked after this date will not be considered.

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES**NOTIFICATION FOR LETTER OF INTEREST TEMPLATE****{Date}**

Ladies/Gentlemen:

Subject: **Request for Letter of Interest**
 State Project No. _____
 Federal-aid Project No. _____
 Project Title _____
 Town/City of _____

Your firm is one of the firms that have been pre-qualified for this calendar year by the Connecticut Department of Transportation to provide **{type of services appropriate for project}** services.

The **{Town/City of _____}** is seeking to engage the services of a Consulting Engineering firm to perform design services for **{project title and limits}**. The improvements will include **{brief description of the project elements}**.

Successful applicants to this request may be required to provide survey, prepare environmental documents and perform construction inspection. Additionally, firms responding to this request should be of adequate size and sufficiently staffed to perform the assignment described above.

If your firm desires to be considered for this assignment, your submittal should consist of a letter of interest, together with general information on the firm and proposed sub consultants, the firm's brochure, current Federal Form SF330, experience of the firms, and resumes of key personnel. Additionally, all interested firms must submit a detailed statement including the organizational structure under which the firm proposes to conduct business. Proposed sub consultants should be clearly identified. The relationship to any "parent" firm or subsidiary firm, with any of the parties concerned, must be clearly defined. **{Number of copies}** of the submittal must be postmarked by **{date}** (if mailed) or brought to **{Town/City contact}** at the address below (if hand delivered) no later than **{time}** of that date. Responses received or postmarked after this date will not be considered.

Your firm will be evaluated and selected based on design and technical competence, the capacity and capability to perform the work within the time allotted, past record of performance, and knowledge of Federal, State, and Municipal procedures, appropriately weighted in descending order of importance. The selected firm must meet all Municipal, State, and Federal affirmative action and equal employment opportunity practices.

{Choose the appropriate paragraph from the following three and delete the two that do not apply regarding DBE/SBE/SBPPP assignments}

For a DBE goal:

You are advised that there is a **___ percent (___%)** disadvantaged business sub consultant goal that applies to this assignment. Within the letter of interest narrative, you must include the designated certified Disadvantaged Business Enterprise (DBE) sub consultant(s) which you plan to use. (The DBE sub consultants must be currently certified by the Department). All firms are advised that the prime consultant must perform the major part of the work with employees of the firm. Sub consultants may be used to

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

comply with (DBE) requirements or perform specialized work. Joint venturing assignments will not be allowed.

For an SBE goal:

Under Connecticut General Statute § 4a-60g, Connecticut has an established and on-going commitment to providing equal opportunity to Connecticut small (SBE) and minority owned business enterprises (MBE) to contract as a contractor for the Connecticut's purchased goods and services. You are advised that there is a _____ percent (____%) small business sub consultant goal that applies to this assignment. Within the letter of interest narrative, you must include the designated certified Small Business Enterprise (SBE) sub consultant(s) which you plan to use. (The SBE sub consultants must be currently certified by the Department of Administrative Services). All firms are advised that the prime consultant must perform the major part of the work with employees of the firm. Sub consultants may be used to comply with (SBE) requirements or perform specialized work. Joint venturing assignments will not be allowed.

For an SBPPP assignment:

You are advised that the Consulting Engineering firm selected for this project must meet the requirements of the Small Business Participation Pilot Program (SBPPP). To be eligible to participate in the SBPPP, firms must be currently certified as one of the following: a Connecticut Department of Transportation certified Disadvantaged Business Enterprise (DBE), a Connecticut Department of Administrative Services (DAS) certified Small/Minority Business Enterprise (SBE/MBE), or certified under one of the United States Small Business Administration's Programs; (8(a) firm; Small Disadvantaged Business(SDB); HUB Zone; US SBA Loan recipient (Loan Note documentation required).

Prior to the negotiation process, the selected firm will be required to have a Connecticut Department of Transportation-approved audit and affirmative action plan, as well as current corporate registration with the Secretary of State (partnerships excluded). The selected firm will also be required to maintain professional liability insurance coverage from a firm licensed to do business in the State of Connecticut. Proof of coverage must be submitted prior to the start of the negotiations process.

