Request for Qualifications (RFQ) For
Rubber Avenue Revitalization Project
Consulting Services to Provide Planning and Design Activities, Naugatuck, CT

FY26-B136

Issued By:

BOROUGH OF NAUGATUCK
Department of Public Works
229 CHURCH STREET
NAUGATUCK, CT 06770

Borough of Naugatuck
LEGAL NOTICE

REQUEST FOR Qualifications

The Borough of Naugatuck is seeking request for qualifications (RPQ) for Consulting Services to Provide Planning and Design Activities for a stormwater, sidewalk, and combined public works/emergency services facility in Naugatuck, CT, FY26-B136

Sealed Responses will be received by the Purchasing Agent for the Borough of Naugatuck, Accounting Dept. Basement, Town Hall, 229 Church Street, Connecticut, 06770 until January 13, 2025 at 10:00 AM local time after which no additional qualifications will be accepted.

Immediately following the above time and date sealed Submissions will be publicly opened at the Town Hall at the Borough of Naugatuck, Dept, 229 Church Street, Naugatuck, CT 06770 and read aloud via Zoom.

Please follow link below to access scheduled RFQ Submission opening.

Join Zoom Meeting
https://us06web.zoom.us/j/6761116286?pwd=JEzCAEJIoet3nV2NVOo0oviSbAGanu.1&omn=88070023216

Meeting ID: 676 111 6286
Passcode: 560827

The RFQ document may be examined and obtained at no cost from the Borough of Naugatuck web site http://www.naugatuck-ct.gov. All RFQ Submitters must check the Borough web site within four (4) days of the scheduled submission opening to check for addenda.

The right is reserved by the Borough of Naugatuck to reject any or all RFQs, to waive any informalities or defects in submissions and to make such time extensions as may be necessary in order to review and compare submissions, to obtain such supplemental information as may be necessary to review submissions and to accept submission(s) that, in the judgment of the Borough of Naugatuck, will be in the Borough's best interest.

The Borough of Naugatuck is an affirmative action/equal opportunity employer MBE's, WBE's and SBE's are encouraged to apply.

Request for Qualifications from Consultants/Contractors to Provide Planning & Design Activities for Stormwater Drainage, Sidewalks, and a Combined Public Works/Emergency Services Facility Building

SECTION 1 GENERAL INFORMATION AND REQUIREMENTS

1. General Information

The Borough of Naugatuck (BON) seeks Statements of Qualifications and expressions of interest from consultants ("Contractor") with proven expertise in Cost Estimates and Cost Control, Community Outreach and Public Presentations, underground utility infrastructure planning and coordination, stormwater drainage planning & design, sidewalk planning and design, municipal public facility planning and design, land survey, geotechnical and subsurface investigation planning, planning in support of a project's anticipated environmental, and community impacts, as well as intimate knowledge of State economic & community development programs and funding sources, including the Community Investment Fund. The Contractor should also be familiar with easement mapping & planning.

1.1 Background

In 2024 the Borough received a $5,754,493 Community Investment Fund ("CIF") Round 4 Grant Award. The project budget also leverages municipal and federal funds, as can be shown in the attached project budget. CIF funds will be used to invest in infrastructure surrounding Rubber Avenue, that will promote private investment in the area, thus transforming the Rubber Avenue Corridor.

A portion of the total funds are specifically allocated for the planning and design of:

1. A new Department of Public Works/Ambulance (EMS) Facility, located at 34 Andrew Avenue

2. Sidewalk Replacements along a portion of Scott Street and in the Nettleton Neighborhood (Nettleton Neighborhood includes Aetna Street, Cliff Street, LeClair Court, Lynn Road)

3. Upgrade the Stormwater Drainage in the Nettleton Neighborhood (includes Aetna Street, Cliff Street, LeClair Court, Lynn Road). An easement for storm sewer access, with the right to use, maintain, and repair said storm sewer pipes at 53 LeClair Court, Naugatuck, currently owned by the Estate of Maria M. Branco a/k/a Marie. M Branco, has been obtained by the Borough of Naugatuck and can be found attached to this application.

1.2 Preliminary Scope of Services

Task 1 – Design of Combined Public Works and EMS (Ambulance) Facility

The Submitter ("consultant") will provide a conceptual & master plan for the design of the combined public works & EMS (Ambulance) facility to be located at 34 Rubber Avenue. This line item also includes utility design coordination, with other utilities such as Eversource, Naugauck WPCA, and CTWater, as required.

A. Conceptual Designs
B. Preliminary Designs
C. Final Designs
D. Contract and Bid Documents
E. Cost Estimates
F. Utility Design Coordination (Eversource, CTWater, Naugatuck, WPCA, and others as applicable)
G. Coordination with LEP on site to ensure design follows environmental conditions of site

Task 2 – Design of Sidewalks on Scott Street and Nettleton Neighborhood

The Submitter ("consultant") will provide a conceptual & master plan for the design of the sidewalks on Scott Street and in the Nettleton Neighborhood. Nettleton Neighborhood includes: Aetna Street, Cliff Street, LeClair Court, Lynn Road. See attached map.

A. Survey
B. Condition Assessment of Current Sidewalks, provide recommendation of full replacement or repair.
C. Parking analysis
D. Cost Estimates for each option
E. Final Designs based on chosen option
F. Contract and bid documents
G. Utility Design Coordination (CTDOT, Eversource, CTWater, and others as applicable)

Task 3– Design of Nettleton Neighborhood Stormwater Drainage

The Submitter ("consultant") will provide a engineering plans and contract documents for the construction of the stormwater drainage upgrades required in the Nettleton Neighborhood. Nettleton Neighborhood includes: Aetna Street, Cliff Street, LeClair Court, Lynn Road. See attached map.

A. Review current documentation provided by the Borough
B. Conceptual, Preliminary, and Final Designs
C. Final Cost Estimates
D. Utility Design Coordination
E. Easement Work

Task 4 – Other Planning Work

A. Public Engagement
B. Meetings with Naugatuck (bi-weekly Progress Meetings)
C. Stakeholder Coordination Meetings (LEP, NVCOG, etc.)

Task 5 - Bid and Construction Services

A. The Selected Consultant may also be asked to provide Bid and Construction services

1.3 Schedule

The Borough is anticipating that this project to take 8 months from Start to Finish.

Issue Date for RFQ: December 12, 2025

Deadline for RFIs: January 5, 2026

Submittal Due Date: January 19, 2026

Expected/Anticipated Interview Dates: Week of February 23, 2026

Expected/Anticipated Date for Work to Begin: Week of April 1, 2026

Expected/Anticipated Length of Time Work is Expected to Take: September 1, 2026

1.4 Clarifications and Interpretations

a. All questions and inquiries shall be directed to:

James R. Stewart P.E. & L.S.
Director of Public Works
229 Church Street
Naugatuck Ct, 06770
(203) 720-7071
jstewart@naugauck-ct.gov

b. Questions must be submitted at least 1 week prior to receipt date.
All firms interested in responding and receiving Clarifications and Interpretations must submit contact information by e-mail to jstewart@naugauck-ct.gov

c. All significant questions and responses will be disseminated to the registered respondents as soon as possible.

1.5 Submission of Qualifications

Qualifications ("submissions") will be accepted until 10 a.m. on January 19, 2026. All qualifications must be clearly marked on 1 large envelope entitled: "Borough of Naugatuck Rubber Avenue Revitalization Project Qualifications".

Late submissions will not be accepted. Qualifications shall be directed to:

James R. Stewart P.E. & L.S
Director of Public Works 229 Church Street
Naugatuck Ct, 06770
(203) 720-7071
jstewart@naugauck-ct.gov

1.6 Evaluations and Qualifications

A five-person panel (members to be determined) will invite the most qualified firms for interviews. Interviews will be scheduled with up to five firms. The successful candidate will clearly present verifiable qualifications, experience and knowledge regarding all aspects of Pedestrian, Stormwater Drainage, and Municipal Public Facility Planning, including but not limited to relevant Federal and Connecticut law, policies and guidelines, relevant CT and Federal Administrative rules.

Qualification will be rated with the following criteria:

1. Past experience
2. Project understanding
3. References
4. Firm/Team Qualifications
5. Knowledge of State and Local, Laws Regulations and Procedures.
6. Knowledge of Community Investment Fund funding source requirements and regulations.
7. Ability to meet proposed project schedule.
8. Expense Schedule.
9. Other criteria as determined by the interview panel

Weighting criteria will be determined by the panel.

1.7 Borough of Naugatuck's Reservation of Rights

The Borough of Naugatuck reserves the right to select one or more contractors for various tasks as described herein and to negotiate various contracts with the most technically qualified consultant for each task.

The Borough also reserves the right to negotiate a contract with the most technically qualified consultant provided that their performance records are acceptable and the

negotiated cost for services is fair and reasonable, considering the estimated value, scope, complexity and professional nature of the services to be rendered.

The Borough of Naugatuck reserves the right to waive any informalities or to reject any or all Submissions. The Borough of Naugatuck reserves the right to reject any submissions if they show any omission, alteration of form, additions not called for, conditional submissions, or irregularities of any kind. The Borough of Naugatuck reserves the right to reject any or all submissions or to accept any submissions, should it deem it to be in the best interest of the Borough.

1.8 Reimbursement for Costs

It is the responsibility of the respondents to pay for all costs associated with submitting qualifications and submissions. The Borough of Naugatuck shall not reimburse any costs.

1.9 Insurance Requirements

Before execution of the Contract, the Consultant will be required to file with the Borough of Naugatuck a certificate of insurance. The certificate, executed by an insurance company satisfactory to the Borough of Naugatuck shall name the Borough of Naugatuck, the State of Connecticut, and State of Connecticut Department of Community Development as additional insured parties on the form furnished with these specifications. The "Certificate of Insurance" shall state that at a minimum, with respect to the contract, the Consultant carries insurance in accordance with the requirements and stipulations as exemplified in the attached standard insurance agreement. The coverage amounts and required insurances shall be identical to that of the standard insurance agreement hereto attached and will include but is not limited to, workmen's compensation insurance, automobile liability insurance, professional errors and omission.

Insurance Requirements shall be in alignment with the State of Connecticut and CT Department of Economic and Community Development requirements, as required by the grant funding source.

a. Unless requested otherwise by the Borough of Naugatuck, the Consultant and its insurer shall not assert the defense of governmental immunity in the adjustment of claims or in the defense of any claim or suit brought against the Borough of Naugatuck, or the State of Connecticut The Consultant shall assume and pay all cost and billing for premiums and audit charges earned and payable under the required insurance.

b. Termination or change of Insurance: Each insurance policy shall be endorsed to provide that the insurance company shall notify the Borough of Naugatuck by certified mail at least thirty (30) days in advance of termination, or any change in the policy. No such change shall be made without prior written approval of the appropriate Officials.

c. Claims: Each insurance policy shall state that the insurance company shall agree to

investigate and defend the Borough of Naugatuck, State of Connecticut, and CT DECD against all damages, even if groundless.

d. Compensation: There shall be no direct compensation allowed for any premium or other change necessary to take out and keep in effect all insurance or bonds, but the cost thereof shall be considered included in the general cost of the work.

1.10 Signature Requirements

Submissions must be signed by a duly authorized official of the firm. Consortiums, joint ventures, or teams submitting an RFQ will not be considered unless it is established that all contractual responsibility rests solely with one consultant or one legal entity, which shall not be a subsidiary or affiliate with limited resources. Each submission should indicate the entity responsible for execution on behalf of the team.

1.11 Attachments

A. Certificate of Non-Collusion
B. Naugatuck Vendor form
C. Naugatuck Standard Insurance Agreement
D. Grant Application and Assistance Agreement
E. Exhibits to Grant Application
F. Previous Stormwater Drainage Information (Nettleton Neighborhood)
G. Maps

SECTION 2 QUALIFICATIONS SUBMISSION

2. Statement of Interest

Consultants shall submit a one-page maximum cover letter/letter of interest followed by a table of Contents. Any exceptions to the submission shall be disclosed in the cover letter. The letter shall be addressed to:

James R. Stewart P.E. & L.S.
Director of Public Works
229 Church Street
Naugatuck Ct, 06770
(203) 720-7071
jstewart@naugauck-ct.gov

2.1 Prime Firm/Company

Consultants shall submit a brief response to the following items:

a. Firm History
b. Leadership

c. Location(s)
d. Philosophy
e. Resumes
f. Services Provided

2.2 Project Team

a. Organizational Chart
b. Consultant/Sub firm Profiles
c. Consultant/Sub Resumes
d. Team Experience Matrix (Who on the team has worked together on what projects?)
e. Project Team Management Approach

2.3 Representative Projects

The consultants shall provide information on representative projects active within the last 5 years. The maximum number of projects submitted shall be Five (5). Representative projects shall be relevant as to project type, size, cost or Team.

2.4 References

The consultants shall provide a list of references for the representative projects listed in Section 2.3

2.5 Best Practices

a. Project approach

2.6 Firms/Teams Availability to Provide Service

The consultants shall provide a statement that the Project Team provided in Section 2.3 will be utilized for the project. Any change in team members shall be subject to the approval of the Borough of Naugatuck.

2.7 Licenses & Certifications

The consultant shall provide copies of all applicable licenses and certifications.

2.8 Litigation Statement

a. Provide details of all past of pending litigation of claims filed against your company that would affect your company's performance under a contract with the Borough of Naugatuck.

b. Provide a claims history under professional malpractice insurance for the past five

(5) years of the Prime Firm and any team members proposed.

2.9 Financial Statement

a. Provide details concerning any current default on any loan agreement or financing agreement with any bank financial institution, or other entity.

2.10 Expense Schedule

a. Provide an hourly rate (by position) and expense schedule.
b. Cost proposals for work will be requested from firms selected for interviews. The selection committee reserves the right to request each firm to substantiate its fee proposal during the interview process.

SECTION 3 FORMAT FOR SUBMISSION

3. Format

3.1 Packages shall follow the format provided in Section 2. Tabs or dividers shall be used to separate sections of the report.

3.2 Five (5) original hard copies of the submission and one digital copy in a .pdf format must be submitted; no fax or email submissions will be accepted.

ATTACHMENT A

CERTIFICATE OF NON-COLLUSION

The undersigned certifies under penalties of perjury that this request for qualification submission has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business, partnership, corporation, union, committee, club, or other organization, entity, or group of individuals.

_____ _____/_____/_____
Signature Date

_____
Printed Name of Person Signing Submission

_____
Name of Business

ATTACHMENT B

Naugatuck Vendor Form

BOROUGH OF NAUGATUCK
229 Church Street
Naugatuck, CT 06770

VENDOR APPLICATION FORM

VENDOR INFORMATION

COMPANY / FIRM NAME as shown on Federal Tax Return	**VENDOR ID.** If applicable
ALTERNATE NAME if applicable/(doing business as)	**TAX ID NUMBER** FEIN OR SSN

VENDOR ADDRESS
PAYMENT ADDRESS if different from above
PO MAILING ADDRESS if different from above

PHONE	**FAX**	**WEBSITE**
POINT OF CONTACT FOR SALES - NAME & TITLE		**POINT OF CONTACT EMAIL**

ORGANIZATION TYPE (Please submit completed W9)

	C Corporation		Individual/Sole Proprietor or Single Member LLC		Trust/estate
	S Corporation		Partnership		Limited Liability Company. (C=Corp, S=S Corp, P=Partnership
	Other				

VENDOR TYPE				
	SERVICE		Type of Service	
	PRODUCT		Type of Product	
	BOTH			

SERVICE VENDORS

Where will the Service be performed: ____ Borough Property ____ Vendor's location

Is a State License required to perfom work in the State of Connecticut? If Yes: ____ YES ____ NO

Type of License for Business: (Electrical, Mechanical, HVAC, etc.)

Credential Number (also provide a copy of current license)

**Also provide individual license copy for employees performing work onsite(i.e. Electrical license, HVAC, etc)

NOTE: Service Vendors require a COI to be sumitted to Purchasing, as well as a signed Insurance Agreement

DEPARMENT USE ONLY

Expected Annual Purchase $$ _____

Anticipated Purchase Authority _____ (reason for adding vendor)

Which line item from your GL will this Vendor fall under? _____

Will we be processing payments for this Vendor? ____ YES ____ NO

Documents obtained: _____ W9 _____ COI _____ Signed Insurance Agreement

ATTACHMENT C

Naugatuck Standard Insurance Agreement

ASSISTANCE AGREEMENT BY AND BETWEEN

THE STATE OF CONNECTICUT

ACTING BY THE DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT

(An Equal Opportunity Employer)

AND

THE BOROUGH OF NAUGATUCK

RE: Rubber Avenue Revitalization Project

This **ASSISTANCE AGREEMENT** (the "**Agreement**" or "**Contract**") is made and entered into by and between the **STATE OF CONNECTICUT**, (hereinafter the "**State**"), acting herein by the Commissioner of the Department of Economic and Community Development (hereinafter the "**Commissioner**"), pursuant to the Community Investment Fund 2030 Act, Section 32-285a of the Connecticut General Statutes ("**C.G.S.**") and the **BOROUGH OF NAUGATUCK** (hereinafter the "**Applicant**" or "**Contractor**") acting herein by N. Warren "Pete" Hess III, its duly authorized Mayor.

WITNESSETH:

WHEREAS, the governing body of the Applicant has submitted to the State a Community Investment Fund Application and series of documents, including an acceptance letter in response to a Financial Assistance Proposal submitted to it by the Commissioner dated March 5, 2025 (the "**Commissioner's Proposal**"), an Application for Financial Assistance, a certified resolution from the Applicant's appropriate organizational body authorizing the Applicant to submit said Application, a Project Financing Plan and Budget, and exhibits, if any, (all, together with this Agreement, hereinafter the "**Project Documents**" and attached hereto as **Exhibit A**) and has caused to have submitted an Opinion of Counsel and other documents for a project entitled "*Rubber Avenue Revitalization Project*" (hereinafter the "**Project**") and has represented to the State that it can rely upon the information within the Project Documents as being accurate and complete; and

WHEREAS, in reliance upon the information submitted by or caused to be submitted by the Applicant, the State has approved funding for the Project; and

WHEREAS, the State and the Applicant desire to define the terms and conditions upon which such financial assistance will be made available to the Applicant.

NOW THEREFORE, in consideration of the mutual promises of the parties hereto, and of the mutual benefits to be gained by the performance thereof, the State and the Applicant hereby agree as follows:

ARTICLE 1 - STATE OBLIGATIONS

1.1 Financial Assistance. The State hereby agrees, subject to the terms of this Agreement and its Exhibits, attached hereto and incorporated into this Agreement, and in reliance upon the facts and representations set forth in the Project Documents, to provide financial assistance to the Applicant for the Project in the form of a Community Investment Fund Grant in an amount not to exceed FIVE MILLION SEVEN HUNDRED FIFTY FOUR THOUSAND FOUR HUNDRED NINETY THREE AND NO/100 DOLLARS (**$5,754,493.00**) (hereinafter, the "**Funding**").

ARTICLE 2 - APPLICANT WARRANTIES, COVENANTS, AND OBLIGATIONS

The Applicant represents, warrants and covenants as follows, and further covenants that on and after the closing and for so long as this Agreement or any clause thereof shall remain in effect:

2.1 Form of Business Entity. The Applicant is a municipal corporation duly created and validly existing under the laws of the State of Connecticut. Further, the Applicant will preserve and maintain its existence as a municipal corporation, duly organized, validly existing, and in good standing under the laws of Connecticut.

2.2 Ability to Conduct Business. The Applicant has all franchises, permits, licenses, and other similar authorizations necessary for the conduct of its business as now being conducted by it, and it is not aware of any state of facts that would make it impossible or impractical to obtain any similar authorization necessary for the conduct of its business as planned to be conducted. The Applicant is not in violation, nor will the transactions contemplated by this Agreement or other Project Documents to which it is a party, cause a violation of the terms or provisions of any such franchise, permit, license, or similar authorization.

2.3 Authorization to Enter into and Execute Documents. The execution and delivery of this Agreement by the Applicant, and the performance of its obligations thereunder, are within its power, have been duly authorized by all necessary action on its part, and are not in contravention of law nor in contravention of its organizational documents or governing bylaws, including its charter, or of the provisions of any indenture, agreement, or undertaking to which it is a party or by which it is bound.

2.4 Other Authorization Unnecessary. No consent, license, or approval from any governmental authority is or will be necessary for the valid execution and delivery by the Applicant of the Agreement. The Applicant agrees that nothing in the Agreement relieves it from any obligation under law to obtain any such license, consent, or approval.

2.5 Agreement to Undertake Project. The Applicant agrees to undertake and complete the Project as described in the Commissioner's Proposal and the Project Documents, attached hereto as **Exhibit A**.

2.6 Obstacles to Entering and Executing Project.

(A) Existing Suit or Other Action. There is no action, suit, proceeding or investigation at law, in equity, or before any court, public board, arbitrator, or body, pending or, to the Applicant's knowledge, threatened against or affecting it, which could or might adversely affect

the Project, the State's security as described in Section 2.20 below, any of the transactions contemplated by the Project Documents, the validity of the Project Documents, or the Applicant's ability to discharge its obligations under the Project Documents.

(B) Default of Existing Orders or Instruments. The Applicant is not in default beyond any applicable notice and grace periods with respect to any order of any court, arbitrator, or governmental body which could or might adversely affect the Project, the State's security as described in Section 2.20 below, or any of the transactions contemplated by the Project Documents or the validity of the Project Documents, or the Applicant's ability to discharge its obligations under the Project Documents. In addition, the Applicant is not in default beyond any applicable notice and grace periods in the performance, observance or fulfillment of any of the terms, obligations, covenants, conditions, or provisions contained in any agreement or instrument to which the Applicant is a party or to which its property is subject, which default, together with all such defaults, singularly or in the aggregate, may have a materially adverse effect on the business, assets, liabilities, financial condition, results of operations or business prospects of the Applicant.

(C) Instance of Default. No Instance of Default (as defined in Section 4.1 hereof) has occurred or is continuing, and the Applicant has no knowledge of any currently existing facts or circumstances which, with the passage of time or the giving of notice, or both, would constitute an Instance of Default.

2.7 Material Adverse Change.

(A) Financial Condition. There has been no material adverse change in the financial condition of the Applicant since the date of application for the Funding that has not been previously disclosed in writing to the Commissioner.

(B) Representations in Documents. All financial statements, including, without limitation, balance sheets and profit and loss statements, delivered to the Commissioner are correct and complete, and fairly present the financial position and results of operations of the Applicant at the times of and for the periods reflected by such financial statements. The financial statements and all other written statements furnished by the Applicant in connection with the Funding do not contain any untrue statement of material fact and do not omit any material fact whose omission would make the statements contained therein or herein misleading.

(C) Other Facts. There is nothing which the Applicant has not disclosed to the Commissioner in writing, which writing, if any, is attached hereto as **Exhibit B**, which materially and adversely affects or, as far as the Applicant can reasonably foresee, is reasonably likely to prove to affect materially and adversely the business, operations, properties, prospects, profits, or condition of the Applicant. Further, the Applicant will notify the Commissioner, in writing, promptly of any material adverse change in the financial condition or business prospects of the Applicant.

(D) Lien and Claim Reporting. If applicable, the Applicant shall disclose in writing to the DECD, no later than ten (10) calendar days after becoming aware of or after the Applicant should have become aware of, to the best of the Applicant's knowledge, any actions, suits, claims, demands, investigations, liens, and proceedings of any kind, open, pending, or threatened,

whether mature, un-matured, contingent, at law or in equity in any forum, involving the Applicant that might reasonably be expected to materially adversely affect its businesses, operations, assets, properties, financial stability, business prospects or ability to perform the project as described in the Commissioner's Proposal.

2.8 Use of State Funding. The Funding shall be used for the Project as set forth in the Commissioner's Proposal and in accordance with the most recently approved Project Financing Plan and Budget. The Funding shall be used for that purpose and for no other purpose.