Circumstances may require the rescheduling or cancellation of projects. Should this action be necessary, the {Town/City} would be under no obligation to provide supplementary work.

All letters of interest shall be addressed to:

{Town/City contact}
{Address}.

Please be advised that firms must also be pre-qualified in the particular year a shortlist is finalized and/or a selection is made.

Very truly yours,
{Purchasing agent}
{Title}

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

LETTER OF INTEREST RATING FORM

STATE PROJECT NO. _____

FEDERAL PROJECT NO. _____

PROJECT DESCRIPTION: _____

NAME OF FIRM: _____

CRITERIA	MAXIMUM POINTS	POINT RATING
Specialized Design and Technical Competence	40	_____
Capacity and the Capability to perform the work within the time allotted	30	_____
Past Record of Performance on Contracts with the Town and other Clients with respect to such factors as control of costs, quality of work, and cooperation with the client.	20	_____
Knowledge of Federal, State and Municipal Procedures	10	_____
TOTAL	100	_____

PREPARED BY: _____

Printed Name of Panel Member

SIGNATURE OF PANEL MEMBER: _____ Date: _____

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

LETTER OF INTEREST RATING SUMMARY FORM

STATE PROJECT NO. _____

FEDERAL PROJECT NO. _____

PROJECT DESCRIPTION: _____

CONSULTANT FIRM	INDIVIDUAL PANEL MEMBER POINT RATINGS				TOTAL POINTS
	(1)	(2)	(3)	(4)	
1. _____	_____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____	_____

SUMMARY PREPARED BY: _____
 Printed Name of Consultant Selection Panel Member

SIGNATURE OF PREPARER: _____ DATE: _____

REVIEWED/APPROVED BY: _____ DATE: _____
 Signature of Chairperson
 Consultant Selection Panel

PRINTED NAME OF CHAIRPERSON: _____

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

INTERVIEW RATING FORM

STATE PROJECT NO. _____

FEDERAL PROJECT NO. _____

PROJECT DESCRIPTION: _____

NAME OF LEAD FIRM: _____

LOCATION OF OFFICE: _____

NAME OF SUB-CONSULTANT FIRM: _____

(If applicable)

QUESTION	MAXIMUM POINTS*	POINT RATING
1.		_____
2.		_____
3.		_____
4.		_____
5.		_____
6.		_____
7.		_____
TOTAL	100	_____

PREPARED BY: _____

Printed Name of Panel Member

SIGNATURE OF PANEL MEMBER: _____ Date: _____

Note: Maximum point values for each question to be appropriately weighted based on critical project design elements and number of questions.

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

INTERVIEW RATING SUMMARY FORM

STATE PROJECT NO. _____

FEDERAL PROJECT NO. _____

PROJECT DESCRIPTION: _____

CONSULTANT FIRM	INDIVIDUAL PANEL MEMBER POINT RATINGS				TOTAL POINTS
	(1)	(2)	(3)	(4)	
1. _____	_____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____	_____

SUMMARY PREPARED BY: _____
Printed Name of Consultant Selection Panel Member

SIGNATURE OF PREPARER: _____ DATE: _____

CONSULTANT FIRM SELECTED: _____

REVIEWED/APPROVED BY: _____ DATE: _____
Signature of Chairperson
Consultant Selection Panel

PRINTED NAME OF CHAIRPERSON: _____

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

CONSULTANT PERFORMANCE EVALUATION**Consultant Evaluation Form****Rating Period:****Project No.:****Project Description:****Consulting Firm:****Consultant Project Manager (Primary Contact):****Office/Regional Manager:**

Is this a Task Order Assignment? ___ Yes ___ No

Is this a final Evaluation? ___ Yes ___ No

Did work occur during this Rating Period? ___ Yes ___ No (if no, do not complete the remaining sections)

Work Categories:

Check all box(es) which were the primary services being rated as part of this agreement:

- Bridge and Structure Design
- Highway Design
- Traffic and Safety Engineering
- Environmental Compliance
- Bridge and Structure Inspection
- Construction Engineering and Inspection (Roadway & Bridge)
- Environmental Planning Studies and Regulatory Permitting

All aspects of a rating description do not need to be met in order for a firm to deserve that particular rating. However, it should most accurately describe the firm's performance for the current rating period.