(A) Additional Costs Above Funding. Any amount in excess of the amount of the Funding that may be necessary to cover the cost of the Project as set forth in the most recently approved Project Financing Plan and Budget shall be the responsibility of the Applicant and shall not be covered by the Funding. The Applicant shall, as a minimum, provide the level and sources of funding as indicated in the Project Documents, and shall expend those funds in accordance with the Project Financing Plan and Budget (**Exhibit A**).

(B) Budget. The Project Financing Plan and Budget most recently approved by the Commissioner shall constitute the budget for the Project. The Project Financing Plan and Budget may be amended by request of the Applicant if such request is approved in writing by the Commissioner. Approval by the Commissioner of any revised Project Financing Plan and Budget shall not constitute or imply a revision of the amount of the Funding.

2.9 Payment of Other Obligations. The Applicant will pay and discharge promptly when due and payable all taxes, assessments and governmental charges levied or imposed upon it, its property, or any part thereof, or upon its income or profits, or any part thereof, as well as all lawful claims for labor, materials and supplies, which, if unpaid, might by law become a lien or charge upon its property, provided that such charges need not be paid while being contested by the Applicant in good faith and by appropriate legal proceedings so long as adequate book reserves have been established with respect thereto and the Applicant's title to, and its right to use, its property is not materially and adversely affected thereby. The Applicant also agrees to pay all taxes or duties levied or assessed upon said sum against the State, or the obligation evidenced hereby and to pay all costs, expenses, and attorneys' reasonable fees incurred by the State in any proceeding for the collection of the obligations evidenced hereby upon the happening of an Instance of Default as provided for in the Project Documents or in any litigation or controversy arising from or connected with the Project Documents.

2.10 Indemnification. For purposes of this Agreement, "Claims" means all actions, suits, claims, demands, investigations and proceedings of any kind, open, pending or threatened, whether mature, unmatured, contingent, known or unknown, at law or in equity, in any forum. "Records" means all working papers and such other information and materials as may have been accumulated by the Applicant in performing the Agreement, including but not limited to, documents, data, plans, books, computations, drawings, specifications, notes, reports, records, estimates, summaries and correspondence, kept or stored in any form. "Goods" means all things which are movable at the time that the Agreement is effective and which includes, without limiting this definition, supplies, materials and equipment.

(A) The Applicant shall indemnify, defend and hold harmless the State and its officers, representatives, agents, servants, employees, successors and assigns from and against any and all (1) Claims arising, directly or indirectly, in connection with the Agreement, including the acts of commission or omission (collectively, the "Acts") of the Applicant or Applicant Parties; and (2) liabilities, damages, losses, costs and expenses, including but not limited to, attorneys' and other professionals' fees, arising, directly or indirectly, in connection with Claims, Acts, or the Agreement. The Applicant shall use counsel reasonably acceptable to the State in carrying out its obligations under this Section. The Applicant's obligations under this Section to indemnify, defend and hold harmless against Claims includes Claims concerning (i) the confidentiality of any part of or all the Applicant's bid or proposal, and (ii) Records, intellectual property rights, other proprietary rights of any person or entity, copyrighted or uncopyrighted compositions, secret processes, patented or unpatented inventions, or Goods furnished or used in the performance of the Agreement.

(B) The Applicant shall not be responsible for indemnifying or holding the State harmless from any liability solely from the negligence of the State or any other person or entity acting under the direct control or supervision of the State.

(C) The Applicant shall reimburse the State for any and all damages to the real or personal property of the State caused by the Acts of the Applicant or any Applicant Parties. The State shall give the Applicant reasonable notice of any such Claims.

(D) The Applicant's duties under this Section shall remain fully in effect and binding in accordance with the terms and conditions of the Agreement, without being lessened or compromised in any way, even where the Applicant is alleged or is found to have merely contributed in part to the Acts giving rise to the Claims and/or where the State is alleged or is found to have merely contributed in part to the Acts giving rise to the Claims.

(E) The Applicant shall carry or maintain at all times during the term of the Agreement, and during the time that any provisions survive the term of the Agreement, either (a) sufficient general liability insurance or (b) sufficient financial capacity to self-insure, to satisfy its obligations under this Agreement, including its obligation to indemnify, defend, and hold harmless under this Section 2.10. If the Applicant is not self-insured it shall cause the State to be named as an additional insured on the policy and shall provide (1) a certificate of insurance, (2) the declaration page and (3) the additional insured endorsement to the policy to Connecticut Department of Economic and Community Development ("DECD") all in an electronic format acceptable to DECD prior to the Effective Date of the Agreement evidencing that the State is an additional insured. The Applicant shall not begin performance until the delivery of these three (3) documents to DECD. Applicant shall provide an annual electronic update of the three (3) documents to DECD on or before each anniversary of the Effective Date during the Agreement term. State shall be entitled to recover under the insurance policy even if a body of competent jurisdiction determines that State is contributorily negligent.

(F) The Applicant hereby agrees to indemnify and hold harmless the State from and against any liabilities, losses, damages, costs, or expenses, including attorneys' fees, arising out of or in connection with the presence of hazardous waste relating to the Project, or any lien or claim under C.G.S. § 22a-452a, as amended, or other federal, state, or municipal statute, regulation, rule, law, or proceeding relating to environmental matters. Such indemnity shall survive payment in full

of the Funding, and termination and/or release of the Project Documents and/or foreclosure of the Mortgage or realization on the Collateral (if any).

(G) This Section shall survive the Termination of the Agreement and shall not be limited by reason of any insurance coverage.

(H) For purposes of this Agreement, "Applicant Party", "Applicant Parties", "Contractor Party", or "Contractor Parties" shall mean an Applicant's members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Applicant is in privity of oral or written contract (e.g. subcontractor) and the Applicant intends for such other person or entity to perform under the Agreement in any capacity. For the purpose of this Agreement, vendors of support services, not otherwise known as human service providers or educators, shall not be considered subcontractors, *e.g.*, lawn care, unless such activity is considered part of a training, vocational or educational program.

2.11 Compliance with Laws, Regulations, Rules, and Executive Orders. In the administration and execution of the project, the Applicant shall comply with all applicable State and Federal laws and municipal ordinances in satisfying their obligations to the state under and pursuant to the agreement, including, but not limited to, (1) Connecticut General Statutes Title 1, Chapter 10, concerning the State's Codes of Ethics and (2) Title 4a concerning State purchasing, including, but not limited to Section 22a-194a concerning the use of polystyrene foam.

2.12 Non-discrimination.

(A) For purposes of this Section, the following terms are defined as follows:

(1) "Commission" means the Commission on Human Rights and Opportunities;

(2) "Contract" and "contract" include any extension or modification of the Contract or contract;

(3) "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor;

(4) "Gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose.

(5) "Good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;

(6) "Good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements;

(7) "Marital status" means being single, married as recognized by the State of Connecticut, widowed, separated or divorced;

(8) "Mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders;

(9) "Minority business enterprise" means any small contractor or supplier of materials fifty-one percent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a minority, as such term is defined in subsection (a) of C.G.S. § 32-9n; and

(10) "Public works contract" means any agreement between any individual, firm or corporation and the State or any political subdivision of the State other than a municipality for construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in part by the State, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

For purposes of this Section, the terms "Contract" and "contract" do not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, unless the contract is a municipal public works contract or quasi-public agency project contract, (2) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in C.G.S. § 1-267, (3) the federal government, (4) a foreign government, or (5) an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), or (4).

(B)

(1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, status as a veteran, status as a victim of domestic violence, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Contractor further agrees to take affirmative action to ensure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, status as a veteran, status as a victim of domestic violence, intellectual

disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by the Contractor that such disability prevents performance of the work involved.

(2) The Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission.

(3) The Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which the Contractor has a contract or understanding, a notice to be provided by the Commission, advising the labor union or workers' representative of the Contractor's commitments under this Section and to post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The Contractor agrees to comply with each provision of this Section and C.G.S. §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to C.G.S. §§ 46a-56, 46a-68e and 46a-68f. and

(5) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this Section and C.G.S. § 46a-56. If the contract is a public works contract, municipal public works contract or contract for a quasi-public agency project, the Contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

(C) Determination of the Contractor's good faith efforts shall include, but shall not be limited to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.

(D) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.

(E) The Contractor shall include the provisions of subsection (B) of this Section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and in every subcontract entered into in order to fulfill any obligation or a municipal public works contract for a quasi-public agency project, and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with C.G.S. § 46a-56, as amended; provided if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission regarding a State contract, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

(F) The Contractor agrees to comply with the regulations referred to in this Section as they exist on the date of this Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.

(G)

(1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation;

(2) The Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the Contractor's commitments under this Section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(3) The Contractor agrees to comply with each provision of this Section and with each regulation or relevant order issued by said Commission pursuant to C.G.S. § 46a-56; and

(4) The Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor which relate to the provisions of this Section and C.G.S. § 46a-56.

(H) The Contractor shall include the provisions of the foregoing paragraph in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with C.G.S. § 46a-56, as amended; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission regarding a State contract, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

(I) Pursuant to subsection (c) of section 4a-60 and subsection (b) of section 4a-60a of the Connecticut General Statutes, the Contractor, for itself and its authorized signatory of this Contract, affirms that it understands the obligations of this Section and that it will maintain a policy for the duration of the Contract to assure that the Contract will be performed in compliance with the nondiscrimination requirements of such sections. The Contractor and its authorized signatory of this Contract demonstrate their understanding of this obligation by (A) having provided an affirmative response in the required online bid or response to a proposal question which asks if the contractor

understands its obligations under such sections, (B) signing this Contract or, (C) initialing this nondiscrimination affirmation in the following box: ☐

2.13 Freedom of Information.

(A) Confidential Information. The DECD will afford due regard to the Applicant's request for the protection of proprietary or confidential information which the DECD receives. However, all materials associated with the Agreement are subject to the terms of the Connecticut Freedom of Information Act ("FOIA") and all corresponding rules, regulations and interpretations. In making such a request, the Applicant may not merely state generally that the materials are proprietary or confidential in nature and not, therefore, subject to release to third parties. Those particular sentences, paragraphs, pages or sections that the Applicant believes are exempt from disclosure under the FOIA must be specifically identified as such. Convincing explanation and rationale sufficient to justify each exemption consistent with the FOIA must accompany the request. The rationale and explanation must be stated in terms of the prospective harm to the competitive position of the Applicant that would result if the identified material were to be released and the reasons why the materials are legally exempt from release pursuant to the FOIA. To the extent that any other provision or part of the Agreement, the Records and the specifications, conflicts or is in any way inconsistent with this Section, this Section controls and shall apply and the conflicting provision or part shall not be given effect. If the Applicant indicates that certain documentation is submitted in confidence, by specifically and clearly marking said documentation as "CONFIDENTIAL", the DECD will endeavor to keep said information confidential to the extent permitted by law. The DECD, however, has no obligation to initiate, prosecute or defend any legal proceeding or to seek a protective order or other similar relief to prevent disclosure of any information that is sought pursuant to a FOIA request. The Applicant shall have the burden of establishing the availability of any FOIA exemption in any proceeding where it is an issue. In no event shall the DECD or the State have any liability for the disclosure of any documents or information in its possession which the DECD believes are required to be disclosed pursuant to the FOIA or other requirements of law.

(B) Disclosure of Records. This Agreement may be subject to the provisions of Section 1-218 of the Connecticut General Statutes. In accordance with this statute, each contract in excess of two million five hundred thousand dollars between a public agency and a person for the performance of a governmental function shall (a) provide that the public agency is entitled to receive a copy of records and files related to the performance of the governmental function, and (b) indicate that such records and files are subject to FOIA and may be disclosed by the public agency pursuant to FOIA. No request to inspect or copy such records or files shall be valid unless the request is made to the public agency in accordance with FOIA. Any complaint by a person who is denied the right to inspect or copy such records or files shall be brought to the Freedom of Information Commission in accordance with the provisions of Sections 1-205 and 1-206 of the Connecticut General Statutes.

2.14 Whistleblowing. This Agreement may be subject to the provisions of Section 4-61dd of the Connecticut General Statutes if the amount of this Agreement is a "large state contract" as that term is defined in such statute. In accordance with this statute, if an officer, employee or appointing authority of the Applicant takes or threatens to take any personnel action against any employee of the Applicant in retaliation for such employee's disclosure of information to any employee of the contracting state or quasi-public agency or the Auditors of Public Accounts or the

Attorney General under the provisions of such statute, the Applicant shall be liable for a civil penalty of not more than five thousand dollars ($5,000) for each offense, up to a maximum of twenty percent (20%) of the value of this Agreement. Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The State may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with such statute, each large state contractor, as defined in the statute, shall post a notice of relevant sections of the statute relating to large state contractors in a conspicuous place which is readily available for viewing by the employees of the Applicant.

2.15 Executive Orders and Other Enactments.

(A) All references in this Agreement to any Federal, State, or local law, statute, public or special act, executive order, ordinance, regulation or code (collectively, "Enactments") shall mean Enactments that apply to the Agreement at any time during its term, or that may be made applicable to the Agreement during its term. This Agreement shall always be read and interpreted in accordance with the latest applicable wording and requirements of the Enactments. Unless otherwise provided by Enactments, the Applicant is not relieved of its obligation to perform under this Agreement if it chooses to contest the applicability of the Enactments or the DECD'S authority to require compliance with the Enactments.

(B) This Agreement is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of this Agreement as if they had been fully set forth in it.

(C) This Agreement may be subject to (1) Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services; and (2) Executive Order No. 61 of Governor Dannel P. Malloy promulgated December 13, 2017 concerning the Policy for the Management of State Information Technology Projects, as issued by the Office of Policy and Management, Policy ID IT-SDLC-17-04. If any of the Executive Orders referenced in this subsection is applicable, it is deemed to be incorporated into and made a part of this Agreement as if fully set forth in it.

2.16 Other Debt. The Applicant will not, either directly or indirectly, guarantee, endorse, become surety for, or otherwise be or become responsible for the obligations of any other person, whether by agreement to purchase the indebtedness of any other person, or agreement for the furnishing of funds to any other person, directly or indirectly, through the purchase of goods, supplies, (or by way of stock purchase, capital contribution, advance or loan) or for the purpose of paying or discharging the indebtedness of any other person or otherwise, except for the endorsement by the Applicant of negotiable instruments for collection in the ordinary course of business without the written consent of the Commissioner.

2.17 Conflict of Interest. The Applicant will adopt and enforce measures appropriate to assure that no member of the Applicant's governing bodies and none of its officers or employees

shall have or acquire voluntarily an interest in any agreement or proposed agreement in connection with the undertaking or carrying out of the Project.

2.18 Notification of Instance of Default by Applicant. The Applicant shall notify the Commissioner promptly of the occurrence of any default hereunder or under any of the other Project Documents, or any other document, instrument or agreement to which the Applicant or its properties are subject and of the actions it intends to take in order to cure such default in a timely manner.

2.19 Representations in Other Documents. All statements contained in its Community Investment Fund Application and any certificate, financial statement, Project budget, legal opinion or any other instrument delivered by or on behalf of the Applicant pursuant to or in connection with this Agreement shall constitute representations and warranties made under this Agreement. All representations and warranties made under this Agreement shall be made at and as of the date of this Agreement, and at and as of the date of receipt of the Funding. All representations and warranties made under this Agreement shall survive the execution and delivery hereof and shall not be deemed to have been waived by any investigation made or not made by the State. The Project Documents to which the Applicant is a party, when delivered, will be legal, valid, and binding obligations of the Applicant, enforceable against it in accordance with their respective terms (**Exhibit A**).

2.20 The Applicant shall provide to the State as security for the Applicant's Project obligations a non-recourse mortgage of real property known as 34 Andrew Avenue, Naugatuck, CT (the "**Mortgaged Property**") pursuant to a mortgage executed of even date herewith (known herein as the "**Mortgage**") (hereinafter the "**Collateral**"). DECD shall release the Mortgage when DECD has determined in its sole judgment that the Applicant has completed the Project as described in the Commissioner's Proposal by June 7, 2034. If the Project is not completed by June 7, 2034, DECD may foreclose the Mortgage but not seek a deficiency judgment. The Mortgage may be subordinated to the lien of a lender or other entities providing financing for the development of the Mortgaged Property. Completion of the Project shall be demonstrated by (1) an affidavit from an architect or engineer stating that design and engineering documents for the combined DPW/Ambulance building are complete, and (2) an affidavit from a qualified engineer that the sidewalks and drainage projects are complete. The Mortgage may be assumed by a third party with the Commissioner's consent. An assumption of the Mortgage shall not release the Applicant from its obligations under this herein Agreement.

The Applicant shall provide to DECD copies of any and all environmental site assessment reports that have been obtained concerning the Mortgaged Property, as applicable. The Applicant shall also provide satisfactory evidence to DECD that all required remediation work on the Mortgaged Property has been properly completed, if applicable.

An environmental indemnification agreement executed by the Applicant in favor of the DECD shall be required.

2.21 Negative Pledge. The Applicant agrees that it will execute a Negative Pledge and Agreement ("**Negative Pledge**") in a form acceptable to the Commissioner, which Negative Pledge shall provide that the Applicant shall not sell, lease, transfer, assign, or in any way encumber or otherwise dispose of the Mortgaged Property, in whole or in part, without first obtaining the written

consent of the Commissioner for a term of ten (10) years. The Negative Pledge shall be recorded on the Naugatuck land records by Applicant upon its execution.

2.22 Use Restriction. The Applicant covenants and agrees that the Mortgaged Property shall be used for the support of Public Works and Emergency Services and may continue to be used as a recycling facility for a term of ten (10) years. Applicant agrees that it shall execute a Declaration of Restrictive Covenant (the "**Covenant**") in a form acceptable to the Commissioner, which shall be filed on the land records of the Borough of Naugatuck by Applicant. The Covenant shall be enforceable by the State and shall provide that any conveyance of the Mortgaged Property shall be subject to the terms of the Covenant.

2.23 Prevailing Wage. The following provision shall be contained in any contract for construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair entered into by the Applicant for the Project in accordance with C.G.S §31-53 of the Connecticut General Statutes:

The Applicant will comply with C.G.S §31-53, as may be amended, which requires that any contract entered into by the Applicant for the project shall contain the following provision:

> "The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in Subsection (i) of C.G.S. §31-53, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the town in which such public works project is being constructed. Any contractor who is not obligated by agreement to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer, or worker as part of such person's wages the amount of payment or contribution for such person's classification on each pay day."

Further, the Applicant shall keep records satisfactory to DECD and hold DECD harmless in any disputes regarding C.G.S. §31-53.

ARTICLE 3 - PROJECT ADMINISTRATION

3.1 Audit and Inspection of Plant, Places of Business and Records.

(A) The State and its agents, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents, or where applicable, federal agencies, may, at reasonable hours, inspect and examine all of the parts of the Applicant's and Applicant's Parties' plants and places of business which, in any way, are related to, or involved in, the performance of this Agreement. The Applicant shall comply with federal and state single audit standards as applicable.

(B) The Applicant shall maintain, and shall require each of the Applicant Parties to maintain, accurate and complete Records. The Applicant shall make all of its and the Applicant Parties' Records available at all reasonable hours for audit and inspection by the State and its agents.

(C) The State shall make all requests for any audit or inspection in writing and shall provide the Applicant with at least twenty-four (24) hours' notice prior to the requested audit and inspection date. If the State suspects fraud or other abuse, or in the event of an emergency, the State is not obligated to provide any prior notice.

(D) The Applicant will pay for all costs and expenses of any audit and inspection which reveals information that, in the sole determination of the State, is sufficient to constitute a breach by the Applicant under this Agreement. The Applicant will remit full payment to the State for such audit or inspection no later than thirty (30) days after receiving an invoice from the State.

(E) The Applicant shall keep and preserve or cause to be kept and preserved all of its and Applicant Parties' Records until three (3) years after the latter of (i) final payment under this Agreement, or (ii) the expiration or earlier termination of this Agreement, as the same may be modified for any reason. The State may request an audit or inspection at any time during this period. If any Claim or audit is started before the expiration of this period, the Applicant shall retain or cause to be retained all Records until all Claims or audit findings have been resolved.

(F) The Applicant shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct and the Applicant shall cooperate with an exit conference.

(G) The Applicant must incorporate this entire Section verbatim into any contract or other agreement it enters into with any Applicant Party.

(H) If Applicant is subject to a federal and/or state single audit must have an audit of its accounts performed annually. The audit shall be in accordance with the DECD Audit Guide, located at https://portal.ct.gov/-/media/DECD/OFR/DECD-Audit-Guide-January--2019.pdf and the requirements established by federal law and state statute. If Applicant is not subject to a federal and/or state single audit shall be subject to a Project-specific audit of its accounts within ninety (90) days of the completion of the Project or at such times as required by the Commissioner. Such audit shall be in accordance with the DECD Audit Guide. An independent public accountant as defined by generally accepted government auditing standards (GAGAS) shall conduct the audits. At the discretion and with the approval of the Commissioner, examiners from the DECD may conduct Project-specific audits.

3.2 Payment to Applicant. In order to permit the State to make payment to the Applicant with respect of the Funding, the Applicant agrees as follows:

(A) Office of the State Comptroller Electronic Fund Transfer Automated Clearing House ("ACH")(EFT) Program. Upon the execution of this Agreement, the Applicant shall provide current, verifiable bank account information for accounts with Applicant's bank to the Office of the State Comptroller ("OSC") by submitting a completed Electronic Funds Transfer ACH (EFT) Election Form, and such additional information as the OSC may require (https://www.osc.ct.gov/vendor/directdeposit.html).

(B) Requisition Form. In order to bring about the transfer of moneys to the account designated under subsection (A) above (the "Account"), the Applicant shall requisition funds on forms provided by the Commissioner and in the manner prescribed by this Agreement. Payment to the Applicant will be made based upon said requisition forms.

(C) Pre-agreement Costs. Unless authorized by the Commissioner in writing, no costs incurred before the start date of the most recently approved Project Financing Plan and Budget are eligible for payment from the Funding.

3.3 Subcontracts. Each Applicant Party's identity, services to be rendered and costs shall be detailed in this Agreement. Absent compliance with this requirement, no Applicant Party may be used or expense paid under this Agreement unless expressly otherwise provided in this Agreement. No Applicant Party shall acquire any direct right of payment from DECD by virtue of this Section or any other section of this Agreement. The use of Applicant Parties shall not relieve the Applicant of any responsibility or liability under this Agreement. The Applicant shall make available copies of all subcontracts to DECD upon request.

3.4 Repayment to State. (a) Any unspent Funding shall become immediately due and payable by the Applicant to the State within ninety (90) days of the end date of the most recently approved Project Financing Plan and Budget attached hereto as **Exhibit A**. (b) In the event that an audit referred to in Section 3.1 above demonstrates that the actual expenditures made by the Applicant in connection with the Project are less than the maximum allowable amounts for disbursement by the State, as set forth in Section 1.1 above, any such excess disbursement made by the State in respect of the Funding shall become immediately due and payable by the Applicant to the State.

3.5 Reports. The Applicant shall furnish an annual report not later than July 31 in each year for the duration of the Project. The annual report shall contain information addressing the following:

On an annual basis, the Applicant will provide the Project Manager with the following measurements, as laid out in their Community Investment Fund 2030 Round 4 Application:

- Increase in users of sidewalks in the Scott Street area from baseline of 10/day;
- Efficiency of drainage in the Nettleton area;
- Grand list growth created through sale of commercial spaces, taxes generated by such sale, sale revenue of commercial spaces;
- Number of ambulance calls responded to and number of people employed at the newly constructed DPW & Ambulance Building;
- Safety, security, crime rates in the neighborhood beginning in 2023;
- Additional private investment in the neighborhood beginning in 2023; and
- Vacancy rate of other business sites in the neighborhood

On an annual basis, the Applicant will provide the Project Manager with the following data based on either the Applicant's municipal level, or where available, neighborhood level data:

1. Public Investment Community Measures:

a. Per capita income;
b. Adjusted equalized net grand list per capita;
c. Mill rate;
d. Per capita aid to children receiving Temporary Family Assistance benefits; and
e. Unemployment rate

2. Alliance District Measures:
   a. Academic growth over time;
   b. Attendance;
   c. Chronic absenteeism;
   d. Postsecondary education and career readiness;
   e. Enrollment in institutions of higher education and postsecondary education programs;
   f. Graduation from institutions of higher education and postsecondary education programs;
   g. Civics and arts education; and
   h. Physical fitness
3. ALICE (Asset Limited Income Constrained Employed) and poverty levels

The Applicant acknowledges that the Community Investment Fund 2030 will continue to require annual reporting of data from the Applicant after the completion and close-out of the Project for five (5) years, in order to evaluate the impact of the Project and the Community Investment Fund 2030 program for accountability and reporting as required in the authorizing statute (§ 32-285a).