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

To Be Filled Out By The Municipality**1. Project Team, Staffing and Resources – Teams experience, background, knowledge, credentials and available resources.**

- Exceptional** - The entire project team consisted of highly qualified individuals which exceeded the needs of the Department. The team took initiative in addressing the project requirements, was professional and extremely productive. The team anticipated problems before they arose, were efficient in their use of resources, and made quick decisions. The consultant had additional staff, including specialized expertise, which was always available.
- Very Good** - Most of the project team consisted of highly qualified individuals which exceeded the needs of the Department. Team sometimes took initiative in addressing the project requirements. Presentations and meetings were conducted professionally and very productive. Team anticipated problems and had the ability to solve them. The consultant had additional staff which was usually available and they were able to bring in specialized expertise as necessary.
- Good** - The project Team consisted of individuals with various levels of qualifications which met the needs of the Department. The team addressed the project needs with input and guidance from the Department. Presentations and meetings were conducted professionally and were productive. The team communicated and resolved project issues as necessary. The consultant had adequate resources to complete the work and they were able to bring in specialized expertise in a timely manner.
- Needs Improvement** - The project team consisted mostly of individuals with lower levels of qualifications which sometimes did not meet the needs of the Department. At times, the team had trouble resolving issues without consistent oversight from the Department, were sometimes disorganized or unproductive due to lack of information or knowledge of the team members. The team had difficulty communicating and/or resolving project issues as expected. The consultant had limited resources to complete the work and had difficulty finding specialized expertise in a timely manner.
- Unsatisfactory** - The project team consisted of individuals with varying experience, background, knowledge and credentials which often did not meet the needs of the Department. The team regularly had trouble resolving issues even with excessive Department oversight, were often disorganized and/or unproductive due to lack of information or knowledge of the team members. The team did not communicate or resolve project issues. The consultant had no available resources to complete the work and could not find specialized expertise.
- Not applicable during this rating period
-

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

2. Communication and Responsiveness – The ability to keep the Municipality informed on relevant issues and the ability to respond to correspondence, including but not limited to emails, phone calls, and faxes.

- Exceptional** - The consultant exceeded Municipality expectations in fulfilling all requests and immediately responded to correspondence. Responses were clear, concise and accurate. Consultant was proactive in initiating and maintaining communication. The team immediately informed the Municipality of relevant project related issues and status updates.
- Very Good** - The consultant often exceeded Municipality expectations and quickly responded to correspondence. Responses were clear, concise and accurate. Consultant maintained communication and satisfied all requests. The team always kept the Municipality well informed of relevant project related issues and status updates.
- Good** - The consultant met Municipality expectations and responded to correspondence in a timely manner. Responses were usually clear, but occasionally required follow-up efforts by the Municipality. The team periodically contacted the Municipality and provided relevant project related issues and status updates.
- Needs Improvement** - The consultant often did not meet Municipality expectations in responding to correspondence. Responses were usually unclear, delayed or required regular follow-up efforts by the Municipality. The team did not regularly contact the Municipality on relevant project related issues and status updates.
- Unsatisfactory** - The consultant did not meet Municipality expectations in responding to correspondence. The consultant consistently responded late and required multiple follow-up efforts by the Municipality. Responses were unclear. The team did not contact the Municipality on relevant project related issues and status updates. The impact was detrimental to the progress of the assignment.
- Not applicable during this rating period

3. Quality of Work - The ability to collect, generate, apply, interpret and present information. The accuracy, reliability and completeness of submissions, data, and deliverables required for the project - including but not limited to plans, specifications, estimates, reports, report of meetings, permit applications, property maps, and surveys.