3.6 Project Financial Statements. The Applicant shall provide a cumulative Statement of Program Cost and a Detailed Schedule of Expenditures to the Commissioner in the approved DECD project statement format as outlined in the most current Accounting Manual located at https://portal.ct.gov/-/media/DECD/FinancialReview/edacctgmanualpdfrevjan2019-new.pdf?la=en This information will be required to be provided within ninety (90) days after the expiration date of the Project Financing Plan and Budget or earlier as determined by the Commissioner. Further information, such as supporting documentation (i.e. copies of invoices, cancelled checks, contracts etc.) for the expenditures charged may be requested from the Applicant, as necessary.

3.7 Personal Service Contracts. All Project cost items of personal service, except those to be performed by volunteers and those to be performed by employees of the Applicant who will not receive extra compensation for such service, shall be performed pursuant to a written contract, and the Applicant shall, upon request, provide the Commissioner with copies of all such contracts.

3.8 Project Progress Reporting. Upon request, the Applicant shall submit progress reports acceptable to the DECD. These reports shall delineate progress in the area of fundraising as well as construction of the Project. The reports shall be due April 30, July 31, October 31, and January 31 and, if requested, will be required to be provided until the expiration of the Project Financing Plan and Budget.

3.9 Inspections. The Commissioner shall from time to time, in her discretion, during regular business hours, have the right of making an inspection of the Mortgaged Property that is subject to any restriction under Sections 2.21 and 2.22 of this Agreement, and the Applicant shall assist the Commissioner in said inspection and shall make available such books and other Records as the Commissioner may reasonably request.

ARTICLE 4 - DEFAULT

4.1 Instances of Default. The occurrence of any of the following events shall constitute a default under this Agreement (an "**Instance of Default**"):

(A) Breach of Agreement. If the Applicant fails to perform any act, duty, or obligation set forth herein or in any other Project Document (**Exhibit A**) or fails to forebear from any unpermitted act, or if the Applicant abandons or terminates the Project, or takes such steps that such an abandonment or termination is imminent.

(B) Misrepresentation. If any representation or warranty made by the Applicant or caused to be made for the Applicant in any of the Project Documents (**Exhibit A**) prove at any time to be incorrect in any material respect.

(C) Unpaid Judgments. If a judgment or judgments for the payment of money shall be rendered against Applicant and any such judgment shall remain unpaid, unstayed on appeal, unbonded, undischarged or undismissed for a period of ninety (90) consecutive days.

(D) Receivership or Bankruptcy. If the Applicant shall: (i) apply for or consent to the appointment of a receiver, trustee or liquidator of all or a substantial part of any of its assets; (ii) be unable or admit in writing its inability to pay its debts as they mature; (iii) file or permit the filing of any petition or reorganization or the like under any insolvency or bankruptcy law, or the adjudication of it as a bankrupt, or make an assignment for the benefit of creditors or consent to any form of arrangement for the satisfaction, settlement or delay of debt or the appointment of a receiver for all or any part of its properties; or (iv) any action shall be taken by Applicant for the purpose of effecting any of the foregoing.

(E) Condemnation or Seizure. If any Federal, state or local governmental instrumentality, body or agency shall condemn, seize or otherwise appropriate, or take custody or control of all or any substantial portion of the properties or assets of Applicant.

(F) Lack of Adequate Security. If the State, at any time and in good faith, deems itself to be insecure. For the purposes of this Agreement, the State shall be entitled to deem itself insecure when some event occurs, fails to occur or is threatened or some objective condition exists or is threatened which materially impairs the prospects of the Applicant's business or which materially affects the financial condition or business operations of Applicant. Also included is the actual or threatened waste, removal, or demolition of, or material alteration to, any significant part of the Mortgaged Property.

(G) Violation of Terms in Other Project Documents. The occurrence of a default or violation under any of the attached Project Documents.

4.2 Events in Instances of Default.

(A) Notice of Default. If the Applicant defaults or shall commit or allow any breach of the Applicant's covenants, agreements and other obligations under this Agreement, material or otherwise, the Commissioner shall provide written notice of the breach ("Notice of Default") to the Applicant by overnight or certified mail, return receipt requested, to the most current address they furnished for the purposes of correspondence.

(B) Opportunity to Cure. The Commissioner may provide the Applicant thirty (30) days after the Notice of Default, or such longer period of time as the Commissioner may determine and set forth in writing, to cure or remedy the default or breach. Said cure or remedy will not be effective unless accepted, in writing, by the Commissioner. The Commissioner may determine that permitting an opportunity to cure a default could jeopardize the Project or would not be in the best interests of the State. Under those circumstances, no opportunity to cure need be given and the Commissioner may seek other remedies.

(C) Remedies. Upon the occurrence of an Instance of Default, the State, acting by the Commissioner, shall have, to the full extent permitted by law, each and all of the following remedies in addition to those provided for in other portions of this Agreement:

(1) To suspend all further payments by the State to the Applicant until such default is cured to the satisfaction of the Commissioner;

(2) To proceed to enforce the performance or observance of any obligations, agreements, or covenants of the Applicant in this Agreement or the Project Documents;

(3) To declare the entire amount of the Funding to be immediately due and payable and to bring any and all actions at law or in equity as may be necessary to enforce said obligation of repayment. In such Instances of Default, the Applicant hereby agrees to repay immediately the entire amount of the Funding received and liquidated damages equal to five percent (5%) of the total amount of the Funding received.

(4) The right to a writ of mandamus, injunction or similar relief against the Applicant or any or all of the members of the Applicant's governing body, or against the officers, agents or representatives of the Applicant, as may be appropriate, because of such default or breach;

(5) The right to maintain any and all actions at law or suits in equity, including receivership or other proper proceedings, to cure or remedy any defaults or breaches of covenants under this Agreement;

(6) The Applicant agrees that, upon an event of default or after a judgment hereon, all expenditures incurred by State under the Project Documents including the Funding shall bear interest at the rate of fifteen percent (15%) per annum from the date of demand, default or judgment as applicable.

(7) The State may collect costs associated with collection efforts as outlined in Section 2.9 of this Agreement.

ARTICLE 5 - MISCELLANEOUS PROVISIONS

5.1 Nonwaiver & Sovereign Immunity.

(A) If the State does not exercise, or delays in exercising, or exercises in part any of the State's rights and remedies set forth in this Agreement for the curing or remedying of any default or breach of covenant or condition, or any other right or remedy, in no event shall such non-exercise, delay or partial exercise be construed as a waiver of full action by the State or a waiver of any subsequent default or breach of covenant or condition.

(B) The parties acknowledge and agree that nothing in the Agreement shall be construed as a modification, compromise or waiver by the State of any rights or defenses of any immunities provided by Federal law or the laws of the State of Connecticut to the State or any of its officers and employees, which they may have had, now have or will have with respect to all matters arising out of the Agreement. To the extent that this section conflicts with any other Section, this Section shall govern.

5.2 Severability. If any term or provision of the Agreement or its application to any person, entity or circumstance shall, to any extent, be held to be invalid or unenforceable, the remainder of the Agreement or the application of such term or provision shall not be affected as to persons, entities or circumstances other than those as to whom or to which it is held to be invalid or unenforceable. Each remaining term and provision of the Agreement shall be valid and enforced to the fullest extent possible by law.

5.3 Agreement Date. This Agreement shall become effective on the latest of: (a) the date the Commissioner or his designee affixes his signature hereto, or (b) if applicable, the date the Attorney General or his designee affixes his signature hereto (the "**Effective Date**" or the "**Agreement Date**").

5.4 Counterparts; Electronic Signatures. This Agreement may be executed in counterparts, and all such executed counterparts shall constitute the same agreement. Transmittal of the signatures of the parties to this Agreement by email or facsimile shall be deemed as effective as an original signature thereon.

5.5 Multiple Applicants. If there is more than one Applicant, the obligations hereunder and under the Project Documents, shall be joint and several.

5.6 Notices. All notices, demands, requests, consents, approvals or other communications required or permitted to be given or which are given with respect to this Agreement (collectively, "Notices") are deemed to have been received two (2) days after the date that the notice is placed in the U.S. mail, first class and postage pre-paid, return receipt requested or one (1) day after the date sent if placed with a recognized, overnight express delivery service that provides for a return receipt. Any notice to the Applicant pursuant hereto or pursuant to any of the Project Documents may be served in person or by mail. Any such requirement shall be deemed met by any written notice personally served at the principal place of business of the Applicant, or at such other address as the Applicant shall notify the Commissioner, or mailed by depositing it in any post office station or letter box enclosed in a postage-paid envelope addressed to the Applicant at 229 Church Street, Naugatuck, CT 06770, or at such other address as provided above. Any notice to the State,

Department, or Commissioner shall be addressed to the Commissioner at 450 Columbus Blvd., Suite 5, Hartford CT 06103.

5.7 Waivers by Applicant. The Applicant and all others who may become liable for all or any part of this obligation do hereby waive demand, presentment for payment, protest, notice of protest and notice of non-payment of this Agreement and do hereby consent to any number of renewals or extensions of the time of payment hereof and agree that any such renewals or extensions may be made without notice to any of said parties and without affecting their liability herein and further consent to the release of any party or parties liable hereon, all without affecting the liability of the other persons, firms or corporations liable for the payment of this Agreement.

5.8 Headings, Number and Gender. The headings given to the sections in the Agreement are inserted only for convenience and are in no way to be construed as part of the Agreement or as a limitation of the scope of the particular section to which the heading refers. Whenever the context so requires, the plural or singular shall include each other and the use of any gender shall include all genders.

5.9 Amendments; Supremacy and Entirety of Agreement.

(A) No amendment to or modification of this Agreement shall be valid or binding unless made in writing, signed by the parties and approved by the Connecticut Attorney General. Any and all documents authorized in connection with this Agreement shall be subject to the terms of this Agreement. This Agreement contains the complete and exclusive statement of the terms agreed to by the parties.

(B) In the event that the Applicant seeks modification in the form of a consent or a subordination to financing required by the Applicant in its normal course of business, the Applicant shall request such modification in writing to the Commissioner not less than thirty (30) days prior to the date such modification is required. The Applicant shall promptly reimburse the State for expenses, including reasonable attorneys' fees, incurred in negotiating and entering into such modification.

5.10 Provision of Other Documents. Upon the request of the Commissioner, the Applicant shall execute and deliver or cause to be executed and delivered such further documents and instruments and do such further acts and things as the Commissioner may request in order to effectuate more fully the purposes of this Project, to secure more fully the payment of the Funding in accordance with its terms, and to vest more completely in and assure to the Commissioner its rights under the Project Documents. Without limiting the generality of the foregoing, the Applicant will join with the Commissioner in executing such financing statements, agreements, notices or other documents or instruments as the Commissioner shall deem necessary or desirable to create, preserve, protect, maintain or enforce its rights and interests in and its liens on the property of the Applicant. The Applicant shall pay the cost of filing and recording, or refiling and re-recording, such documents and instruments in all public offices in which such filing or recording, or refiling or re-recording, is deemed by the Commissioner to be necessary or desirable.

5.11 Assignment. The Applicant shall not assign any of its rights or obligations under the Agreement, voluntarily or otherwise, in any manner without the prior written consent of DECD and

the approval of the Connecticut Attorney General. DECD may void any purported assignment in violation of this Section and declare the Applicant in breach of Agreement. Any Termination by DECD for a breach is without prejudice to DECD's or the State's rights or possible Claims.

5.12 Survival of Representations, Warranties and Covenants. For the purposes of this Agreement, the term "Contractor" or "Applicant" shall mean and include any successor or assigns of Applicant including any representative of Applicant under the provisions of any state or Federal law governing bankruptcy, insolvency, receivership or reorganization. All warranties, representations and covenants made by the Applicant in this Agreement or in any certificate or instruments delivered to the State in connection with the Funding shall be considered to have been relied upon by the Commissioner and shall survive until the later of: (i) ten (10) years after receipt of the last installment of the Funding; or (ii) repayment in full of the Funding. This Agreement shall be binding upon and inure to the benefit of the successors and assigns of each of the parties; provided, however, that nothing in this provision shall imply that the Applicant has the right or authority to assign its rights, duties or obligations hereunder or under any of this Agreement without the written consent of the Commissioner.

5.13 Governing Documents. In the event of any conflict between this Agreement and any of the attached Project Documents (**Exhibit A**), this Agreement sans Exhibits shall be controlling.

5.14 Third Parties. This Agreement is between the State and the Applicant only and shall not be relied upon by any third party.

5.15 Forum and Choice of Law. The parties deem this Agreement to have been made in the City of Hartford, State of Connecticut. Both parties agree that it is fair and reasonable for the validity and construction of the Agreement to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by Federal law or the laws of the State of Connecticut do not bar an action against the State, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Applicant waives any objection which it may now have or will have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

5.16 Expiration or Termination of Agreement.

(A) The term of this Agreement shall expire upon the expiration of the Negative Pledge and Use Restriction referenced herein.

(B) Notwithstanding subsection (A) above, the Applicant may terminate this Agreement prior to the expiration of the Negative Pledge and Use Restriction so long as it makes full repayment of the Funding plus liquidated damages equal to seven and one-half percent (7.5%) of the total amount of the Funding received, plus all costs and expenses related thereto.

(C) This Agreement is subject to the availability of funding. In the event funding for the Project or underlying program is reduced or terminated, DECD may terminate this Agreement without penalty.

(D) Notwithstanding any provisions in this Agreement, DECD, through a duly authorized employee, may terminate this Agreement whenever DECD makes a written determination that such termination is in the best interests of the State. DECD shall notify the Applicant in writing of termination pursuant to this section, which notice shall specify the effective date of termination and the extent to which the Applicant must complete its performance under this Agreement prior to such date.

(E) This Agreement may also be terminated by the express written agreement of the Applicant and the State.

(F) Notwithstanding any such expiration or termination of this Agreement, all indemnity rights set forth in Section 2.10 and elsewhere in this Agreement or in any of the other Project Documents shall survive such expiration or termination.

5.17 Setoff. The State, in its sole discretion, may setoff and withhold (1) any costs or expenses, including, but not limited to, costs or expenses such as overtime, that the State incurs resulting from the Applicant's unexcused breach under the Agreement and under any other agreement or arrangement that the Applicant has with the State and (2) any other amounts of whatever nature that are due or may become due from the State to the Applicant, against amounts otherwise due or that may become due to the Applicant under the Agreement, or under any other agreement or arrangement that the Applicant has with the State. The State's right of setoff shall not be deemed to be the State's exclusive remedy for the Applicant's or Applicant Parties' breach of the Agreement, all of which shall survive any setoffs by the State. The State's right of setoff and right to withhold are not the State's exclusive remedies for Applicant's Breach, all of which remedies survive any setoffs and withholdings by the State.

ARTICLE 6 - SPECIAL CONDITIONS

6.1 Connecticut Environmental Policy Act. Disbursement of state funds may be subject to the completion of the appropriate Connecticut Environmental Policy Act ("CEPA") review of project activities. If project analysis and review under the provisions of CEPA is necessary, then DECD will contract a professional engineering/planning firm experienced in preparing CEPA documents, using funds appropriated to the project. Said firm shall work at the direction of the DECD in assessing the project activities in accordance with CEPA (C.G.S. Sec. 22a-1 and R.C.S.A. Sec. 22a-1a-1 to 22a-1a-12).

6.2 Environmental Condition of the Real Property. As determined by DECD, the environmental site assessments, survey, reports and remedial action plans will be prepared for real property subject to project activities. A professional firm licensed to practice in the State of Connecticut shall prepare the reports. The scope of investigations and report shall conform to the applicable Department of Environmental Protection laws and regulations, and the applicable American Standards for Testing Materials document standards. Copies of all reports shall be made available to DECD.

If the Applicant and/or other parties for the subject properties within the project area have conducted Environmental Site Assessments, copies of such documents must be submitted to DECD.

6.3 Construction Compliance.

(A) DECD requires submission of Project design documents, specifications, construction bid documents and cost estimates, and other documents outlined in the Commissioner's Proposal, the DECD Bidding, Contracting and Construction Guidelines, and the DECD Professional Service Selection Process Guidelines, as applicable. All submissions are subject to review, comment and/or approval by the Commissioner's designee. Unless notified by DECD, for projects with a total project cost of $250,000 or less, the Applicant will be required to certify that the project is in compliance with DECD design, bidding, contracting, and construction monitoring requirements. In these cases, it will be the responsibility of the Applicant to certify and submit the appropriate documentation during the pre-bid phase, construction phase, and close-out phase of the project.

(B) The Applicant shall submit for review and comment all applicable design and construction-related documents as outlined in the Commissioner's Proposal, the DECD Bidding, Contracting and Construction Guidelines, and the DECD Professional Service Selection Process Guidelines.

(C) DECD requirements for approval of the release of funds for construction include, as applicable, review of construction documents, the latest updated budget, submitted bidding process, Project schedule and cash flow updates, monthly reports per the Commissioner's Proposal, and any appropriate backup materials as may be needed for review, such as application and certificate of payment (AIA Document G702 and AIA Document G703) approved by the architect and/or engineer, and appropriate invoices, etc., as outlined in the Commissioner's Proposal and DECD Bidding, Contracting and Construction Guidelines. Copies of all executed professional service and construction contracts the Applicant will be requesting reimbursement for must be submitted to DECD.

(D) DECD will hold back up to ten percent (10%) of the Funding as a retainage until all required construction closeout documentation in accordance with DECD Bidding, Contracting and Construction Guidelines is submitted. This includes proof of completion of remediation work funded by DECD funds including, but not limited to, a Remediation Action Report, Verification Report, a recorded copy of the Environmental Land Use Restriction ("ELUR"), EPA Reports, DEEP Audit, abatement report, demolition report, or any other reports requested by the DECD Commissioner.

6.4 Administrative and Project Monitoring Plan. Before the disbursement of any Funding under this Agreement, the Applicant shall submit to the DECD an administrative and project monitoring plan ("Plan"), acceptable to the DECD, that describes how the Applicant will document and monitor the financial and construction oversight of the Funding as required by the Assistance Agreement and as incorporated and approved in the DECD's Project Financing Plan and Budget (**Exhibit A**). The purpose of the Plan is to assure the completion of the Project within the approved Financing Plan and Budget and the appropriate use of the Funding. The Plan shall address how the Funding will be disbursed in conjunction and in accordance with all contractual agreements.

The Plan shall include the process that the Applicant will undertake to approve payment requisitions and Project construction change orders.

6.5 Acknowledgement of Funding and Display of DECD logo. In any news release or printed material promoting this Project, the Applicant shall give credit, prominently placed, to the Community Investment Fund 2030 by including the following statement and the DECD logo: "Applicant received support for this project from the Community Investment Fund 2030 of the State of Connecticut."

6.6 Project Sign. Applicant shall erect and maintain a project sign at the Project site attributing funding to State of Connecticut, the Governor, Community Investment Fund 2030, the DECD, and the Commissioner.

6.7 Access Agreement. The Applicant shall provide to DECD a copy of the Easement Agreement as described in the Commissioner's Proposal.

6.8 Grant Award Project Change Request Procedures. The Applicant will provide in writing to DECD any request for a change to the Project. All change requests shall be submitted to DECD in accordance with the applicable CIF Program and Policy Guidelines. Requests for additional CIF funds shall be submitted via a new application to a future CIF competitive funding round.

[Remainder of page intentionally blank. Signature page to follow.]

IN WITNESS WHEREOF, the parties hereto make and enter into this Agreement.

BOROUGH OF NAUGATUCK

By: _____
Name: N. Warren "Pete" Hess III
Title: Mayor
Duly Authorized

Dated: 5/14/25

STATE OF CONNECTICUT
DEPARTMENT OF ECONOMIC
AND COMMUNITY DEVELOPMENT

By: _____
Name: Daniel H. O'Keefe
Title: Commissioner
Duly Authorized

Signed by Matthew J. Pugliese, Deputy Commissioner
Duly Authorized by Daniel H. O'Keefe, Commissioner

Dated: 5/16/25

This Agreement having been reviewed and approved, as to form, by the Connecticut Attorney General, it is exempt from review pursuant a *Memorandum of Agreement* between the State of Connecticut, Department of Economic and Community Development and the Connecticut Attorney General May 12, 2022, as may be amended from time to time.

EXHIBIT A

[Project Documents]

1. Application
2. Project Financing Plan and Budget
3. Proposal Letter
4. Administrative and Project Monitoring Plan

EXHIBIT B

[Applicant's Writings]

NONE.

SCHEDULE A

Schedule of Submissions and Approvals required for State Assistance

The DECD will require the Applicant to provide certain documents prior to the start of construction and through the completion of the project. In addition, DECD will require certain reviews and opportunities for comment during design and construction, through the completion of the project. The following outlines some of these documents and some of the anticipated DECD approvals:

Submissions to DECD – Start of Project to Construction Completion:

- Schematic Design Plans
- Consultant Contracts
- Consultant Engineering Reports (including civil/site, environmental, geotechnical, and structural).
- C.G.S. § 25-68(d) Floodplain Certification Submission (if applicable)
- Appraisal Reports
- Historic and Archeological Surveys, Reports, and Mitigation Deliverables (if applicable)
- Affirmative Action Compliance Reports
- Applicant Bylaws
- Applicant Conflict of Interest Policy
- Cumulative Statement of Program Cost and Project Balance Sheet
- Applicant Single Audit Act Reports
- Third Party Special Inspection Reports
- Monthly Progress Reports by Applicant (format to be approved by DECD)
- Meeting Minutes and Correspondence (between owner, architect, and/or contractor)
- State Historic Preservation Office (SHPO) Letter of Determination

DECD Site Development Involvement: DECD requires on and off-site project access on regular basis for review of design and construction developments.

Submissions to DECD Upon Completion of Construction:

- Annual Audit & Management Reports
- Cumulative Statement of Project Cost and Project Balance Sheet
- Certificate of Occupancy (where applicable)
- Record documents (As Builts)
- Certificate of Substantial Completion (AIA form G704)
- Contractor's Affidavit of Payment of Debts and Claims (AIA form G706)
- Contractor's Affidavit of Release of Liens (AIA form G706A)
- Subcontractors and Suppliers Release or Waiver of Liens
- Consent of Surety Company to Final Payment (AIA G707)
- Consent of Surety to a Reduction in or Partial Release of Retainage at 50% project completion, if applicable: (AIA form G707A) Requires DECD concurrence.
- Final Application and Certificate for Payment (AIA form G702, and continuation sheet G703)

If the contractor has provided Contractor's Affidavit of Release of Liens (AIA form G706A) and lien waivers from major subcontractors and suppliers, a contractor may request the balance of retainage. If these documents are not provided, retainage cannot be paid until 91 days after the date on the Certificate of Substantial Completion.

BOROUGH OF NAUGATUCK: INSURANCE REQUREMENTS

1. Indemnification and Insurance

_____ ('The Contractor') shall indemnify, defend and hold harmless the Borough of Naugatuck, its officials, officers, employees and designees caused in whole or in part to the fullest extent permitted by law from and against any and all claims, suits, actions, obligations, liabilities, damages, losses or injury (including the resulting death of a person), penalties, and expenses (including reasonable attorneys' fees) to the extent arising out of the performance of this Agreement or due to the Contractor's negligence or willful misconduct or omissions of the Contractor or its employees, agents, subcontractors or representatives.

Prior to the commencement of the work, and until final completion and acceptance of the work, the Contractor shall procure and maintain the following types of insurance and maintain all insurance coverage for the life of the contract, from an insurance company or companies with an A.M. Best Rating of A- (IX) or better licensed to do business in the state of Connecticut.

Evidence of insurance, with adequate limits of liability, shall be furnished to the Borough. Such evidence shall be in the form of a formal certificate of insurance properly executed by a licensed representative of the participating insurers and must contain a clause granting at least thirty (30) days prior written notice to the Borough of intent to affect cancellation, non-renewal, or other material change which may have an adverse effect on the policies of insurance referred to in the certificate.

The Borough expressly retains the right via endorsement to recover and/or subrogate for any and all damages caused by or resulting from the products or work of the Contractor or subcontractors. Where applicable, policies shall also be endorsed to include a Waiver of Subrogation in favor of the Borough, as well as name the Borough as an additional insured on a primary and non-contributory basis. The Contractor must require that all subcontractors, agents, and assigns procure and maintain insurance protection comparable to that required of the Contractor including additional insured status and waiver of subrogation requirements.

In the event of a dispute with respect to contract terms and conditions, this agreement and all of its terms and conditions, including but not limited to insurance and indemnification requirements, takes precedence over all other agreements.

Limitation of liability of any form by the Contractor or subcontractors is expressly forbidden. It's expected that the Contractor will expose the full limits under their insurance policies. These are only the minimum requirements to do business with the Borough.

A. *Workers Compensation*: The Contractor shall provide workers compensation and employer's liability insurance that complies with the regulations of the State of Connecticut with limits no less than $500,000 each accident by bodily injury; $500,000 each accident by disease and a policy limit of $500,000.

   Such policy shall include a broad form "all states" endorsement in the event the operations require any interstate involvement as respects employers-employee relationship.

B. *Commercial General Liability Insurance*: The Contractor shall provide commercial general liability insurance policy that includes products, operations and completed operations as

follows: Bodily injury & property damage with an occurrence limit of $1,000,000: Personal & advertising injury limit of $1,000,000 per occurrence: General aggregate limit of $2,000,000 (other than products and completed operations): Products and completed operations aggregate limit of $2,000,000.

C. *Commercial Automobile Insurance*: The Contractor shall provide commercial automobile insurance for any owned autos (symbol 1 or equivalent) in the amount of $1,000,000 each accident covering bodily injury and property damage on a combined single limit. Such coverage shall also include hired and non-owned automobile coverage.

C. *Umbrella Liability Insurance*: The Contractor shall provide commercial umbrella liability with limits no less than $1,000,000 each occurrence and $1,000,000 in the aggregate which shall be following form, without restriction or limitation, providing coverage over items (A), (B), (C), as noted above on a primary and non-contributory basis.

D. *Professional Liability*: The Contractor shall provide professional liability covering errors, omissions. Such insurance shall be in an amount no less than $1,000,000 each occurrence and $1,000,000 in the aggregate. If such insurance is written on a claims-made basis, the Contractor shall maintain such coverage continuously throughout the term of the work for a period of three (3) years following acceptance of the work by the Borough.

The Contractor shall not commence Work under the Contract until all insurance required has been procured and approved by the Borough nor shall the Contractor allow any of its subcontractors to commence Work until comparable insurance has been procured and approved by the Borough. Notwithstanding the foregoing, Contractor shall be liable for the actions and inactions of subcontractors who perform Work pursuant to this RFP and subsequent contracts.

The Contractor shall advise all their insurers of the contract provisions regarding insurance. The failure of the Contractor to notify insurers of the contract provision shall not relieve the Contractor from its insurance obligations under the Agreement. Non-fulfillment of the insurance provisions shall constitute a breach of this agreement and the Borough of Naugatuck retains the right to stop work until proper evidence of insurance is provided.

Signed by Contractor: Date:

_____ _____

Address:

_____

Signed by Borough: Date:

_____ _____

ATTACHMENT D

Grant Application and Assistance Agreement

Community Investment Fund 2030 - Round 4

Grant Application

Deadline is 12:00PM NOON on Friday, December 15, 2023. Please visit our website, or contact CIF officials at communityinvestmentfund@ct.gov for further information on program requirements. All attachments will be uploaded into a unique SharePoint folder. Please email communityinvestmentfund@ct.gov by November 30, 2023, to request a folder.
Complete the form below and upload attachments to your unique SharePoint folder. Narrative responses should thoroughly answer each question.
DECD will use the information you provide to vet your application for eligibility, assess whether the application is eligible for statutorily-mandated priority, and provide an Executive Summary for the CIF Board to review. We encourage you to review the Notice of Funding Availability thoroughly before completing the application.
This application may be reviewed by the CT Office of Policy and Management and other state or quasi-state agencies. Certain projects funded under this program are subject to the Connecticut Environmental Policy Act ("CEPA"), other environmental regulations, and DECD regulations related to procurement and bidding procedures.

SECTION I: APPLICANT INFORMATION

For a Capital Improvement Project proposal, complete the form below.

1. Name of applicant entity:	Borough of Naugatuck
2. FEIN:	066002401
3. Business Address:	229 Church Street Naugatuck, CT, 06770

4. Contact Information

Title:	Director of Grants
Phone Number:	(203) 720-7053
Email:	danielle.goewey@naugatuck-ct.gov
5. Project Name:	Rubber Avenue Corridor Revitalization Project

6. CIF Grant Amount Requested (For purposes of clarity, please enter your answers in whole numbers with appropriate comma separations, i.e. 250,000 instead of 250000):	7,754,493

SECTION II: ELIGIBILITY

7. The applicant is a (check one, or more than one if multiple applicants are applicable)	Municipality
8. This municipality, or the municipality in which the applicant operates, is a (check one or both)	Public Investment Community; Alliance District
9. For Non-Profits and Community Development Corporations only: Please explain how you serve the municipality that is eligible, including what is the organization's mission and activities. Please provide annual service statistics. If there are multiple co-applicants, all applicants need to demonstrate how they serve the eligible municipality.	N/A

Additionally, if applicable, all applicants must disclose in writing as an attachment to this application, to the best of their knowledge, all actions, suits, claims, demands, investigations, and proceedings of any kind, open, pending, or threatened, whether mature, un-matured, contingent, at law or in equity in any forum, involving the applicant that might reasonably be expected to materially adversely affect its businesses, operations, assets, properties, financial stability, business prospects or ability to perform the project as described in this application.

10. What municipality(ies) will be served by this project? (Use CTRL to select multiple municipalities.)	Beacon Falls; Naugatuck; Waterbury
11. Please provide a brief summary of your proposed project.	This project will transform the Rubber Avenue Corridor, and two surrounding neighborhoods, in the Borough of Naugatuck, expanding and complementing a $10,262,158 Local Transportation Capital Improvement Program (LOTCIP) award. Rubber Avenue acts as the Borough’s primary connector east to west and is a highly trafficked major collector. Linking the town of Oxford and newly renovated $80M Naugatuck High School in the west with the Borough’s ongoing downtown developments in the east, the Rubber Avenue Corridor is one of the oldest neighborhoods in Naugatuck. It faces a legacy of contamination as a

result of previous industrial use. Much of this corridor was owned by the Former Risdon Manufacturing Corporation and Uniroyal. Cleanup has commenced on this corridor, with the Borough acquiring much of the industrial land to facilitate such efforts. The Borough now maintains municipal control of over 72 acres of land along this 1-mile stretch of corridor. To promote grand list growth, economic development, and place properties back on the tax rolls, the Borough seeks funding from the Community Investment Fund for infrastructure upgrades that will promote private investment by interested parties, while enabling connectivity, increasing resilience, and preserving the State of Good Repair of a $10M LOTCIP award. Such upgrades include the replacement of sidewalks along a portion of Scott Street and in the Nettleton Avenue Area, as well as stormwater drainage upgrades in the Nettleton Avenue Area. This project focuses on the consolidation of municipal buildings to enable commercial redevelopment. This CIF application requests funding to finalize remediation at the Former Risdon Site as well as design and engineer a new public works garage & ambulance building.

12. Identify the target population for your proposed project.

The ratio of Naugatuck's debt to the grand list (actual) is 6%, making it the 7th highest in the State. The Borough is a small city; only the 30th most populous municipality in the State. Naugatuck's mill rate for real and personal property is 47.75, making it higher than surrounding towns such as Beacon Falls and Ansonia. This is an evidently tax-burdened community comparative to population size.

The Rubber Avenue Corridor houses several disadvantaged communities and historically underserved populations including flood vulnerable community members, EPA IRA Disadvantaged Community Members, Persons with Disabilities (11%), People of Color (26% vs 32% Borough-Wide), and higher-than-state-average of those in proximity to superfund sites (97th percentile) (USEPA, EJ Screen). The Borough itself hosts a high percentage of cost-burdened community members (30%) (CTDATA). Over 35% of residents in the Borough, as of 2023, are considered "ALICE" families (Asset Limited Income Constrained but Employed) (United Way Naugatuck). Although over 1/3 of Naugatuck's residents are cost burdened, only 9% of residents receive Food Stamps or SNAP, signifying a discrepancy in the availability of government assistance to many households due to income limits (2023 Data Equity Profile).

The Rubber Avenue Project Site is within 1 mile of three schools, including Andrew Avenue Elementary School, Naugatuck High School, and Western Elementary School. Over 43% of the district's enrolled students attend school within a 1 mile radius of the corridor. In the

last 10 years, high school enrollment rates have increased in the Borough, however further efforts are required to remove the Borough's status as an "Alliance District." Currently, the District passes Smarter Balanced Summative Assessments in English Language Arts at a lower rate than Connecticut students as a whole (37% vs 48%) and have higher suspension rates (9% vs. 6%) (Equity Profile).

The Borough's residents rank higher in indices that may indicate lower public health outcomes and environmental justice, including obesity (34% vs. 29%), smoking (23% vs. 14%), food insecurity (18% vs. 14%), and rate of drug overdose deaths (30 vs 20, per 100K) (Equity Profile). 42% of residents in BON live in a structure built before 1960 (41% State), increasing likelihood of exposure to lead paint. Naugatuck has greater rates of simple assault and rape and sexual assault than State averages.

Targeted Populations include:

1. Rubber Avenue Corridor Residents, including those in the Scott Street and Nettleton Avenue Neighborhoods
2. Flood Vulnerable Residents
3. School-Aged Children in the Naugatuck School District
4. Transportation Disadvantaged Residents
5. Historically Disadvantaged Communities & Environmental Justice Communities
6. Residents with poor public health outcomes
7. Residents serviced by the Naugatuck EMS & DPW
8. Low Income Community Members
9. Unemployed & Cost Burdened Community Members
10. ALICE Families
11. Those who receive SNAP or government Assistance
12. People of Color
13. Tax Burdened Community Members
14. Residents residing at the Naugatuck Housing Authority, or future residents of the downtown development projects
15. Future workers at the Naugatuck Industrial Park – Phase III (Received CIF Funding under CIF Round 2)

13. How does your project help underserved and marginalized communities? Explain how this project furthers consistent and systematic fair, just and impartial treatment of all individuals, including individuals who belong to underserved and marginalized communities that have been denied such treatment, such as Black, Latino and indigenous and Native American persons; Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender and queer persons and other persons comprising the LGBTQ+ community; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality. Explain how your project:

a. promotes new economic outcomes
b. benefits workforce or job access
c. provides other benefits or assets that promote equitable economic growth and capacity building.

Provide details:	The Borough currently maintains control of over 72 acres of land along a 1-mile stretch of Rubber Avenue. Several of the sites owned by the Borough are zoned for commercial use; the Borough has been approached by several interested parties regarding the purchase of the properties. These parcels have been identified as highly valuable commercial space, capable of generating approximately 30 commercial jobs and $100,000 in annual property tax revenue upon final redevelopment. Such estimates were developed based on similar size commercial projects of similar anticipated end uses in the Borough. Additionally, the revenue anticipated to be received upon the sale of the sites will total ~$2.5M. These sites include the Department of Public Works Garage, located at 510 Rubber Avenue, directly adjacent from the newly renovated $80M Naugatuck High School, as well as the Naugatuck Ambulance and DPW Offices, located at 246 Rubber Avenue. A CIF grant would lay the groundwork to consolidate both the DPW Garage and Naugatuck Ambulance Buildings to the Former Risdon Site, located at 0 Andrew Avenue (AKA 34 Andrew Avenue), generating access to valuable commercial space, job creation, and encourage taxable adaptive re-use of currently owned BON properties. This CIF application seeks design and engineering funds to begin the phased relocation and new construction of the DPW Garage and Ambulance Building on the Former Risdon Site. This CIF application would fund the replacement of sidewalk along a portion of sidewalk on Scott Street, a street that provides direct connection between the western end of the BON and the Naugatuck Industrial Park – Phase III, a project that was partially funded by the CIF Committee under Round 2. Rubber Avenue is a highly trafficked roadway, with revitalization currently underway utilizing a $10M LOTCIP award that will promote multi modal transit opportunities and less vehicles on the roadway. The redevelopment of the Industrial Park is anticipated to create 450 to 500 light industrial jobs upon final development. To ensure traffic flow and meet the needs of any newly created traffic in the area, the BON sees an opportunity in the Scott Street neighborhood to directly connect west end residents with the Industrial Park jobs through the replacement of sidewalks & the promotion of alternate forms of transportation, expanding the impact of the CIF Round 2 Award and access to any of the future jobs created by way of the Industrial Park. The entirety of Scott Street is less than 1 mile long.
14. How does this project impact the social and economic issues or challenges facing this population?	This project focuses on promoting connectivity & multi-modal forms of transportation in a vehicle-predominant corridor, with Rubber Avenue averaging annual Daily Traffic Counts of 13,6000 vehicles (2021, CTDOT). Throughout the Naugatuck Valley, residents report less

access to safe sidewalks (50% vs 60%), locations in walking distance (48% vs 55%), and safe places to bike (58% vs 73%) than State averages (DataHaven, 2022 Valley Community Index).

Although Naugatuck is considered “urban” as a result of its close proximity to the other high-population municipalities and its connection to the Waterbury Urban Area, the municipality’s population density is significantly lower than surrounding towns and cities. AllTransit found that in comparison to the City of Waterbury, the BON had a 2.7 Transit Performance Score (vs. 5.6), showcasing less connectivity, access to jobs, and frequency of service. In the Borough, the average size of a block within ½ mile of transit is 21 acres, while the that same statistic in Waterbury is 11.6 acres, nearly half the size. Active transportation options are currently limited as a result. This project will promote active transportation opportunities, complementing invested LOTCIP funding and directly linking residents in affordable housing located at Lewis Circle with three schools (containing greater than 40% of the district’s enrolled students), and Naugatuck Industrial Park Phase III.

Throughout the Valley, only 22% of workers held jobs directly in the Valley, with the remainder commuting outside of the valley for work (DataHaven, 2019). This project emphasizes commercial job growth. Additionally, replacement of sidewalks along Scott Street promotes connectivity between the western portion of the Borough and the Borough’s Industrial Park, currently under development utilizing $3M in CIF Round 2 funding and $7M in TIF funding. The Industrial Park is located less than 1 mile from the Rubber Avenue Corridor Project and will create 450-500 jobs upon final completion. Sidewalk upgrades will directly promote connection to this industrial park.

With the new rail line platform located less than 1 mile from this area of Rubber Avenue and several affordable and market rate housing developments underway, supported by a $6M State of Connecticut Communities Challenge grant award, $4M in TIF municipal funding, over $11M in ARPA funding, and hundreds of millions of dollars in developer funds, this project expands the impact of funds allocated to the downtown to one of the oldest neighborhoods in the Borough; a neighborhood that has truly “lost its way” due to de-industrialization and sprawling contamination.

15. Explain the specific process for engagement and involvement with the target population to identify the problem, develop a solution, and plan for this project.

On December 5th, 2023 the Borough of Naugatuck held a Community Information Session regarding this project and this Community Fund Application. The Information Session was held via zoom, with several members of the public in attendance in person, as well as the entirety of the Board of Mayor and Burgesses. The Community Information Session was noticed to the

public by way of the local newspaper and the Borough's website. The notice included information to request ADA Accommodations as well as Interpretation Services.
The Information Session had significant turn-out, with 28 zoom viewers in attendance. Additionally, 9 Burgesses, the Mayor, Representative Seth Bronko, 1 news reporter, 5 Borough Staff, and 3 members of the arts commission in attendance (47 total). The Community Information Session was both recorded and posted on Youtube and the Borough's website post-meeting, as well as reported on by the Republican American. The Community Information Session is attached. Question and Answers were taken during the meeting, respondents were also advised that questions and comments could be forwarded to the Borough until December 12th.
This project has seen community support, as evidenced by the letters of support attached to this application. This project has been under discussion since at least 2019 when the Borough first applied for a special permit to the Zoning Commission to transfer the former recycling facility to the Former Risdon Site and place the Transfer Station on the site. The idea of relocating the DPW garage and ambulance sites were introduced at this time, with various proposed end sites. Commercial redevelopment of the current EMS & Public Works Garage Sites has been shared with the public by way of Board of Mayor and Burgesses meetings, as well as through news articles (attached to this application). As the public provided commentary or as plans developed, the Borough continued to inform the community of such plans.
Brownfield Remediation at the Risdon Site has undergone Community Relations Planning as a result of a previous USEPA RLF (NVCOG) award, with the most recent Community Relations Plan dated April 5, 2023 and linked here: CRP. A public engagement meeting took place on April 27th, 2023 at the Borough's Town Hall to discuss the CRP and on-going remediation at the site. The public had Q&A opportunities in regard to environmental work. Rubber Avenue's Reconstruction Project, funded by LOTCIP, has also seen significant community engagement, including a Public Information Meeting in 2020. The Naugatuck Valley Council of Governments has seen this project before their board at several of their meetings.
The Borough will continue to communicate project progress to the local community by way of the Borough's websites, social media, and the local newspapers (My Citizens News and the Republican American).

16. How does the proposed project transform the community and target population?

8,356 residents reside in 3,503 households within a 1-mile radius of the Proposed Project Site. Over 26% of the Borough's population resides within a 1-mile radius,

while 43% of school-aged children enrolled in the Naugatuck School District attend schools located within a 1-mile radius of this project site. This area of the Borough acts as the east-west gateway to the Borough's downtown. It is anticipated that more than 175 residents will be serviced by drainage upgrades alone.

This corridor, suffering from a history of post-industrial contamination, ranking in the 97th percentile federally for proximity for superfund sites, will see significant transformation as a result of a CIF investment. Funding will provide gap financing to remediate an approximately 12-acre brownfield site in the corridor, increasing public health outcomes. Drainage upgrades in the Nettleton Avenue area will decrease flooding risks, particularly for Rubber Avenue, ensuring that a $10M LOTCIP award at Rubber Avenue is maintained in a State of Good Repair. Stormwater drainage upgrades in the Nettleton Area also ensures greater quality of life & public health outcomes for this area of the region and the Borough. If flooding occurs, it is probable that any pollutants in the ground could enter the Long Meadow Pond Brook, emptying into the Naugatuck River, and eventually, the Long Island Sound. Pollutants found along the Rubber Avenue corridor throughout cleanup of various properties include: PCBs, arsenic, lead, ETPH, VOCs, and other various metals. Sidewalk repair will provide active transportation opportunities and link 26% of the Borough's population and 46% of the Borough's school-aged children enrolled in the district with over 450-500 jobs anticipated to be created at the Former Lanxess Site, funded under Round 2 of CIF, as well as with other local amenities including the Rail Line, Downtown, Naugatuck High School, the Housing Authority, Parks and Recreation, and more. Upon consolidation of the DPW Garage & Ambulance on the Former Risdon Site and sale of their current sites for future commercial use, the Borough is anticipated to generate approximately $100,000 in annual property taxes and $1.5M by way of the sale. Upon final redevelopment, the sites are anticipated to create approximately 30 commercial jobs directly in the corridor.

Naugatuck Ambulance Inc. services the entirety of the BON's population, particularly vulnerable populations, as well as other CIF-eligible municipalities throughout the Naugatuck Valley region including Waterbury and Beacon Falls by way of mutual aid agreements. From December 2020 to June 2021 (6 months), Naugatuck Ambulance Inc. received 2,340 service calls (390 calls per month). Naugatuck DPW protects the health and safety of all households in the Borough through repair and maintenance of town-infrastructure.

This project will create infrastructure upgrades in one of the oldest areas in the Borough, directly connecting to hundreds of millions of dollars in investment in the

	Borough's downtown by way of Rubber Avenue and a $10M LOTCIP Avenue. This project expands such investments in the Borough's downtown core westward, ensuring equity in allocation and effect of previously awarded State, Federal, and Municipal funding.
17. How do you propose to measure progress towards the identified challenges facing the community? Provide SMART indicators (Specific, Measurable, Achievable, Realistic, Time-Bound.) related directly to the proposed project. Give current service statistics and expected increases in outcomes due to the proposed project.	Project success will be measured by evaluation indicators, including the number of acres of brownfield remediated, percent of funds leveraged, cost savings annually for repair/replacement of sidewalks & drainage for the BON, LF of sidewalk replaced, LF of drainage piping replace, number of design and engineering documents, as well as cost estimates, created, and number of contractors procured. In terms of service statistics, the Borough will identify: increase in users of sidewalks by way of this project, particularly in the Scott Street area. Current user statistics are approximately 10 users/day, as the sidewalks in this area of the Borough are in a state of disarray. AARP finds that those who live in neighborhoods with sidewalks are 47% more likely to be active (utilize such sidewalks) than those without. As such, the BON expects significant increase in use. The BON will also measure the efficiency of drainage upgrades in the Nettleton area for capacity. In later phases of this project, the Borough will measure grand list growth created through sale of commercial space, taxes generated by such sale, sale revenue of commercial space. The Borough, in later phases, will measure number of ambulance calls responded to and number of people employed at the newly constructed DPW & ambulance building. The Borough will measure economic and quality of life indicators by utilizing data from the Tax Assessor's Office, Finance Department, NVCOG, the EDD, USCensus, CTDOL, USBLS, etc. in a comparative manner to fully report on the project progress. Additionally, the Borough will utilize regional health data from the Naugatuck Valley Health District, NVCOG Equity Profile, Greater Waterbury Well Being Report, CTDPH, etc.
18. How is the applicant leadership team representative of the community being served?	The applicant for this project is the Borough of Naugatuck. Naugatuck's current Mayor, N. Warren "Pete" Hess III, is serving his fifth term as mayor and sits on the Borough's legislative body – the Board of Burgesses. 10 members sit on the Borough of Naugatuck's Board of Burgesses, representing the diversity of the target population being served. From the local business community to the Park Commission, Board of Education members, those employed with the State of Connecticut, attorneys, and those serving on the Commission for the Elderly, this board works collaboratively to ensure equity and advancement of all members of Naugatuck's community. The Board of

	Burgesses is voted in on municipal election years, reflecting leadership that is appointed through a fair and equitable process. Mayor N. Warren “Pete” Hess III was re-elected Mayor in 2023. Mayor Hess was born and raised in the Borough, an attorney by trade since 1974. Hess has worked since his 2015 election to increase the grand list, invest in schools, and provide recreational opportunities that would attract businesses, visitors, and families. This project is just one such reflection of his efforts to revitalize the community and advance the Borough. Prior to his work as Mayor, Pete had a successful and long-standing career in land use and property redevelopment. Mayor Hess opened the law offices of N. Warren Hess III as a sole practitioner in 1978, focusing on civil litigation, municipal law, and real estate transactions and handling litigations for the BON and Regional School District No. 16. Eventually his practice evolved, to focus on real estate law (both for developers and municipalities), handling complex environmental land use, and other real estate matters. James Stewart, the Director of DPW, has been employed with the BON for over 20 years. Jim has 30 years experience in the field and boasts a robust DPW staff team. The Borough's Director of Grants, Danielle Goewey, has 5 years of public sector grant writing and reporting experience working as a full-time employee and consultant for municipalities including BON, Waterbury, and Norwich. Danielle will oversee the necessary reporting for this grant on behalf of the Borough. The contractor that is selected to perform the scope of work related to this project will be chosen through a fair, transparent bidding process, outlined by the Borough’s bidding process in the Code of Ordinances. The Borough, acting as an equal opportunity employer, will provide bid documents to all parties without regard to sex, color, religion, national origin, age, disability, veteran status, or sexual orientation.
19. Please respond to any weaknesses identified in the DECD Executive Summary from your last application. Provide any updates to the project since the original application was submitted. (Answer only if this application is a reapplication of CIF Round 1, Round 2 or Round 3.)	N/A

20. Priority of certain projects. (Applies to municipalities only. NPO and CDC please select N/A.)

a. Has the municipality implemented local hiring preferences pursuant to section 7-112 of the General Statutes?	Yes
b. Will this project leverage municipal, private, philanthropic, or federal funds?	Yes
c. Does this application include a letter of support from one or more members of the General Assembly in whose district the project will be located?	Yes
21. Does this application include a project labor agreement or other employment proposal to employ ex-offenders or individuals with physical, intellectual, or developmental disabilities?	No

Capital Improvement Project

Capital Improvement Project (Choose the one category that best applies to the overall project.)	Water/Sewer Infrastructure

**Brownfield remediation definition 588-gg (2) "Brownfield" means any abandoned or underutilized site where redevelopment, reuse or expansion has not occurred due to the presence or potential presence of pollution in the buildings, soil or groundwater that requires investigation or remediation before or in conjunction with the redevelopment, reuse or expansion of the property*

1. Describe the proposed capital improvement and any associated program in detail.	This project will transform the Rubber Avenue Corridor, and two surrounding neighborhoods (Nettleton Avenue and Scott Street), in the Borough of Naugatuck. This project will expand the impact of previous allocated CIF, State, and Federal funding westward in the Borough to one of the oldest post-industrial areas of the Borough, within a 1-mile radius of the Borough's downtown and the Naugatuck Industrial Park Phase III. This is a highly trafficked corridor, with Rubber Avenue acting as the main east-west connector roadway between the newly renovated $80M Naugatuck High School and the Borough's downtown. Over 40% of the School District's enrolled students attend schools within a mile radius of this corridor, making this a high priority area for the BON. Rubber Avenue has recently seen investment by the Local Transportation Capital Improvement Program (LOTCIP) in the amount of $10,262,158 to completely renovate this section of roadway.