- Exceptional** - Submissions were complete, required no or extremely minimal revisions or input from Municipality. Data was extremely accurate. Submissions complied with Local standards, policies and procedures. Resubmittals were not required.
- Very Good** – Submissions were complete, required very few revisions, and review comments were addressed with minimal effort. Data was accurate. Submissions complied with Local standards, policies and procedures.

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- Good** - Submissions were complete, required some revisions, and review comments were resolved sufficiently. Resubmittals were not required. Submissions complied with Local standards, policies and procedures.
- Needs Improvement** – Submissions were incomplete and generated many comments. Some resubmittals were required. Submissions did not always comply with Local standards, policies and procedures.
- Unsatisfactory** - Submissions were substantially substandard. Revisions and resubmission were frequently required. Review comments were not adequately addressed. Submissions did not always comply with Local standards, policies and procedures.
- Not applicable during this rating period

4. Project Coordination - Ability to coordinate with the Municipality and the general public in accomplishing the assignment. The ability to coordinate the work of the contractor, subcontractor, utilities, department units, railroads, etc.

- Exceptional** - The consultant exceeded Municipality expectations in coordinating with all agencies at all times, including proactive involvement, which led to efficiencies and improvements in the project schedule. Key staff was professional and easy to work with. The team was immediately available to meet the Municipality’s needs.
- Very Good** - The consultant often exceeded Municipality expectations in coordinating with all agencies and Department offices. Coordination efforts lead to improvements in the project schedule. Key staff was professional and easy to work with. The team was consistently available to meet the Municipality’s needs.
- Good** - The consultant met Municipality expectations in coordinating with necessary agencies and Municipality offices. Coordination efforts kept the project on schedule. Key staff was professional and usually easy to work with. The team was often available to meet the Municipality’s needs.
- Needs Improvement** - The consultant often did not meet Municipality expectations in coordinating with necessary agencies and Municipality offices. Lack of coordination sometimes led to project delays, and required additional supervision or oversight by Municipality staff and the Department. Key staff was difficult to work with or argumentative. The team did not meet the Municipality’s needs which impeded progress on the project.
- Unsatisfactory** – The consultant consistently had issues in coordinating with necessary agencies and Municipality offices. Lack of coordination resulted in major project delays and necessitated corrective action being pursued by the Municipality and the Department. Key staff was difficult to work with or argumentative. The team did not meet the Municipality’s needs which severely impeded progress on the project.

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- Not applicable during this rating period.

5. Contract Proposals and Extra Work

- Exceptional**- Requests for extra work were immediately communicated to the Municipality, a scope of work was quickly defined and negotiations were completed with no impact to the project schedule. Proposals were accurate and justifiable. Requests for extra work were extremely limited (e.g., original scope of work was comprehensive and well defined), and in accordance with Municipality procedures. Consultant offered workable solutions to minimize extra work.
- Very Good**- Requests for extra work were quickly communicated to the Municipality, a scope of work was defined with minimal Municipality input, and negotiations were completed with no impact to the project schedule due to the consultant's effort. Proposals were accurate and justifiable. Requests for extra work were limited, and in accordance with Municipality procedures. Consultant often offered workable solutions to minimize extra work.
- Good**- Requests for extra work were communicated to the Municipality, a scope of work was defined with Municipality input, and negotiations were completed in an acceptable amount of time. There were no impacts to the project schedule due to the consultant's effort. Proposals were accurate and justifiable. Requests for extra work were appropriate, and in accordance with Municipality procedures. Consultant tried to minimize extra work claims, when possible.
- Needs Improvement**- Requests for extra work, scope of works, and/or negotiations were delayed, required revisions, or additional effort and time by Municipality staff. Some requests for extra work were not justifiable. Extra work was sometimes not communicated in a timely manner, or did not always follow Municipality procedures. Work progress was slowed due to extended delays.
- Unsatisfactory**-Requests for extra work were delayed or not submitted. Scopes of work and/or proposal revisions were not submitted in a timely manner. Requests for extra work were consistently not justifiable and/or did not follow Municipality procedures. Consultant did not identify extra work until after the services were provided or when the budget was overrun. Work progress was severely delayed or suspended.
- Not applicable during this rating period

6. Invoicing

- Exceptional**-Invoices were submitted on schedule; as appropriate for the progress of the assignment. The information was clear, accurate, and complete, including all backup data. No errors. Extremely well organized. Minimal time required by Municipality staff to process. Payments were made to subcontractors in accordance with the Agreement.