	The proposed application and project will leverage such funding while providing gap financing to completely revitalize this area of the Borough. The Borough has worked diligently in recent years, in tandem with the NVCOG and USEPA, to remediate and redevelop former brownfield sites along this corridor. This grant application would finalize the remediation of 12 acres of brownfield cleanup in a primarily commercial-residential area, leveraging a $550,000 USEPA RLF grant award. Project Components Include: 1. Finalize Brownfield Remediation at the Former Risdon Site located at 0 Andrew Avenue (AKA 34 Andrew Avenue) (ELUR, Borings/Monitoring Wells, GW Monitoring, RAP, Site Verification, Land Use Restriction, Project Management, capping through pavement as Required under the RAP) 2. Sidewalk replacement along Scott Street (~2,800 LF) 3. Drainage Replacement of ~1,270 LF of piping in the Nettleton Avenue Area, sidewalk replacement post-drainage replacement 5. Design and Engineering of the consolidation of the DPW Garage & Ambulance Building on the Former Risdon Site, including preparation of cost estimates & RFP preparation for construction
2. Please explain how the proposed plan is consistent with the municipality's Plan of Conservation and Development (PoCD).	This project is located in the Rubber Avenue Design District. The Design District was established for the purpose of encouraging investment in the area as a mixed-retail and service area. The POCD outlines the Design District as an area of investment. Currently, the BON maintains municipal control of over 72 acres of land in this area, 58.34 have final end uses as a High School and Parks and Recreation Department, while approximately 14 require final redevelopment. To encourage alignment with SDD goals and vision, this project would fund the design and engineering documents to consolidate municipal buildings in this corridor, enabling commercial revitalization, making 2.23 acres available for commercial end use. An additional 1.76-acre site at the former Recycling Center, directly in front of the Former Risdon site, is currently under negotiation for contract with a developer, thus in alignment with SDD goals. The BON's Planning Commission recently finalized its 2023 POCD update, which will be placed into effect on December 28, 2023. In the POCD, "town property on Rubber Avenue where the recycling and public works facilities" could be redeveloped" is directly called out as a potential redevelopment opportunity. Infrastructure upgrades are a guiding principle and goal, as well as brownfield redevelopment & adaptive reuse, multi-modal transportation opportunities, and job creation.

3. Address how the elements of the state's Economic Action Plan align with your project. Only address

those that apply:

• Workforce: How does the project broaden the base of skilled workers to meet increasing industry demand?
• Communities: How does the project attract and retain talent by investing in vibrant and affordable communities for all?
• Innovation: How does the project support growth and generate inclusive economic opportunity within CT's most innovative and specialized industries?
• Business Environment: How does the project improve CT's environment and reputation for starting and growing businesses?

Provide details:

This project provides the necessary infrastructure for one of the oldest neighborhoods in the BON, an area that has "lost its way" due to de-industrialization and contamination. Such infrastructure upgrades will, in future phases, create approximately 30 commercial jobs in the area and approximately $100,000 in annual tax revenue for this tax burdened community where over 30% of residents are cost-burdened and considered "ALICE." More importantly, this project will directly connect residents at the Naugatuck Housing Authority and Lewis Circle HUD apartments, as well as other residents in the corridor, with 450-500 new jobs anticipated to be created at the Naugatuck Industrial Park Phase III upon final redevelopment (less than 1 mile walk from the site), thus promoting job creation and providing quality of life outcomes for residents. With rail line upgrades to the Waterbury Branch totaling over $250M in recent years and a new train station anticipated to break ground in the BON's downtown in 2025, this project will attract new residents westward in the BON, directly adjacent to the $80M newly renovated Naugatuck High School in a primarily commercial-residential area where over 40% of the district's school-aged children are enrolled. With such proximity to schools, this area of the BON is highly attractive for young families. Providing for infrastructure upgrades promotes community; ensuring that our young people stay in Naugatuck. This is an adaptive reuse of a brownfield project, providing for quality of life outcomes for residents & promoting livable communities. This project is in alignment with the State's EAP under workforce and Business Environment, as it will make prime commercial space in the Rubber Avenue Design District (and TIF district) available for sale, ultimately contributing to grand list growth and creating commercial/retail jobs. As this project will focus on the cleanup of a 12 acre brownfield site that is currently vacant/blighted, private investment will be incentivized, fostering a good business environment, as well as increasing property values for the surrounding area. Funding this project will plan the construction of the Borough's DPW building – promoting a beautiful, livable, vibrant community, as DPW is responsible for street maintenance, potholes, parks and rec, sidewalk repairs, and much more.

Project Budget and Sources of Funding:

4. Please upload to your unique SharePoint folder a detailed budget for your proposed project. Please also use the CIF Budget Template* (link below). For sources of funding, please clearly denote status of other funds (i.e., committed, pending, to be requested, etc).	Yes, uploaded

***CIF Budget Template Link: Click here**

Please ensure these amounts match your CIF Round 4 Sources and Uses Budget Form. Fields 5 through 12 are numeric only. Enter whole numbers with commas (ie 250,000 not 250000.00).

5. Other DECD Funds:	0
6. Other State of CT Bond Funds Previously Received:	0
7. Other State of CT Funds:	10,262,158
8. Federal Funds:	1,025,000
9. Applicant Funds:	1,000,000
10. Philanthropic Funds:	0
11. Developer Funds:	0
12. Total Project Budget:	12,287,158

Project Details:

13. For housing projects, please provide the total number of units, number of new units vs. renovated units, and the breakdown of affordability levels by AMI percentage.	N/A
14. For housing projects, please explain how this is consistent with the municipality's affordable housing plan. Please upload to your unique SharePoint folder a copy of the plan.	N/A
15. Please describe how the feasibility of the project was determined. Applicant is welcome to upload to their	This is a feasible project that has a budget boasting less

unique SharePoint folder third party feasibility and/or market study report.	
	than 20% soft cost with a greater than 1:1 leverage ratio, with over $90M in complementary funding. The BON will provide match to design and engineering portions of this project for both the sidewalk & drainage components, if awarded, with the BON only seeking soft costs for design of the DPW building through this funding source. As such, the BON will be able to immediately commence phased construction, if awarded CIF funds. Please see the attached timeline. Upon execution of an Assistance Agreement with CIF, the BON will be able to have "shovels in the ground." This application will provide gap financing for nearly every component. The EPA has invested $550,000 in remediation costs at the Former Risdon site, while the BON provided $400,000 in municipal funding to acquire the site. CIF will finalize such remediation. HUD CDBG invested ~$400,000 in drainage upgrades in the Nettleton Area in 2010. CIF funding will finalize such upgrades. The BON has included $200,000 in their Borough-wide sidewalk repair program; any sidewalk replacements funded by way of this project will expand the impact of such municipal efforts. Finally, the municipality has allocated $400,000 in municipal funding to the design and engineering of the sidewalk & drainage improvement components of this project utilizing $400,000 in TIF funds, if awarded CIF funds. CIF funding will provide for the construction of such upgrades. For the municipal consolidation of the DPW Garage and Ambulance, other projects have taken shape throughout the State that have inspired this project. Consolidation of municipal services to one site has become a new, cost-saving practice for municipalities. Ansonia (Senior Center & Police Department), Waterbury (All DPW Bureaus & a portion of Fire Services), and Middletown (DPW & WPCA) have all consolidated public service buildings in recent years successfully.
16. Please upload to your unique SharePoint folder a timeline for completion of the project. If the capital improvement will include private or not-for-profit tenants, include a timeline for tenanting.	Yes, uploaded
17. Please upload to your unique SharePoint folder any construction drawings, schematics or plans for the projects, including but not limited to: architectural plans or renderings, site plans, surveys, and zoning analysis.	Yes, uploaded
a. Indicate the status level of the project plans and construction drawings (whether conceptual, 10%, 30% 60%, 100%)?	Included in the sharepoint folder are several design plans. The first includes concept plans for the relocation

	of the Naugatuck Ambulance and Public Works Garage to the Former Risdon Site. This application requests funding to further such conceptual plans to 100% completion. The Borough has committed a $400,000 match to this project utilizing TIF funds, if the project is awarded. Such funding will be allocated to design and engineer the sidewalk replacement and drainage upgrade components of this project, thus limiting "soft cost" requests from CIF. Design drawings for the Nettleton Avenue Stormwater Drainage Upgrades were completed in 2013, however these documents will require significant review. As such, the Borough considers them to be at 50%. An engineer will be solicited to review and update such drawings for 2023 implementation. The Borough will work diligently to move design and engineering documents for these components forward, if awarded CIF funds, prior to Assistance Agreement Execution.
18. Detail who is on the project team and describe their capabilities to bring the project to completion. Please provide examples of similar successful projects they have completed. Please upload to your unique SharePoint folder bios or additional information.	Yes, uploaded
19. Please provide the street address(es) of the site of the capital improvement(s).	0 Andrew Ave (AKA 34 Andrew Ave); Scott Street (Sidewalk), Nettleton Avenue (Drainage Upgrades)
20. Total number of Parcels	1
21. Total Acreage	11.96
22. Is the applicant the owner of the property?	Yes
23. If applicant or project partner is not the property owner, describe how and when ownership and access to property (if needed) will be obtained. Please upload to your unique SharePoint folder the Letter of Intent, Purchase and Sale Agreement, Access Agreement or other documentation from owner indicating willingness to provide access.	N/A
24. Please provide your knowledge of any potential Environmental Impacts of this project. Please indicate if this project has undergone any prior public scoping for CEPA compliance and/or Flood Management Certification. Then use questions 25-40 to indicate	This project is not anticipated to have any potential environmental impacts. The Borough will solicit an engineer to undergo the permitting process for drainage

your level of knowledge of potential impact by area.	
	related upgrades, including any necessary DEEP permits. Additionally, the Borough has contracted an LEP for the Former Risdon site – Scott Bristol, SLR, Inc. – who will ensure continued necessary regulatory compliance both for CTDEEP and the USEPA, as a result of previous USEPA investment at the site. Such funding was utilized on time and in budget for the scope of work of the contract
25. Wetlands	Unknown at this time
26. Surface or Groundwater resources	Unknown at this time
27. Floodplains (100-year) or Floodways	Unknown at this time
28. Stream channel encroachment	Unknown at this time
29. Fish and/or wildlife habitats, including the presence of endangered and special concerns species and habitats (NDDB)	No anticipated significant effects
30. Air quality	No anticipated significant effects
31. Coastal resources	No anticipated significant effects
32. Agricultural lands and/or soils	No anticipated significant effects
33. Historic sites and districts	No anticipated significant effects
34. Archeologically sensitive areas	No anticipated significant effects
35. Aesthetic / scenic resources	No anticipated significant effects
36. Designated open space and recreational use	No anticipated significant effects
37. Surrounding land uses / neighborhood	No anticipated significant effects
38. Transportation	No anticipated significant effects

39. Utilities and services	No anticipated significant effects
41. Does the applicant affirm that they understand and acknowledge that the proposed project may warrant further review under the Connecticut Environmental Policy Act (CEPA), and agree to comply with all requirements and costs associated with such review, and further acknowledge that the applicant is in a position to cover any and all additional costs associated with such review?	I understand

42. Please note that if the project involves federal funding, the project will need to be in compliance with Section 106 of the National Historic Preservation Act (NHPA) and the National Environmental Policy Act (NEPA). Separately, if this project is successful in receiving this grant and involves other state funding, it will have to be in compliance with several state laws including the CT Environmental Policy Act (CEPA). Please visit the State Historic Preservation Office's (SHPO) webpage for more information. Please answer the below questions and submit the Project Notification Form to assess the impacts to historic, cultural and archaeological resources and understand the federal and state obligations.

A. Describe what, if any, reuse or rehabilitation of any mills or historic structures (appearing on the National Register of Historic Places, State Register, or a designated Local Historic Property) the project will involve.	N/A
B. Describe any alteration, partial demolition, or full demolition that will occur of existing structures. If the project includes alteration or demolition of buildings more than 50 years in age, please indicate the dates of construction for the affected buildings.	N/A

C. Please upload to your unique SharePoint folder a completed copy of the State Historic Preservation Office (SHPO) Project Notification Form. CLICK HERE TO DOWNLOAD the form and upload it to your unique SharePoint folder.

Indicate if the form has already been submitted to the SHPO. If determination has already been obtained, provide a copy of the SHPO determination letter as well.	Not submitted to SHPO.

43. To what extent is the site "shovel ready?" In answering this question, consider:

A. If other sources of funding are required for project completion, describe status of assembling these funding sources to complete the project (please upload to your unique SharePoint folder Project Budget/Proforma and commitment letters from other funders, if appropriate). If funds are not yet fully committed, please describe any additional hurdles or requirements for commitment.	At their December 5th, 2023 meeting, the Mayor and Board of Burgesses committed to a $400,000 municipal match for this project, if awarded CIF funds. Other leveraged funds include a $550,000 USEPA RLF award at the Former Risdon Site for cleanup efforts, a $475,000 HUD Small Cities Grant for drainage improvements in the Nettleton Area, $400,000 in previously committed municipal funding to the purchase of the Former Risdon Site, as well as $10,262,158 LOTCIP award to renovate Rubber Avenue. This project will also leverage a $200,000 investment in the Borough-wide sidewalk repair program for FY23-24 by the municipality. Any funding allocated to the replacement of sidewalks on Scott Street will expand the outcomes & reach of this program in the Borough. In total, this project leverages over $12,287,158. Complementary funding includes an $81M renovation to the Naugatuck High School. This project will have shovels in the ground upon execution of an assistance agreement, if awarded CIF funds. Please see question 15. The Borough will be able to get “shovels in the ground” immediately through a phased project schedule, as attached. The BON is currently seeking future construction funding necessary for the DPW Garage & Ambulance Building by way of several innovative financing features including Federal Earmarks, Public-Private Partnerships, Bond Funding, and other State and Federal financing opportunities. The BON may explore zero interest loans if applicable.
B. Has the applicant obtained approval to request this funding (i.e., from the Town Council / Board of Alderman, Board of Directors, etc.)? If so, please upload to your unique SharePoint folder the document giving such authority.	Yes, uploaded

C. Permitting and Utilities:

i. Does the project have site plan, other planning and zoning approvals, variances etc. from the host municipality to move ahead with the project? If no, describe the plan or path that is charted out to obtain the same.	The Former Risdon Site, the future proposed site of the Naugatuck DPW Garage and Ambulance Building, currently houses the Borough’s Transfer Station. The site is located in the Rubber Avenue Design District (RADD). Under Special Permit, sites located in the RADD can be utilized for community facilities and services. The Borough’s Transfer Station received special permit for use in 2020. The site plan for the

	DPW Garage and Ambulance Building, once developed, will be brought before the Zoning Commission. The site has been special permitted for use as a community facility and service; no significant zoning changes will be required. The sites that currently house the DPW Garage and the Ambulance Building are both zoned for commercial end use, as such, they would be perfectly suited for developer end-use, requiring little to no zoning changes.
ii. Whether the project requires local inland wetland permits and if so, have they been obtained/applied for? What is the status? Please list any other local, state or federal approvals or permits which will be necessary for the project to proceed and the timetable and process to achieve them.	The Former Risdon Site is in close proximity to the Long Meadow Pond Brook, as such Local Inland Wetland Permits may be required for this project during later construction phases. A street opening permit will be required for this project for the drainage and sidewalk replacement upgrades. All permits will be applied for by the selected contractor, included in the scope of work for this project.
iii. Does the project site have all necessary public utilities, roads and other infrastructure required for the redevelopment project? If no, what additional (or upgrade of) public infrastructure would be required and what is the expected cost? Is there a plan in place to address the need and is there a funding source identified?	This project focuses on infrastructure improvements throughout the Rubber Avenue Corridor that will complement an over $10M investment in Rubber Avenue itself by way of LOTCIP. Such site improvements include stormwater drainage upgrades and sidewalk replacement in the Nettleton Avenue and Scott Street areas. This project maintains state of good repair of the LOTCIP award as currently, stormwater drainage, during heavy rain periods, floods Rubber Avenue. The Former Risdon site itself has the opportunity to connect to electricity, gas, internet, fiber optic, telephone, and more. This project would develop design and engineering documents for the construction of a DPW Garage & Ambulance Building which would promote safety & state of good repair of public infrastructure throughout the Borough.
iv. Will the project be a major traffic generator (MTG) as defined by Section 14-312-1 of the Office of the State Traffic Administration (OSTA) regulations (an MTG is defined as any development of 100,000 square feet or more of gross floor area or 200 or more parking spaces). What steps have been taken to initiate the process and what is the expected timeline?	No, this project will not be a major traffic generator. Please see the attached conceptual plan for the DPW Garage and Ambulance at the Former Risdon Site.
D. Any other information that describes the shovel readiness of the project.	N/A

It is hereby represented by the undersigned, that to the best of your knowledge and belief no information or data contained in the application and attachments are in any way false or incorrect and that no material information has been omitted. Your application and the contents of your application and our discussions with you are subject to public disclosure. DECD may communicate with the municipality, state agencies (including the CT Office of Policy and Management, DEEP, the CT Department of Transportation, the CT Department of Housing, the CT Department of Public Health), the EPA, and the general public. Projects funded under this program may be subject to the Connecticut Environmental Policy Act ("CEPA"), as well as other environmental regulations, and DECD regulations related to procurement and bidding procedures.
State funding may require placement of a lien on project property. In addition, if the applicant is a private corporation, a personal guaranty may be also required from each owner of 10% or more. In addition, the undersigned agrees that any funds provided pursuant to this application will be utilized exclusively for the purposes represented in this application, as may be amended and agreed to by the DECD. DECD reserves the right to modify or waive any requirement, condition or other term set forth in this Application, to request additional information at any time from one or more applicants, to select any number of applications submitted to this program, or to reject any or all such applications, in each case at DECD's sole discretion. DECD may exercise the foregoing rights at any time without notice and without liability to any applicant or any other party. Applications to this program shall be prepared at the sole expense of the applicant and shall not obligate DECD to procure any of the services described therein or herein from any applicant. DECD shall not be obligated to any applicant until a final written agreement has been executed by all necessary parties thereto and all applicable approvals have been obtained. As such, any funds expended by the applicant prior to these approvals will be done so entirely at the risk of the applicant.

Signature (By entering your name you attest to the above)	Danielle Goewey
Title:	Director of Grants
Date:	Friday, December 15, 2023

ATTACHMENT E

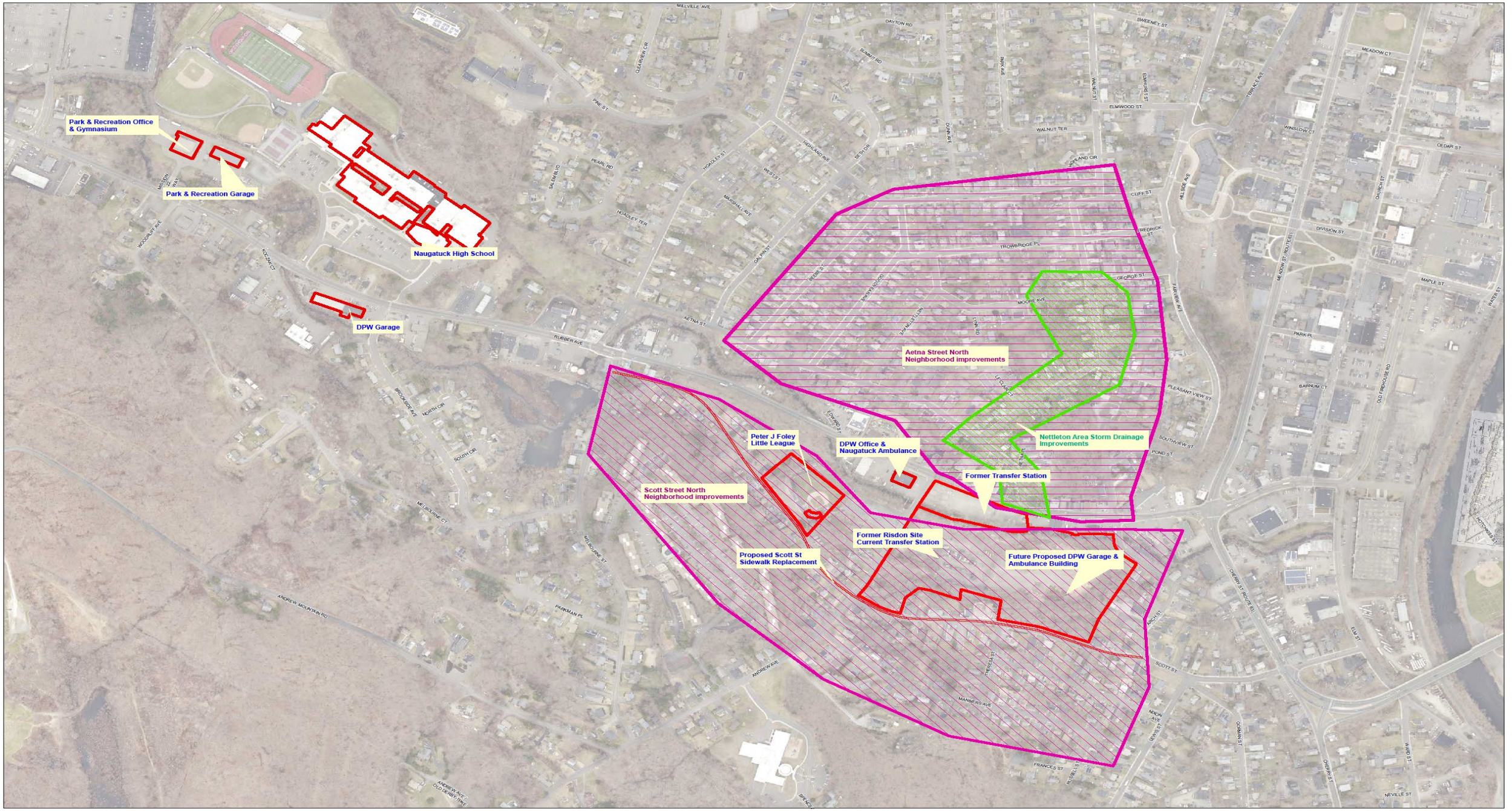
Exhibits to Grant Application Agreement

RUBBER AVENUE CORRIDOR REVITALIZATION PROJECT & COMMUNITY INVESTMENT FUND APPLICATION

COMMUNITY INFORMATION SESSION
BOROUGH OF NAUGATUCK

Industry Past & Legacy of Blight

- BON is known for its industrial & manufacturing past – Rubber.
  - Historical manufacturing left behind large swaths of contaminated brownfield land throughout BON.
  - Many areas have undergone targeted revitalization & redevelopment efforts.
- BON now turns its attention to the Rubber Avenue Corridor, an area once largely owned and occupied by the Former Risdon Manufacturing Corporation ("Risdon") and Uniroyal.
  - Risdon and Uniroyal, combined, controlled 20+ acres of land along this corridor, much of which has been acquired by the Borough undergone assessment and remediation.
  - Funding provided by: Naugatuck Valley Council of Governments & United States Environmental Protection Agency.
- This corridor suffers from a legacy of blight & vacant/underutilized land as a result of previous historical contamination.
- **Opportunity** exists in this corridor for commercial revitalization.



Rubber Avenue Revitalization Project

Today's Objectives

Introduce the State of Connecticut's Community Investment Fund ("CIF")

Introduce the Rubber Avenue Corridor Revitalization Project

Share information about the Borough of Naugatuck's CIF Grant Application

State of Connecticut Community Investment Fund ("CIF") 2030

Created to "unlock Created to "unlock economic potential for underserved communities," including those designated as:

Public Investment Communities or Alliance Districts

Projects should advance fair, just, and impartial treatment of all individuals, including historically underserved individuals

CIF will award up to $175M each year until the year 2030.

Rubber Avenue - Today

- Rubber Avenue is the primary connector between the BON's downtown to the Town of Oxford in the west
- Rubber Avenue is the main connector in the BON, east to west
  - This is a highly trafficked area of the BON, with this roadway defined as a "major collector" by the State's DOT
  - The section of Rubber Avenue next to the Former Risdon site has Annual Average Daily Traffic Counts of 13,600 vehicles as of 2021 data
- The area has lost its way. Revitalization has begun, starting with the renovation of the NHS.
- Area Contains:
  - High School
  - Little League Park
  - Long Meadow Pond Brook

Peter J. Foley Little League (Directly across from Former Risdon Site)

Source: O & G, Newly Renovated Naugatuck High School

CIF Application, Leverage, Impact

- This application requests approximately $8,000,000 in funding from the CIF Grant Opportunity (20% soft costs, 80% hard costs)
- Leverage $12.2M in LOTCIP ($10.2M), EPA ($550K), Small Cities ($475K), and municipal ($600K) funding, as well as a $400,000 direct municipal TIF commitment
  - (Greater than 1:1 leverage)
- This project will complement over $80M invested in the newly renovated Naugatuck High School.
- The revenue to be received by the Borough on the sale of the DPW Garage and Ambulance Site is anticipated to total approximately $2,500,000. Newly constructed commercial buildings will create:
  1. Approximately 30 commercial jobs upon final redevelopment.
  2. Approximately $100,000 in property taxes annually upon final redevelopment.
- ~175+ residents will benefit as a result of drainage and stormwater upgrades.

Demographics

- Rubber Avenue Corridor Area houses several disadvantaged communities/historically underserved populations, including:
    - Food Desert
    - Flood Vulnerable Community Members (Environmental Justice)
    - EPA IRA Disadvantaged Community Members
    - 26% People of Color
    - 11% Persons with Disabilities
    - Higher-than-State-average of those in proximity to superfund sites (97th percentile) (Environmental Justice)
- The Borough houses:
    - ALICE Community Members (Asset Limited Income Constrained But Employed) (35%, 2023)
    - Cost-Burdened Community Members (30%)
    - Higher-than-State-average of those with less than a high school diploma

Required Revitalization Efforts

Consolidate Municipal Buildings	Increase Available Commercial Space	Promote Complete Streets	Mitigate Flood Risks, Increase Resilience & State of Good Repair	Increase Public Health & Enviro. Justice
Design & Engineering Documents for the construction of a new building at the Former Risdon site/current transfer station: 1. DPW Building 2. Ambulance Building	The construction of a new municipal building will unleash the economic potential of valuable commercial space. Promotion of grand list growth & tax revenue generation from the sale of existing BON properties that will be added to the grand list.	Repair & replacement of sidewalks along a portion of Scott Street & Nettleton Area.	Stormwater drainage upgrades in the Nettleton Area, as well as sidewalk upgrades.	Finalize Brownfield Remediation at the Former Risdon Site (Gap Financing)

2013 Flooding Event – Rubber Avenue Area

Rubber Avenue Municipal Sites

Name	Address	Acreage	Current Use	Final End Use Determined?	Zoning
Former Risdon Site	0 Andrew Ave. (AKA 34 Andrew Ave)	11.96	Transfer Station	DPW Garage & Ambulance	Commercial - DD
Former Recycling Center	226 Rubber Ave.	1.76	Floral Shop	Commercial Building	Commercial – RA1
Naugatuck Ambulance & DPW Offices	246 Rubber Ave.	.63	Ambulance	Commercial Building	Commercial – RA1
Naugatuck DPW Garage	510 Rubber Ave.	1.6	DPW	Commercial Building	Commercial – RA1
Naugatuck High School	543 Rubber Ave.	52.8	High School	Yes	Commercial – RA1
Parks & Recreation Department	607 Rubber Ave.	3.78	Parks & Rec.	Yes	Commercial – RA1

Rubber Avenue – On-Going Revitalization Efforts

This area has seen investments totaling over <u>$92.6M</u> in the last 13 years.

- BON received a $10,262,158 LOTCIP award. Construction will soon begin. SOW includes:
  - Reconstruction of Rubber Avenue from Melbourne Street (west) to Elm Street (east) & construction of a roundabout at the intersection of Route 63 & Rubber Ave.
- In the last 10 years, an $81M renovation was completed at Naugatuck High School, located on Rubber Avenue.
- BON invested $400,000 to purchase the Former Risdon Site in 2019.
  - The USEPA & NVCOG have invested $550,000 in remediation work on the site.
- BON received a $475,000 HUD Small Cities Grant of $475,000 to address drainage in the area in 2010.

Former Risdon Site, Current Transfer Station

Mitigate Flood Risks, Increase Resilience & State of Good Repair – Stormwater Drainage

- This grant seeks gap funding to replace stormwater drainage piping off of Rubber Avenue along the following streets:
  - Aetna Street
  - Cliff Street
  - Le Clair Court
  - Lynn Road
- This area, known as the Nettleton area, is higher elevation than Rubber Avenue.
- Upon heavy rainfall, the current stormwater piping does not have proper capacity and the stormwater floods Rubber Avenue.
- In 2010, the Borough received a $475,000 HUD Small Cities grant to complete repair and replacement of stormwater drainage piping in the area, however the grant did not include these streets. CIF funding would complement the previously awarded grant.

Consolidate Municipal Buildings
DPW & Ambulance

Current DPW Garage Site

Current DPW Garage Site

Current Ambulance & DPW Office Site

Increase Available Commercial Space

- In total, BON maintains municipal control of over 72.53 acres of land along Rubber Avenue.
- 58.34 have final end uses, while 14.19 acres require redevelopment.
- The three remaining municipal sites that require redevelopment include: DPW, Ambulance, and Former Risdon Site.
- These sites currently generate no tax revenue, as they are municipally owned.
- DPW building is located directly across from Naugatuck High School. Proposed end use would cater business to students & teachers.
  - See picture to the right.
- DPW & Ambulance sites are highly valuable commercial property – several interested parties have approached the BON with interest.
  - Sites will be placed back on the tax rolls, increasing grand list growth & quality of life for residents.
  - The sites are zoned for their proposed end use as commercial.

View of Naugatuck High School from DPW Site

Promote Complete Streets (Sidewalk Repair & Replacement – Scott Street & Nettleton Area)

- This grant would seek funding for sidewalk repair & replacement along a portion of Scott Street, as well as the Nettleton Area.
- Rubber Avenue itself will be revitalized by a $10.2M LOTCIP investment, promoting increased walkability in this highly trafficked area of the BON (See photos to the left).
- CIF funding would expand such efforts to Scott Street, as well as the Nettleton Area.
- The Borough has recently implemented a town-wide sidewalk program and allocated $200,000 in FY2023-24 to the program.

Increase Public Health & Environmental Justice – Finalize Brownfield Remediation

- The Borough has received $550,000 from the USEPA's RLF grant program, sub-awarded through the NVCOG, to commence remediation on the Former Risdon Site.

- Under this CIF grant application, the Borough would seek gap financing to finalize remediation which would include:
  - Post-remediation closure documents
  - Groundwater monitoring
  - Capping, as per the site's RAP

- If awarded, such funding would ensure the complete cleanup of nearly 11 acres of brownfield land in this area of the Borough.

Former Risdon Site

Connection to POCD

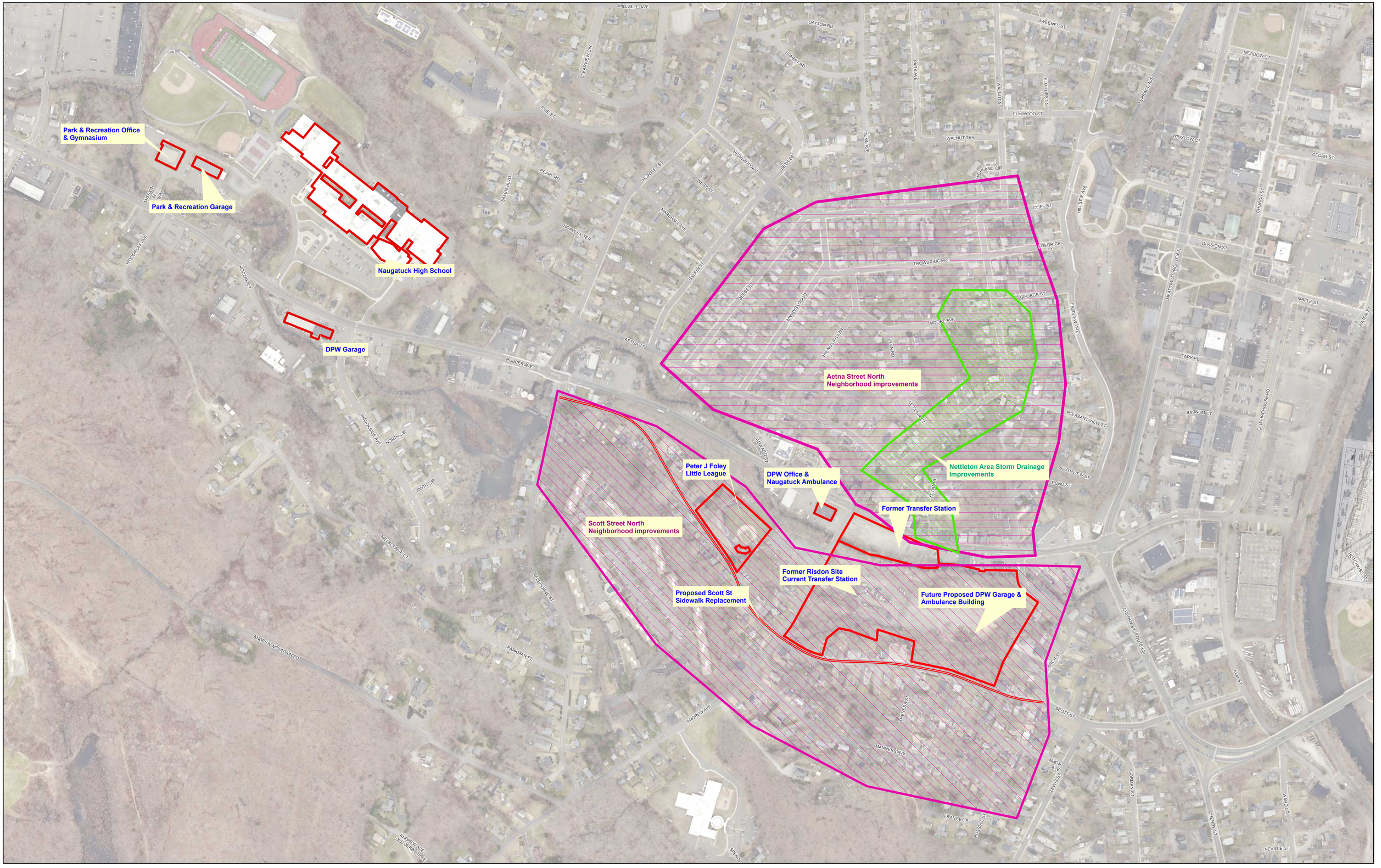
- Rubber Avenue is a targeted area of Revitalization & Investment, included in the Borough's draft 2023 Plan of Conservation & Development ("POCD")
  - Draft POCD states the following:
    - "Parcels located along Rubber Avenue have been identified as sites of opportunity for commercial use."
    - "Several key redevelopment opportunity sites occur in the core of the community and along major arterial roads including the Former General DataComm Property on Rubber Avenue…Town property on Rubber Avenue where the recycling and public works facilities could be redeveloped."
    - "Areas of the Borough that contain high priority, developable brownfield sites include areas located along Rubber Avenue."
- It is included in the BON's TIF district as an area targeted for revitalization

THANK YOU!

QUESTIONS OR COMMENTS CAN BE EMAILED TO:

DANIELLE.GOEWEY@NAUGATUCK-CT.GOV

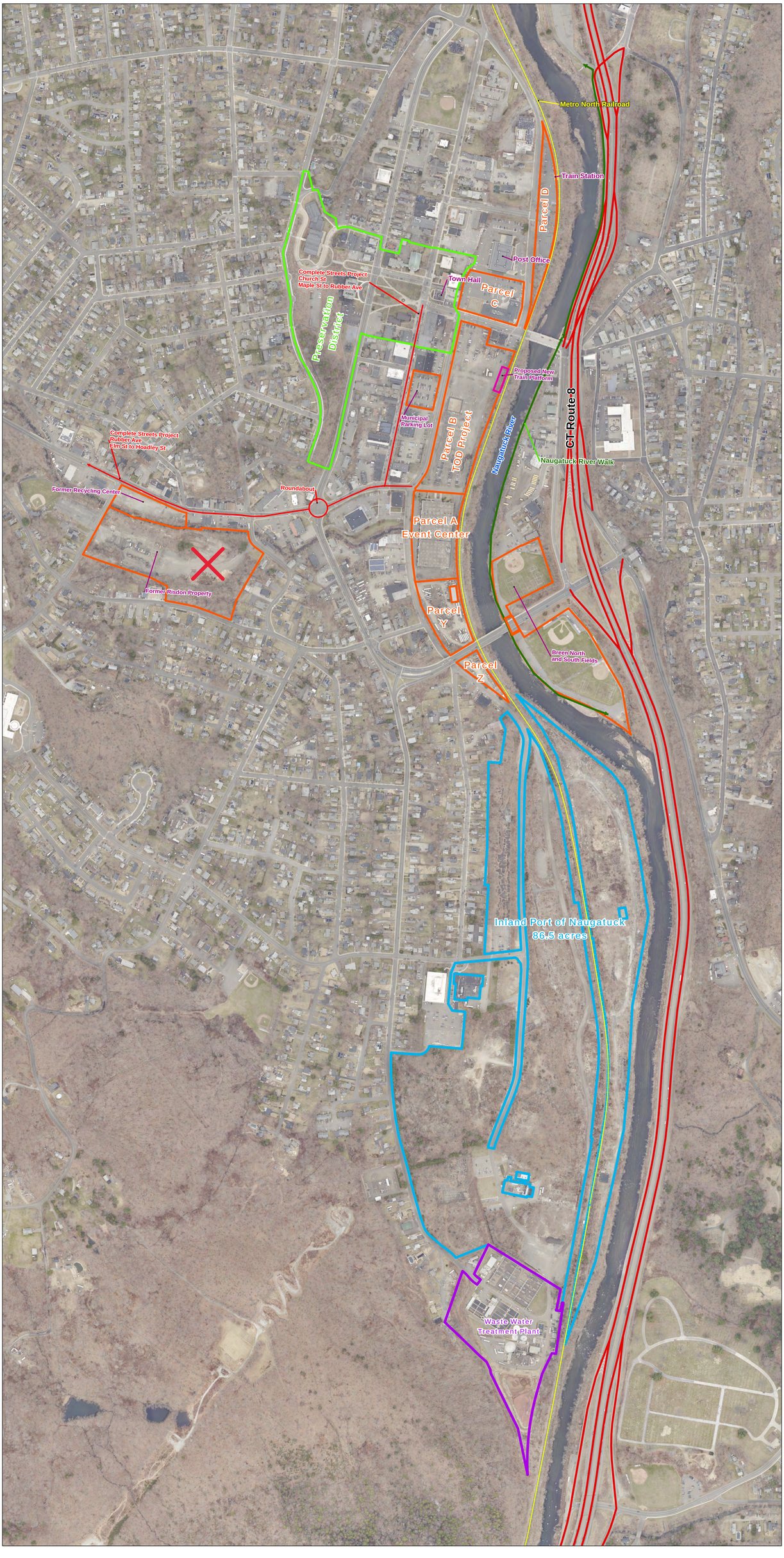
PLEASE EMAIL COMMENTS OR QUESTIONS BY TUESDAY DECEMBER 12, 2023

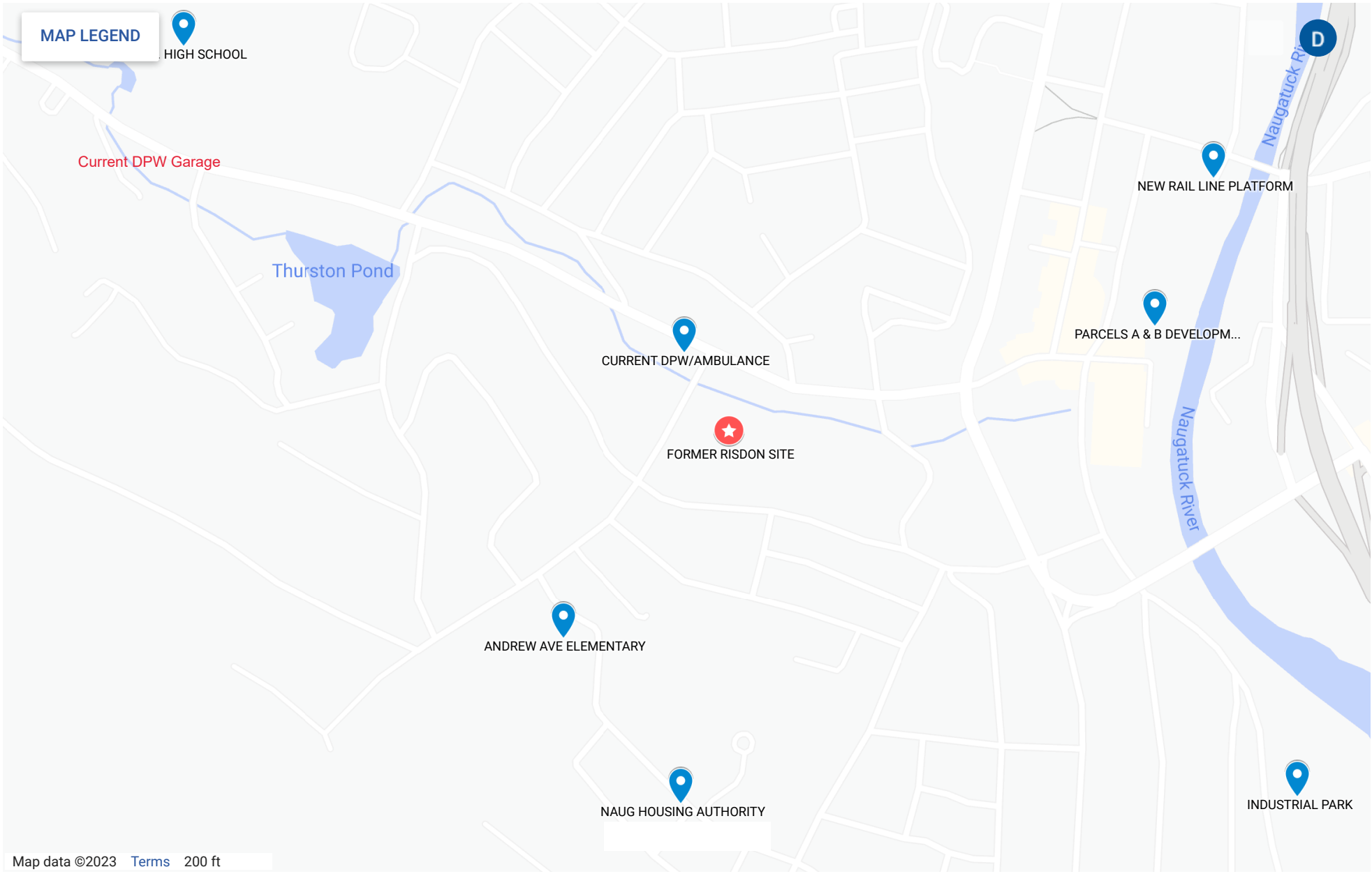


N

0 120 240 480 Feet

Rubber Avenue Revitalization Project


Metro North Railroad
Train Station
Parcel D
Post Office
Town Hall
Parcel C
Complete Streets Project
Church St
Maple St to Rubber Ave
Preservation District
Proposed New Train Platform
Municipal Parking Lot
Parcel B
TOD Project
Naugatuck River
CT Route 8
Naugatuck River Walk
Complete Streets Project
Rubber Ave
Elm St to Hoadley St
Former Recycling Center
Roundabout
Parcel A
Event Center
Former Risdon Property
Parcel Y
Parcel Z
Breen North and South Fields
Inland Port of Naugatuck
86.5 acres
Waste Water Treatment Plant
N
0
500
1,000 Feet
1 inch = 150 feet
TOD District
Lanxess Property
Waste Water Treatment Plant
Borough of Naugatuck
Downtown Revitalization / Inland Port