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- Very Good** - Invoices were submitted on schedule; as appropriate for the progress of the assignment. The information was clear, accurate and complete, including all backup data. Minimal errors, but the invoice could still be processed as submitted. Well organized. Minimal time required by Municipality staff to process. Payments were made to subcontractors in accordance with the Agreement.
- Good**- Invoices were submitted on schedule; as appropriate for the progress of the assignment. The information was fairly accurate, but sometimes required minor revisions or the information was not well organized. Sometimes required additional information or back up data to be requested by the Municipality staff which added time to the review process. Payments made to subcontractors in accordance with the Agreement.
- Needs Improvement** – Invoices are submitted at random times. The information is not organized, contained inaccuracies, or missing data, which required major revisions and/or resubmissions. Extra time and effort was required by Municipality staff. Payments were sometimes not made to subcontractors in accordance with the Agreement.
- Unsatisfactory**- Invoices are rarely submitted in a timely manner. Invoices were inaccurate, disorganized, billed for ineligible items, contained irrelevant information, or were missing data, which required multiple revisions and resubmissions. Payments were not made to subcontractors in accordance with the Agreement.
- Not applicable during this rating period

7. Disadvantage Business Enterprise (DBE)/Small Business Enterprise (SBE)

- Meets or exceeds established goal
- Currently not meeting established goal but has demonstrated a plan to attain goal
- Currently not meeting established goal, and has no apparent plan to achieve goal – required to submit plan within 30 days
- Not applicable

Overall/General Comments (include achievements, shortfalls or any pertinent feedback for this period):_

For the Municipality:

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Prepared By: _____
(Public Works Director/Town Engineer)

Approved By: _____
(Town Administrator)

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

To Be Filled Out by Department of Transportation**1. Project Coordination - Ability to coordinate with The Department, Federal, and other State agencies, and the general public in accomplishing the assignment. The ability to coordinate the work of the contractor, subcontractor, utilities, department units, railroads, etc.**

- Exceptional** - The consultant exceeded Department expectations in coordinating with all agencies at all times, including proactive involvement, which led to efficiencies and improvements in the project schedule. Key staff was professional and easy to work with. The team was immediately available to meet the Department's needs.
- Very Good** - The consultant often exceeded Department expectations in coordinating with all agencies and Department offices. Coordination efforts lead to improvements in the project schedule. Key staff was professional and easy to work with. The team was consistently available to meet the Department's needs.
- Good** - The consultant met Department expectations in coordinating with necessary agencies and Department offices. Coordination efforts kept the project on schedule. Key staff was professional and usually easy to work with. The team was often available to meet the Department's needs.
- Needs Improvement** - The consultant often did not meet Department expectations in coordinating with necessary agencies and Department offices. Lack of coordination sometimes led to project delays, and required additional supervision or oversight by Department staff. Key staff was difficult to work with or argumentative. The team did not meet the Department's needs which impeded progress on the project.
- Unsatisfactory** – The consultant consistently had issues in coordinating with necessary agencies and Department offices. Lack of coordination resulted in major project delays and necessitated corrective action being pursued by the Department. Key staff was difficult to work with or argumentative. The team did not meet the Department's needs which severely impeded progress on the project.
- Not applicable during this rating period.

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

2. Quality of Work - The ability to collect, generate, apply, interpret and present information. The accuracy, reliability and completeness of submissions, data, and deliverables required for the project - including but not limited to plans, specifications, estimates, and reports, report of meetings, permit applications, property maps, and surveys.