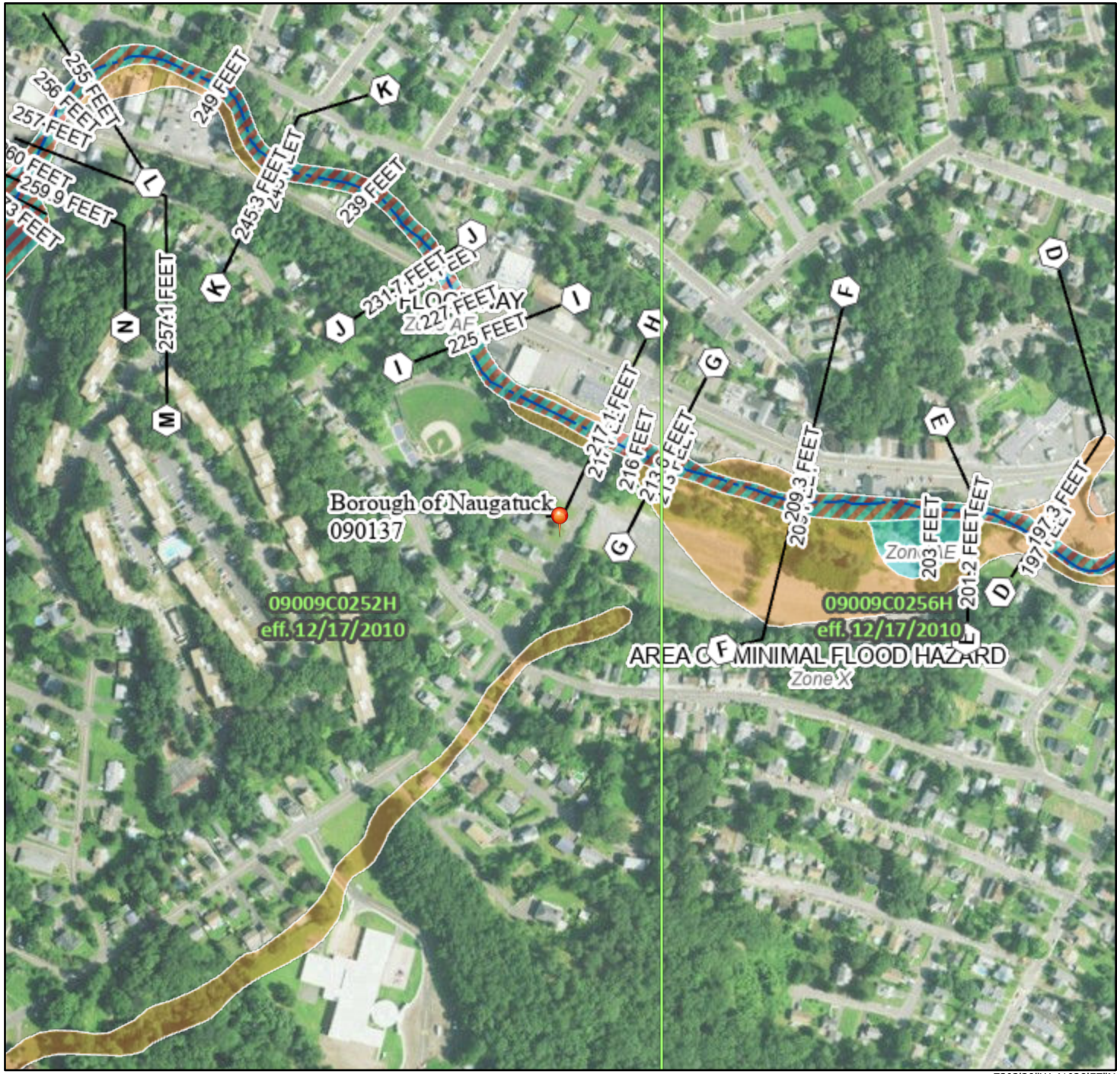

MAP LEGEND
HIGH SCHOOL
Current DPW Garage
Thurston Pond
CURRENT DPW/AMBULANCE
FORMER RISDON SITE
ANDREW AVE ELEMENTARY
NAUG HOUSING AUTHORITY
NEW RAIL LINE PLATFORM
PARCELS A & B DEVELOPM...
Naugatuck River
INDUSTRIAL PARK
D
Map data ©2023 Terms 200 ft


Rubber Ave
Aetna St
Pond St
Andrew Ave
Risdon St
Scott St
Scott St
200 feet
50 m
© Vexcel Imaging, © 2023 Microsoft Corporation

National Flood Hazard Layer FIRMette

FEMA

73°4'7"W 41°29'24"N



73°3'30"W 41°28'57"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/30/2023 at 3:44 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

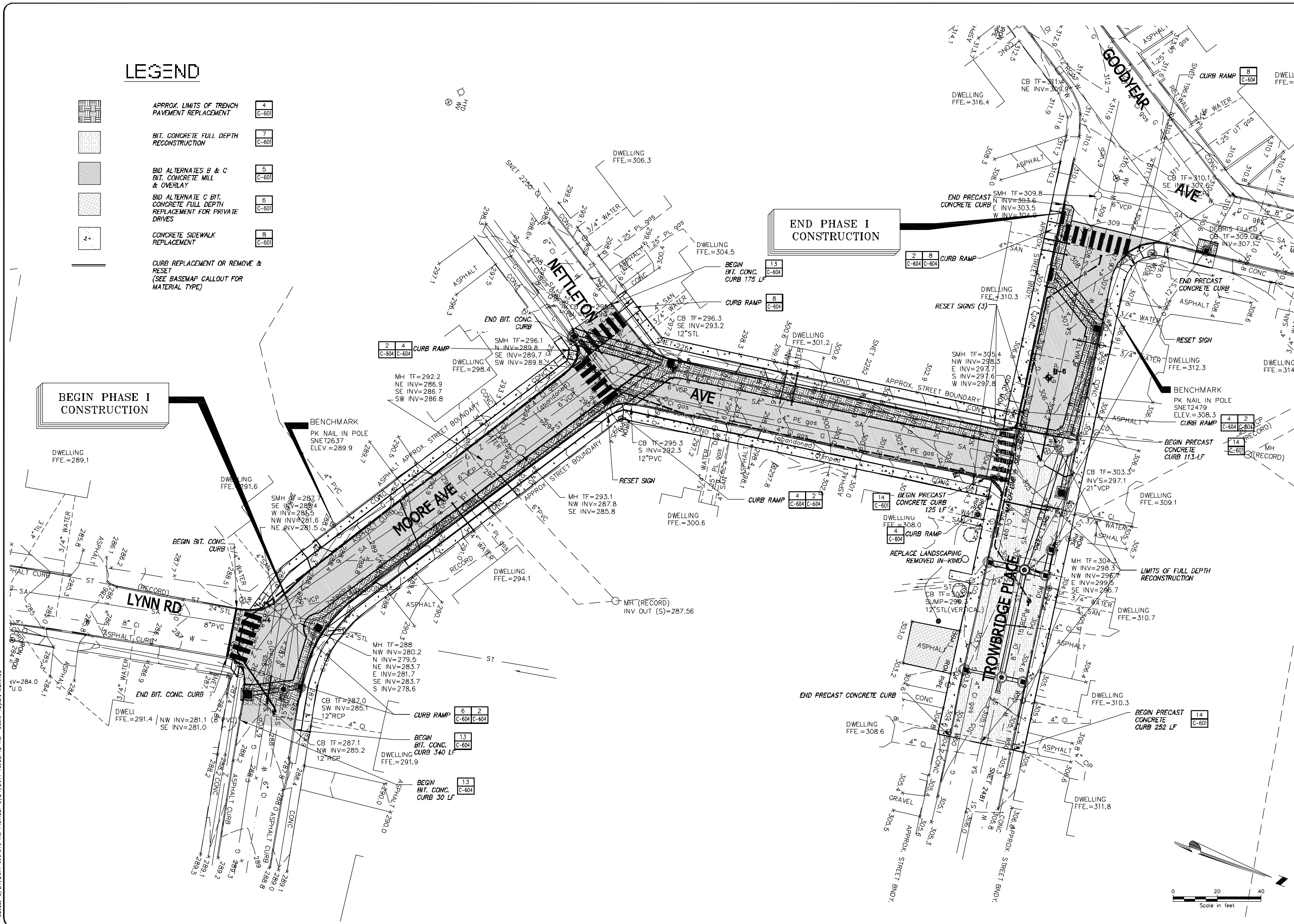
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.


AHEAD
FOR LEASE
SALE - LEASE
FIRE LINE DO NOT CROSS


SLOW
AHEAD
FIRE LINE DO NOT CROSS


ST PADDYS DAY
LUNCH DINNER
TWO BROTHERS
DINER · RESTAURANT


Ben's



No.	Submittal / Revision	App'd	By	Date

BOROUGH OF NAUGATUCK
229 CHURCH STREET
NAUGATUCK, CT 06770

CHA
2139 Silas Deane Highway, Suite 212 · Rocky Hill, CT 06067-2336
Main: (860) 257-4557 · www.chacompanies.com

Designed: MWT | Drawn: MWT | Checked:

PHASE I
STORM SEWER IMPROVEMENTS
NETTLETON AVENUE

LAYOUT PLAN

Issue Date: 8/11 | Project No.: 20466 | Scale: AS NOTED

C-101

Naugatuck DPW Draft Facility Requirements.

Proposed Facility needs

Office - including	1,000	SF
Bathroom 100 sf		
Reception 200 Sf		
2 private offices 400 SF		
File room 300 sf		
Vehicle maintenance & repair	8,000.00	SF
including 2 offices		
3 pull through bays 25x80'		
25'x80' parts storage and offices		
Training/brake/lunch/resting room seat 30	2,000.00	SF
m/F Bathroom & showers		
Loccer room 30 lockers		
Vehicle Storage		
14- 25X 80 ' vehicle bays pull through	28,000.00	SF
2 of bays set up for truck washing.		
Total SF	**39,000**	SF

45 car parking spaces

RUBBER AVENUE

ARCH STREET

ANDREW STREET

AMBULANCE BLDG. 90'x45'

RECYCLING AREA

±6,000 S.F. BREAK ROOM & STORAGE

TRUCK BAYS 200'x120'

±6,000 S.F. BREAK ROOM & STORAGE

±75'

±210'

±135'

±140'

±75'

100'x20' COVERED STORAGE

SCALE: 1"=40'
DATE: 8/31/22

Public Works

34 Andrew St
Naugatuck, CT

0 40 80 120
Feet
1 inch equals 40 ft

SLR
99 REALTY DRIVE
CHESHIRE, CT 06410
203.271.1773

74' 8 5/8"

Training Room

Closet

Bunk Room

8' 0" x 8' 0"

Bath w/shower

8' 0" x 4' 0"

Bath w/shower

8' 0" x 4' 0"

Bunk Room

8' 0" x 8' 0"

Lockers

MedicalSupply room

Maint Storage

Bathroom

Bunk Room

8' 0" x 8' 0"

Kitchen

Shelving and Storage

Supervisors

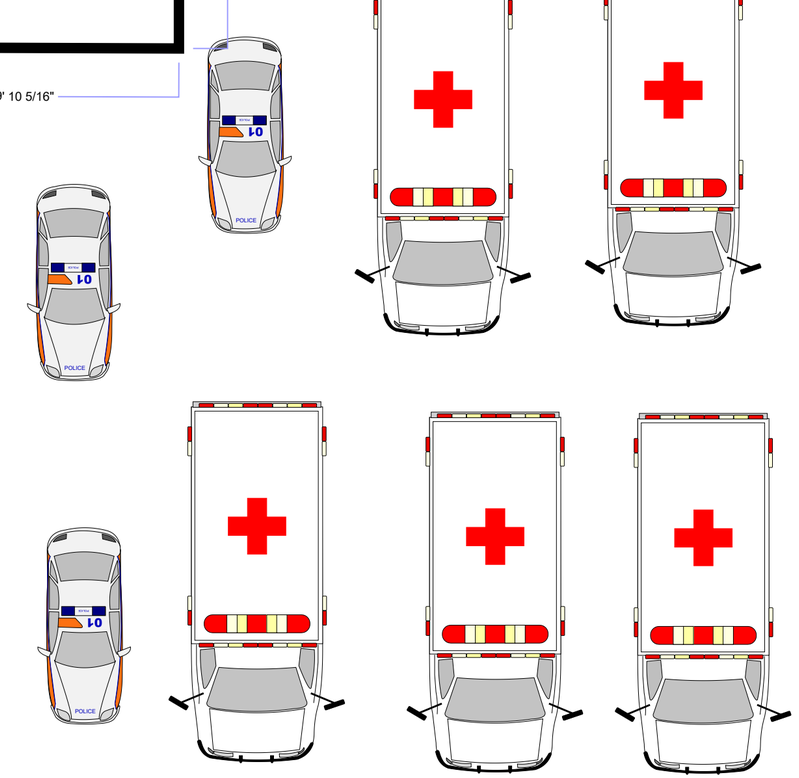
Crew Space TV room

Chief's Office

Admin Sup Office

Works space

Entry Way



43' 2"

45' 2 1/8"

53' 8 13/16"

Stormwater Management Report

Nettleton Avenue Neighborhood

Borough of Naugatuck
New Haven County
State of Connecticut

October, 2009

CHA Project Number: 20466

Prepared by:

2139 Silas Deane Highway
Suite 212
Rocky Hill, CT 06067-2336
(860) 257-4557

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1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

The Nettleton Avenue neighborhood lies west of Meadow Street and north of Rubber Avenue in the Borough of Naugatuck, CT (see Figure 1). Many of the residents who live along the northern ends of Goodyear Avenue and Nettleton Avenue, the western ends of Trowbridge Place and Moore Avenue and along Lynn Road and LeClair Court have reported experiencing periodic flooding during heavy rainfall events over the past 40 years. Symptoms reported range from elevated groundwater that rises during such events to water flowing overland across residential lots and into some lower levels of their houses. Most notably, large amounts of water are reported to have flowed across the properties located between the western ends of Trowbridge Place and Moore Avenue.

Storm drains are typically designed to catch and convey storm water runoff during a prescribed design storm. These storms are referred to as a 1-Year, 2-Year, 10-Year, etc. storm referring to their statistical likelihood of occurring during any one year period. Thus a 1-year storm would have a near 100% statistical chance of occurring in any given year, a 2-Year storm would have a 50% chance of occurring during any given year, a 10-Year storm would have a 10% chance of occurring in any given year, and so forth. When actual storm events exceed the design storm for which a piped drainage system is designed, the excess storm water runoff typically runs down the street. The street is used as an overflow channel. When the street's capacity is exceeded, water will find and follow the path of least resistance to reach the watershed's natural low point, in this case the Long Meadow Pond Brook. Runoff from the Nettleton Avenue neighborhood enters the Brook opposite the intersection of Aetna Street and Rubber Avenue through a 30" diameter concrete culvert.

1.2 EXISTING CONDITION CHARACTERISTICS

The Borough of Naugatuck provided Geographic Information System (GIS) mapping of the drainage area that included known pipe locations, sizes, inlets and outlets; 10' contour interval topography (approximated from USGS topographic mapping); aerial photos; watershed boundaries; and tax mapping. CHA utilized this mapping to make a detailed reconnaissance of the neighborhood to further refine the existing information. CHA measured pipe diameters, pipe depths and elevations of the storm drainage structures along the collector pipe and determined the relative elevations of existing storm drains and catch basin grates. CHA also refined the watershed boundary based on field observations. Elevations of the existing drainage system were referenced to an assumed elevation of 500 at the top of the grate of the catch basin located on the south side of

Rubber Avenue at its intersection with Aetna Street. This assumed datum was purposely not related to the topographic datum due to the approximate nature of the latter.

The watershed contains a total of approximately 96 acres, and is approximately 40% impervious, including such water barriers as roof tops, asphalt roadways, driveways and sidewalks. Land use is predominately residential. The terrain within the watershed is relatively steep, having an average slope of 7%. A map of the Nettleton Avenue neighborhood's watershed showing watershed boundaries and existing known drainage pipes is illustrated in Figure 1.

As part of their soil classification system, the USDA Natural Resource Conservation Service (NRCS) assigns each soil series to a hydrologic soil group (HSG). The HSG is a four letter index (A-D) that is intended to indicate the relative potential for a soil to generate storm water runoff. NRCS describes soils in HSG B as "...having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained to well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission." NRCS describes HSG C soils as those "...having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission." HSG B and C soils make up most of the soils within the study watershed. Figure 2 is a copy of the NRCS map of soil types along with descriptions of each soil and its drainage classification.

Residents of the neighborhood were invited to attend an informational meeting with the Mayor, Borough Engineer, and a representative of CHA on the evening of September 9, 2009. At the meeting, the scope of the study was reviewed and the residents were asked to provide input regarding the flooding they have witnessed and also any comments they might offer regarding the perceived cause of the flooding. A summary of the comments received is summarized on Figure 3 which also provides a key to the location of the house each resident occupies.

Some residents commented that they had experienced water rising through the floors of their homes. This is often caused by rising groundwater, and improvement of the storm drain system may reduce this problem, but is unlikely to eliminate it. The resident at 135 Highland Avenue commented that he knew of a 12" clay pipe that extended under his and other houses on his side of the street. This is likely a "relic" pipe that should have been filled when it was abandoned. Such pipes often collect groundwater and convey it to places where it

damages property. Again, this type of problem is not directly impacted by improvements to the storm drainage system. However, if it can be found, the pipe might be connected to the drainage system to provide a release for the groundwater.

Residents in the area east of the northern ends of Nettleton Avenue and Goodyear Avenue, between Trowbridge Place and Moore Avenue described being flooded by surface waters that overflow the drainage system in the adjacent streets. The resident at 75 Goodyear Avenue described water backing up into the basement from Trowbridge Place during heavy storms. Residents along the east side of Nettleton Avenue and the north side of Moore Avenue describe water flowing over the curbs on the south side of Trowbridge Place and then through their yards causing water damage during heavy rainfall events. Such flooding was reported to have occurred every one or two years.

During the site reconnaissance, a low point was observed in Trowbridge Place about 50 feet east of its intersection with Nettleton Avenue. When the drainage system is overcome by the runoff, water builds up in this low point until it overflows the curb and runs through the yards between Trowbridge Place and Moore Avenue. Other similar low points exist on the south side of Highland Avenue opposite Dunn, and on the south side of Trowbridge Place at the 4th house east of its intersection with Nettleton Avenue.

Generally, drainage pipes were of various materials having relatively small diameters. Most manholes were constructed of brick and were in surprisingly good condition. However, video tapes of the pipes between Highland Avenue and the Long Meadow Pond Brook outlet that were provided by the Borough's Department of Public Works reveal that the existing pipes have frequent cracks, breaks, misaligned joints, and erosion and are generally in poor to fair condition. Some short sections of the pipes appeared to be in imminent danger of collapse. Catch basins varied from modern, relatively new construction with new 24"x 48" steel grates to very old structures having smaller openings often overgrown with vegetation or trash that obstructed flow into the system. One catch basin located at the intersection of Hoadley Street and Highland Avenue had a double grate intended to enable it to collect more runoff. However, when observed during a rainstorm, water flowed past the opening due to adjacent pavement grades. Similar conditions were observed at the intersection of Highland Avenue and Seth Street.

2.0 PROJECT OBJECTIVES

The objective of this project was to identify deficiencies that contribute to flooding in the Nettleton Avenue neighborhood, and to suggest potential measures that could be constructed to eliminate or reduce the severity of the reported flooding.

3.0 HYDROLOGIC EVALUATION

3.1 METHODOLOGY

Existing and observed data were used to construct a computer model of the watershed and analyze how water passes through it during various storm events. 1", 2", 1-Year (2.7"), 2-Year (3.3"), 10-year (5.0") and 25-Year (5.6") storms were modeled to analyze the relative capacity of existing pipes and to test proposed alternatives.

Runoff curve numbers and times of concentration were computed using standard NRCS TR-55 methodology. Additionally, peak stormwater flows and hydrographs for the existing conditions and for five proposed condition alternatives were computed using HydroCAD® (Version 9.00) Storm Water Modeling Software.

3.2 EXISTING CONDITION HYDROLOGY

For the purposes of the existing condition analysis, two design points were defined to characterize the natural drainage patterns of the watershed. Design Point 1 (DP-1) is located at the 30" outlet at Long Meadow Pond Brook. Design Point 2 (DP-2) is located on Hoadley Street where a portion of the runoff is currently diverted from the watershed under study to a neighboring watershed. Figure 1 is an Existing Storm Water Site Plan that illustrates the watershed, the major components of the existing drainage system, and labels each of the key points that were analyzed within the drainage system. Subcatchment areas and their times of concentration are also described on the plan. The results of the existing condition analysis are summarized in Table 3-1 on the following page. Detailed computations are included in Appendix B.

A review of Table 3-1 reveals that the existing system is capable of conveying a storm with a total rainfall of 1" and begins to experience flooding when a 2" storm occurs. Storms of this magnitude occur at frequent intervals, often several times each year. During a 1-Year storm event, the existing pipe system will overflow and the severity of the overflow is increased with increased rainfall depths.

Table 3-1

Summary of Performance of Existing Drainage System

Prepared by Clough Harbour & Associates, LLP

October, 2009

Node	Location	Overflow Peak Flow Rate / Volume in CFS and AF					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
N2	Rubber/Aetna	0 / 0	0 / 0	34.0 / 0.67	63.8 / 1.67	144.6 / 5.21	173.1 / 6.61
N3	Aetna	0 / 0	0 / 0	25.6 / 0.40	57.9 / 1.32	149.8 / 4.85	177.8 / 6.26
N4	Cliff/LeClair	0 / 0	0 / 0	0 / 0	26.4 / 0.30	120.8 / 2.88	161.3 / 4.26
N6	Lynn	0 / 0	0 / 0	16.1 / 0.20	50.9 / 0.96	139.5 / 4.17	167.1 / 5.45
N7	Lynn/Moore	0 / 0	0 / 0	33.2 / 0.59	63.6 / 1.56	151.5 / 5.19	179.3 / 6.58
N8	Trowbridge	0 / 0	0 / 0	18.0 / 0.24	47.2 / 0.94	134.1 / 4.06	162.7 / 5.31
N9	Beebe/Highland	0 / 0	2.3 / 0.01	30.4 / 0.65	55.5 / 1.48	132.4 / 4.67	160.1 / 6.00
N11	Highland/Seth	0 / 0	0 / 0	15.5 / 0.25	35.0 / 0.78	95.5 / 3.01	117.2 / 3.99
N13	Hoadley	0 / 0	11.3 / 0.29	28.0 / 0.94	43.6 / 1.67	93.3 / 4.48	111.0 / 5.67
N18	Hoadley	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
N22	Hoadley/Summit	0 / 0	8.3 / 0.19	24.4 / 0.74	39.9 / 1.39	87.3 / 3.77	104.0 / 4.78
N25	Hoadley/Millville	0 / 0	2.0 / 0.02	3.6 / 0.08	7.2 / 0.19	20.6 / 0.70	26.0 / 0.95
N26	Millville/Phyllis	0 / 0	6.9 / 0.14	18.9 / 0.59	30.5 / 1.09	65.1 / 2.92	77.5 / 3.68
DP2	Hoadley/Pine						
N14	Highland/Hoadley	0 / 0	0 / 0	0 / 0	0.3 / 0.00	2.3 / 0.03	3.2 / 0.5

Node	Location	Peak Flow Exiting Node (CFS)					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River	2.6	36.8	77.9	118.1	241.0	285.8
N2	Rubber/Aetna	2.6	36.8	77.9	118.1	241.0	285.8
N3	Aetna	2.6	36.7	77.4	117.3	239.1	283.5
N4	Cliff/LeClair	1.6	31.1	68.2	104.5	215.9	256.6
N6	Lynn	1.6	29.6	63.7	97.0	198.1	234.8
N7	Lynn/Moore	1.6	29.6	63.7	97.0	198.1	234.8
N8	Trowbridge	1.6	26.3	55.9	84.5	170.8	201.9
N9	Beebe/Highland	1.0	22.1	48.4	73.8	151.3	179.2
N11	Highland/Seth	0.4	14.8	34.5	53.7	112.3	133.4
N13	Hoadley	1.1	16.7	33.1	49.0	99.0	117.3
N18	Hoadley	1.1	8.3	8.6	8.8	11.0	11.6
N22	Hoadley/Summit	1.1	16.6	33.0	48.7	98.3	116.6
N25	Hoadley/Millville	1.0	10.8	12.2	15.8	28.5	33.4
N26	Millville/Phyllis	0.5	11.2	23.3	35.4	72.8	86.8
DP2	Hoadley/Pine	1.2	7.2	7.7	8.1	10.2	11.1
N14	Highland/Hoadley	1.2	7.2	7.7	8.1	10.2	11.1

3.3 PROPOSED SYSTEM HYDROLOGY

The first step in the process of developing solutions to mitigate the flooding that has occurred in this neighborhood was to create and evaluate a replacement system that generally follows the alignment of the existing collector pipe. Following the current alignment not only approximates the natural flow patterns of the terrain, but also allows the Borough to take advantage of existing inlets and local connector pipes. A collector system referred to in this report as Increment 3 was sized to contain runoff from a 10-year storm within the pipes and associated structures. In other words, once in the pipes, runoff generated by a 10-year storm event would not overflow the system's structures and be re-introduced to the road surfaces. This would allow runoff from storms of greater magnitude than the 10-year storm to be conveyed in the pipes as they develop and to utilize the roads as overflow channels during their peak periods of runoff. Roads in the neighborhood are currently called upon to convey runoff overflow during much less intense storms.