- Exceptional** - Submissions were complete, required no or extremely minimal revisions or input from the Department. Data was extremely accurate. Submissions complied with Federal and State standards, policies and procedures. Resubmittals were not required.
- Very Good** – Submissions were complete, required very few revisions, and review comments were addressed with minimal effort. Data was accurate. Submissions complied with Federal and State standards, policies and procedures.
- Good** - Submissions were complete, required some revisions, and review comments were resolved sufficiently. Resubmittals were not required. Submissions complied with Federal and State standards, policies and procedures.
- Needs Improvement** – Submissions were incomplete and generated many comments. Some resubmittals were required. Submissions did not always comply with Federal and State standards, policies and procedures.
- Unsatisfactory** - Submissions were substantially substandard. Revisions and resubmission were frequently required. Review comments were not adequately addressed. Submissions did not always comply with Federal and State standards, policies and procedures.
- Not applicable during this rating period

3. Timeliness of Submittals - All submissions, data, and deliverables required to complete the project, including but not limited to plans, specifications, estimates, reports, report of meetings, permit applications, property maps, surveys, or any other deliverables requested by the Department.

- Exceptional**- Submittals were always on time (sometimes early), and/or the Consultant demonstrated the ability to meet difficult schedules. Consultant did not require reminders or prompting.
- Very Good**- Submittals were always on time. Consultant required minimal reminders.
- Good**- Submittals were on time. Consultant required occasional reminders.
- Needs Improvement** - Submittals were sometimes late (occasionally extremely late.) Consultant required prompting, reminders, and/or status checks by the Department. Timeliness of submittals delayed the project schedule.
- Unsatisfactory**- Submittals were consistently and/or extremely late. Consultant required repeated prompting and reminders. Timeliness of submittals significantly delayed the project schedule.
- Not applicable during this rating period

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

4. Knowledge of Department Policy and Procedures and Technical Expertise.

- Exceptional**- Consultant demonstrated extensive knowledge of Department policies and procedures throughout the assignment which resulted in early decision making and time/cost savings. Consultant anticipated potential issues before they arose and proposed workable solutions. Consultant suggested innovative techniques and/or processes and demonstrated the technical expertise to incorporate them into the assignment. Consultant was involved in developing the latest industry guidelines.
- Very Good**- Consultant was very familiar with and complied with Department policies and procedures. Consultant demonstrated the technical expertise to complete all aspects of the assignment while improving project schedule and budget. Consultant anticipated potential issues before they arose and notified the Department. Consultant demonstrated knowledge of the latest industry standards.
- Good**- Consultant was familiar with and complied with Department policies and procedures. Consultant demonstrated the technical ability to complete all aspects of the assignment. Consultant kept the Department informed of potential issues in a timely manner. Consultant demonstrated knowledge of industry standards.
- Needs Improvement** - Consultant did not demonstrate adequate knowledge of Department policies and procedures. Consultant sometimes lacked the technical ability to complete certain aspects of the assignment and could not defend or justify technical decisions. Consultant failed to notify the Department of potential issues in a timely manner. Excessive Department oversight was required to maintain progress on the assignment.
- Unsatisfactory**- Consultant did not demonstrate knowledge of Department policies and procedures. Consultant consistently lacked the technical ability to complete aspects of the assignment and could not defend or justify technical decisions. Consultant did not notify the Department of potential issues. Work progress was severely delayed or suspended.
- Not applicable during this rating period

Overall/General Comments (include achievements, shortfalls or any pertinent feedback for this period):_

APPENDIX 5 – CONSULTANT SOLICITATION, RATING, AND EVALUATION TEMPLATES

For the Department:

Submitted By: _____
(Project Engineer)

Approved By: _____
(Project Manager)

Local Bridge Program Manual

In order to improve this manual for future users, your comments and suggestions would be greatly appreciated. Please email to Marc.Byrnes@ct.gov. What parts of the manual did you find:

Most helpful, and why? _____

Least helpful, and why? _____

Confusing? _____

I would like more information on: _____

General Comments: _____