Next, two incremental improvement steps referred to as Increments 1 and 2 were evaluated that would reduce the flooding described above. Increment 1 replaces the existing drainage pipes between Highland Avenue and Moore Avenue with the large diameter pipes shown in the total replacement alternative (Increment 3). Increment 2 extends the replacement pipes from Moore Avenue to Cliff Street.

Additionally, immediate improvements are suggested later in the report that would result in marginal reductions in flooding by making marginal increases to the existing system's collection and conveyance capacity.

The overflow of storm water runoff at the low point in Trowbridge Place (designated as N8 and PN8 in the drainage models presented in Appendices for existing and proposed conditions respectively) serves as a good proxy for system performance in the Nettleton Avenue neighborhood. Table 3-2 compares the performance of the three incremental plans to that of the existing system at that location. Note that the existing 12" bypass pipe that conveys runoff from the Nettleton Avenue watershed to the lower part of Hoadley Street was retained in both Increments 1 and 2. However it was eliminated in Increment 3 since the proposed replacement pipes would be large enough to carry that water so Hoadley Street could be relieved of the burden. The elimination of this small diversion resulted in a small overflow of the curb at Trowbridge Place during the 25-Year storm event in Increment 3.

Table 3-2

Comparative Performance of Proposed Incremental Improvements

Increment	Overflow Occurs
Existing	1-Year Storm
1	10-Year Storm
2	25-Year Storm
3	25-Year Storm

A variation on the total replacement solution and its incremental alternatives was also considered whereby the Hoadley Street bypass was improved so that it would divert all runoff originating above the intersection of Highland Avenue and Hoadley Street from the pipe system that drains the Nettleton Avenue neighborhood. To accomplish this would require construction of approximately 1200 additional lineal feet of 42" storm drain to carry the diverted runoff from the intersection of Highland Avenue and Hoadley Street down Hoadley to a discharge point where Hoadley Street crosses the Long Meadow Pond Brook just north of Rubber Avenue. The 42" pipe size would only carry the water originating above Highland Avenue. If this diversion was to be implemented, the design would actually likely call for a progressively larger pipe so that the system could also carry the runoff that originates between Highland Avenue and Rubber Avenue. The benefit this alternative offers is to decrease the size of the pipes needed to resolve the flooding in the Nettleton Avenue neighborhood. Analysis showed that the decrease in pipe size realized is modest (reduced 54" pipes to 42" etc.). The majority of the cost of constructing new pipelines in existing roads is that of trenching, backfilling and replacing surface improvements. The differential in the price of the pipe is small by comparison. As will be seen in a later section of the report, the total diversion alternative appears to be a financially viable option, since its cost is slightly less than the cost of total replacement of the existing system. However, to phase the project by constructing the Hoadley Street diversion first would not be very effective because without also constructing new pipes between Highland Avenue and Moore Avenue, construction of the Hoadley Street pipe alone would only decrease the expected frequency of flooding at Trowbridge Place from once every year to once every 2 years.

Overflow rates in cubic feet per second (CFS) and volumes in acre-feet (AF) at representative points throughout the system for each alternative and for the various storms evaluated are provided in tables 3-3 through 3-7 on the following pages. A comparison of these tables reveals that where partial pipe replacements

Table 3-3

Summary of Performance of Existing Drainage System With New from Highland to Moore

Prepared by Clough Harbour & Associates, LLP — **Increment 1**

October, 2009

Node	Location	Overflow Peak Flow Rate / Volume in CFS and AF					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
N2	Rubber/Aetna	0 / 0	0 / 0	34.0 / 0.67	63.8 / 1.67	144.6 / 5.21	173.1 / 6.61
N3	Aetna	0 / 0	0 / 0	25.6 / 0.40	57.9 / 1.32	149.8 / 4.85	177.8 / 6.26
N4	Cliff/LeClair	0 / 0	0 / 0	0 / 0	26.4 / 0.30	120.8 / 2.88	161.3 / 4.26
N6	Lynn	0 / 0	0 / 0	16.1 / 0.20	50.9 / 0.96	139.5 / 4.17	167.1 / 5.45
PN7	Lynn/Moore	0 / 0	0 / 0	33.2 / 0.59	63.6 / 1.56	151.5 / 5.19	179.3 / 6.58
PN8	Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	62.3 / 0.73	81.86 / 1.39
PN9	Goodyear/Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	44.13 / 0.55	58.6 / 1.06
PN10	Beebe/Highland	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	60.59 / 0.67
N11	Highland/Seth	0 / 0	0 / 0	14.6 / 0.23	33.2 / 0.74	88.6 / 2.77	109.3 / 3.68
N13	Hoadley	0 / 0	11.3 / 0.29	28.0 / 0.94	43.6 / 1.67	93.3 / 4.48	111.0 / 5.67
N18	Hoadley	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
N22	Hoadley/Summit	0 / 0	8.3 / 0.18	24.4 / 0.74	39.9 / 1.39	87.3 / 3.77	104.9 / 4.79
N25	Hoadley/Millville	0 / 0	2.0 / 0.02	3.6 / 0.08	7.2 / 0.19	20.6 / 0.70	26.0 / 0.95
N26	Millville/Phyllis	0 / 0	6.9 / 0.14	19.0 0.59	30.5 / 1.09	65.1 / 2.92	77.6 / 3.68
DP2	Hoadley/Pine						
N14	Highland/Hoadley	0 / 0	0 / 0	0 / 0	0.3 / 0.00	2.3 / 0.03	3.2 / 0.05

Node	Location	Peak Flow Exiting Node (CFS)					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
N2	Rubber/Aetna	2.6	36.8	77.9	118.1	241.0	285.8
N3	Aetna	2.6	36.7	77.4	117.3	239.1	283.5
N4	Cliff/LeClair	1.6	31.1	68.2	104.5	215.9	256.6
N6	Lynn	1.6	29.6	63.7	97.0	198.1	234.8
PN7	Lynn/Moore	1.6	29.6	63.7	97.0	198.1	234.8
PN8	Trowbridge	1.6	26.3	55.9	84.5	170.8	201.9
PN9	Goodyear/Trowbridge	1.0	22.1	48.4	73.8	151.3	179.2
PN10	Beebe/Highland	1.0	22.1	48.4	73.8	151.3	176.2
N11	Highland/Seth	0.4	17.8	34.5	53.7	112.3	133.4
N13	Hoadley	1.1	16.7	33.1	49.0	99.0	117.3
N18	Hoadley	1.1	8.3	8.6	8.8	11.0	11.6
N22	Hoadley/Summit	1.1	16.6	33.0	48.7	98.3	116.6
N25	Hoadley/Millville	1.0	10.8	12.2	15.8	28.5	33.4
N26	Millville/Phyllis	0.5	11.2	23.3	35.4	72.9	86.8
DP2	Hoadley/Pine						
N14	Highland/Hoadley	1.2	7.2	7.7	8.1	10.1	11.1

Table 3-4

Summary of Performance of Existing Drainage System With New from Highland to Cliff

Prepared by Clough Harbour & Associates, LLP — **Increment 2**

October, 2009

Node	Location	Overflow Peak Flow Rate / Volume in CFS and AF					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
N2	Rubber/Aetna	0 / 0	0 / 0	34.0 / 0.67	63.8 / 1.67	144.6 / 5.21	173.1 / 6.61
N3	Aetna	0 / 0	0 / 0	25.6 / 0.40	57.9 / 1.32	149.8 / 4.85	177.8 / 6.26
PN4	Cliff/LeClair	0 / 0	0 / 0	0 / 0	26.4 / 0.30	113.4 / 2.77	147.9 / 4.03
PN6	Lynn	0 / 0	0 / 0	0 / 0	0 / 0	68.9 / 0.93	88.2 / 1.61
PN7	Lynn/Moore	0 / 0	0 / 0	0 / 0	0 / 0	33.4 / 0.28	74.8 / 1.20
PN8	Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
PN9	Goodyear/Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	27.2 / 0.18
PN10	Beebe/Highland	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	10.5 / 0.07
N11	Highland/Seth	0 / 0	0 / 0	14.6 / 0.23	33.2 / 0.74	88.6 / 2.77	109.3 / 3.68
N13	Hoadley	0 / 0	11.3 / 0.29	28.0 / 0.94	43.6 / 1.67	93.3 / 4.48	111.0 / 5.67
N18	Hoadley	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
N22	Hoadley/Summit	0 / 0	8.3 / 0.18	24.4 / 0.74	39.9 / 1.39	87.3 / 3.77	104.9 / 4.79
N25	Hoadley/Millville	0 / 0	2.0 / 0.02	3.6 / 0.08	7.2 / 0.19	20.6 / 0.70	26.0 / 0.95
N26	Millville/Phyllis	0 / 0	6.9 / 0.14	19.0 0.59	30.5 / 1.09	65.1 / 2.92	77.6 / 3.68
DP2	Hoadley/Pine						
N14	Highland/Hoadley	0 / 0	0 / 0	0 / 0	0.3 / 0.00	2.3 / 0.03	3.2 / 0.05

Node	Location	Peak Flow Exiting Node (CFS)					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
N2	Rubber/Aetna	2.6	36.8	77.9	118.1	241.0	285.8
N3	Aetna	2.6	36.7	77.4	117.3	239.1	283.5
PN4	Cliff/LeClair	1.6	31.1	68.2	104.5	215.9	256.6
PN6	Lynn	1.6	29.6	63.7	97.0	198.1	234.8
PN7	Lynn/Moore	1.6	29.6	63.7	97.0	198.1	234.8
PN8	Trowbridge	1.6	26.3	55.9	84.5	170.8	201.9
PN9	Goodyear/Trowbridge	1.0	22.1	48.4	73.8	151.3	179.2
PN10	Beebe/Highland	1.0	22.1	48.4	73.8	151.3	176.2
N11	Highland/Seth	0.4	17.8	34.5	53.7	112.3	133.4
N13	Hoadley	1.1	16.7	33.1	49.0	99.0	117.3
N18	Hoadley	1.1	8.3	8.6	8.8	11.0	11.6
N22	Hoadley/Summit	1.1	16.6	33.0	48.7	98.3	116.6
N25	Hoadley/Millville	1.0	10.8	12.2	15.8	28.5	33.4
N26	Millville/Phyllis	0.5	11.2	23.3	35.4	72.9	86.8
DP2	Hoadley/Pine						
N14	Highland/Hoadley	1.2	7.2	7.7	8.1	10.1	11.1

Table 3-5

Summary of Performance of Proposed Drainage System

Prepared by Clough Harbour & Associates, LLP — **Increment 3**

October, 2009

Node	Location	Overflow Peak Flow Rate / Volume in CFS and AF					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
PN2	Rubber/Aetna	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	10.3 / 0.06
PN3	Cliff/Aetna	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	19.6 / 0.13
PN4	Cliff/LeClair	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	15.6 / 0.9
PN6	Lynn	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	44.2 / 0.37
PN7	Lynn/Moore	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	38.4 / .034
PN8	Nettleton/Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	2.3 / 0.01
PN9	Goodyear/Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	35.9 / 0.29
PN10	Beebe/Highland	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	15.8 / 0.11
PN11	Highland/Seth	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	8.4 / 0.05
PN12	Highland/Hoadley	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	7.9 / 0.06
PN25	Hoadley/Millville	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
PN26	Millville/Phyllis	0 / 0	0 / 0	0 / 0	0 / 0	2.5 / 0.01	29.7 / 0.27
DP2	Hoadley/Pine						

Node	Location	Peak Flow Exiting Node (CFS)					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River	3.6	42.3	83.9	123.6	246.7	292.1
PN2	Rubber/Aetna	3.6	42.3	83.9	123.6	246.7	292.1
PN3	Cliff/Aetna	3.6	42.1	83.4	122.8	244.8	289.8
PN4	Cliff/LeClair	2.6	36.6	74.2	110.0	221.6	262.9
PN6	Lynn	2.6	35.5	69.8	102.5	203.8	241.1
PN7	Lynn/Moore	2.6	35.5	68.8	102.5	203.8	241.1
PN8	Nettleton/Trowbridge	2.6	32.2	61.9	90.1	176.5	208.2
PN9	Goodyear/Trowbridge	2.1	27.5	54.1	79.3	157.0	185.5
PN10	Beebe/Highland	2.1	27.5	54.1	79.3	157.0	185.5
PN11	Highland/Seth	1.4	20.2	40.3	59.3	118.1	139.7
PN12	Highland/Hoadley	1.1	16.7	33.1	49.0	99.0	117.3
PN25	Hoadley/Millville	1.1	16.6	33.0	48.7	98.3	116.6
PN26	Millville/Phyllis	0.5	11.2	23.3	35.4	72.8	86.8
DP2	Hoadley/Pine	0.1	1.0	1.8	2.5	4.6	5.4

Figure 3-6

Summary of Performance of Existing if All Flow is Diverted to Hoadley

Prepared by Clough Harbour & Associates, LLP

October, 2009

		Overflow Peak Flow Rate / Volume in CFS and AF					
Node	Location	1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
N2	Rubber/Aetna	0 / 0	0 / 0	10.2 / 0.13	30.9 / 0.61	84.1 / 2.61	102.1 / 3.42
N3	Aetna	0 / 0	0 / 0	1.58 / 0.01	22.2 / 0.33	78.5 / 2.15	96.9 / 2.92
N4	Cliff/LeClair	0 / 0	0 / 0	0 / 0	0 / 0	43.6 / 0.62	62.1 / 1.08
N6	Lynn	0 / 0	0 / 0	0 / 0	7.6 / 0.06	58.7 / 1.19	76.2 / 1.76
N7	Lynn/Moore	0 / 0	0 / 0	3.5 / 0.02	23.0 / 0.33	72.2 / 1.88	90.0 / 2.55
N8	Trowbridge	0 / 0	0 / 0	0 / 0	3.8 / 0.02	42.5 / 0.79	56.7 / 1.20
N9	Beebe/Highland	0 / 0	0 / 0	1.4 / 0.01	12.4 / 0.17	40.6 / 1.04	50.9 / 1.42
N11	Highland/Seth	0 / 0	0 / 0	0 / 0	0 / 0	3.4 / 0.02	7.4 / 0.06
N13	Hoadley						
N18	Hoadley						
N22	Hoadley/Summit						
N25	Hoadley/Millville						
N26	Millville/Phyllis						
DP2	Hoadley/Pine						
N14	Highland/Hoadley	0 / 0	9.2 / 0.22	26.0 / 0.82	42.4 / 1.51	90.6 / 4.05	108.2 / 5.14

		Peak Flow Exiting Node (CFS)					
Node	Location	1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River	2.6	25.7	50.7	74.5	148.0	175.2
N2	Rubber/Aetna	2.6	25.7	50.7	74.5	148.0	175.2
N3	Aetna	2.6	25.5	50.2	73.7	146.2	172.9
N4	Cliff/LeClair	1.6	20.5	41.3	61.2	123.5	146.6
N6	Lynn	1.6	19.1	36.9	53.8	105.9	125.0
N7	Lynn/Moore	1.6	19.1	36.9	53.8	105.9	125.0
N8	Trowbridge	1.6	15.9	29.2	41.5	78.8	92.3
N9	Beebe/Highland	1.0	11.2	21.0	30.3	58.4	68.7
N11	Highland/Seth	0.4	4.5	8.2	11.7	22.3	26.1
N13	Hoadley						
N18	Hoadley						
N22	Hoadley/Summit						
N25	Hoadley/Millville						
N26	Millville/Phyllis						
DP2	Hoadley/Pine	1.2	17.3	34.4	51.1	102.4	121.3
N14	Highland/Hoadley						

Table 3-7

Summary of Performance of Proposed if All Flow is Diverted to Hoadley

Prepared by Clough Harbour & Associates, LLP — **Alternate**

October, 2009

Node	Location	Overflow Peak Flow Rate / Volume in CFS and AF					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
PN2	Rubber/Aetna	0 / 0	0 / 0	0 / 0	0 / 0	5.6 / 0.3	29.0 / 0.29
PN3	Cliff/Aetna	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	8.1 / 0.04
PN4	Cliff/LeClair	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
PN6	Lynn	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	12.1 / 0.08
PN7	Lynn/Moore	0 / 0	0 / 0	0 / 0	0 / 0	5.1 / 0.02	32.6 / 0.38
PN8	Nettleton/Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
PN9	Goodyear/Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	2.2 / 0.02
PN10	Beebe/Highland	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	3.6 / 0.02
PN11	Highland/Seth	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
DP2	Hoadley/Pine						
PN25	Hoadley/Millville	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
PN26	Millville/Phyllis	0 / 0	0 / 0	0 / 0	0 / 0	2.5 / 0.01	29.7 / 0.27

Node	Location	Peak Flow Exiting Node (CFS)					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River	2.6	25.7	50.7	74.5	148.0	175.2
PN2	Rubber/Aetna	2.6	25.7	50.7	74.5	148.0	175.2
PN3	Cliff/Aetna	2.6	25.5	50.2	73.7	146.2	172.9
PN4	Cliff/LeClair	1.6	20.5	41.3	61.2	123.5	146.6
PN6	Lynn	1.6	19.1	36.9	53.8	105.9	125.0
PN7	Lynn/Moore	1.6	19.1	36.9	53.8	105.9	125.0
PN8	Nettleton/Trowbridge	1.6	15.9	29.2	41.5	78.8	92.3
PN9	Goodyear/Trowbridge	1.0	11.2	21.0	30.3	58.4	68.7
PN10	Beebe/Highland	1.0	11.2	21.0	30.3	58.4	68.7
PN11	Highland/Seth	0.4	4.5	8.2	11.7	22.3	26.1
DP2	Hoadley/Pine	1.2	17.3	34.4	51.1	102.4	121.3
PN25	Hoadley/Millville	1.1	16.6	33.0	48.7	98.3	116.6
PN26	Millville/Phyllis	0.5	11.2	23.3	35.4	72.9	86.8

are considered (Increments 1 and 2), overflows are neither significantly reduced nor increased at locations above and below the replacements. Hydrologic computations for the existing conditions and for each of the five alternatives are contained in Appendices B thru G.

4.0 RECOMMENDED SYSTEM IMPROVEMENTS

4.1 PERIODIC MAINTENANCE AND REPAIR

All catch basins within the watershed should receive periodic maintenance aimed at keeping the inlet grates free of obstructions to flow. Additionally, in several locations pavement grades and/or catch basin grates should be adjusted to match so that runoff enters the catch basins rather than flowing past them. This is especially true of the catch basin at the east corner of Highland Avenue and Hoadley Street and several of the catch basins at Highland Avenue and Seth Street.

4.2 ROAD GRADES AND CURB IMPROVEMENTS

Roads in the Nettleton Avenue neighborhood are relatively old and appear to have been repaved numerous times. The result of repaving is to thicken the asphalt resulting in a reduction in the height of the curbs above the asphalt. This reduction in height decreases the curb's ability to carry storm water runoff. There are also places where residents on the downhill (south) side of Highland Avenue and Trowbridge Place have constructed driveways that grade downward from the edge of the road thus creating a path for runoff to escape the curbing. It appears that water running down Dunn Street during larger storms likely flows across Highland Avenue then flows down driveways and through properties to Trowbridge Place. This water adds to the flow already in Trowbridge Place and accumulates at the low point in Trowbridge Place (about 50 feet east of Nettleton Avenue) where it overflows the curb and drains through the yards between Trowbridge Place and Moore Avenue. The following minor projects should be considered to marginally reduce flooding:

- Reconstruct curb on the south side of Highland Avenue from Dunn Street to Goodyear Avenue. This would also include regarding the first 10 to 20 feet of some existing driveways so that a full 6" high curb can be established.
- Reconstruct curb on the south side of Trowbridge Place beginning at Nettleton Avenue and extending approximately 400 feet east. This would also include regrading the first 10 to 20 feet of some existing

driveways so that a full 6" curb can be established.

- Reconstruct the first 200 lineal feet of Trowbridge Place east of Nettleton Avenue to eliminate the low point so that overflow from the storm drains will flow down the road rather than through the residential properties as it currently does.

4.3 DRAINAGE PIPE REPLACEMENT

In our opinion, as funding allows the Borough should implement a program to replace the existing drainage system in the following increments:

- Increment 1 is illustrated in Figure 4 in Appendix A. New large diameter drainage pipe would be installed to replace existing pipes from Moore Avenue to Highland Avenue.
- Increment 2 is illustrated in Figure 5 in Appendix A. Additional new large diameter drainage pipe would be installed to replace existing pipes from Cliff to Moore Avenue.
- Increment 3 is illustrated in Figure 6 in Appendix A. Additional new large diameter drainage pipe would be installed to replace existing pipes from the Long Meadow Pond Brook outlet to Cliff and from Highland Avenue to the intersection of Millville Avenue and Phyllis Drive.

Once completed, the project outlined above would relieve the existing Hoadley Street drainage system of carrying the overflow at Highland Avenue.

In our opinion, the Borough should not consider the Hoadley Street Bypass Alternative presented in Figure 7 of Appendix A and in Appendix G. Construction required to implement that alternative would be similar to that required for Increments 1 through 3 as described above, except that some of the pipes described in those Increments would be somewhat smaller and an additional large diameter pipe would also be constructed along Hoadley Street from its intersection with Highland Avenue to where is crosses Long Meadow Pond Brook. The results of the analysis presented in Appendix F indicate that little relief would be realized by constructing only the bypass system, so to accomplish a meaningful first phase would necessitate construction of both the bypass and the proposed pipes from Highland Avenue to Moore Avenue. Our recommendation is not to pursue the Hoadley Street Bypass Alternative because the cost to achieve protection from a 10-year storm event using it would far exceed the cost to accomplish the same result using Increment 1 described above.

5.0 STUDY-LEVEL OPINION OF PROBABLE CONSTUCTION COSTS

For purposes of comparing the costs of the various alternatives, unit construction costs for the various sizes of pipe were approximated using current RSMeans Construction Cost Data. Comparative Opinions of Probable Construction Costs for the various options are presented in Table 5-1 on the following page.

SECOND SHEET
PC-180 REV. 1/85

STATE OF CONNECTICUT

RECORDED:

COURT OF PROBATE
[Type or print in black ink.]

COURT OF PROBATE, Naugatuck DISTRICT NO. 21

ESTATE OF/IN THE MATTER OF

Maria M. Branco a/k/a Marie M. Branco, deceased

FORM BEING CONTINUED

Certificate of Devise

SCHEDULE A

an undivided one-half interest in and to all that certain piece or parcel of land together with the building thereon, being Lot 8 on "Map Subdivision of Land of Lionel J. and Helen LeClair Cliff Street, Naugatuck, CT, September 1954 Scale 1" = 20' (Scale reduced in reproduction) on file in the Naugatuck Town Clerk's Office in Map Book 9, Page 49 and bounded as follows:

NORTHERLY: 146.24 feet on land of Wm. L. Walsh, Lynn Road, land of E. Leonard Borg, et ux, and land of George F. McKenna, et ux, as shown on said Map;
EASTERLY: 95.16 feet on land of Gabriel and Elizabeth Andrade, as shown on said Map;
SOUTHERLY: 94.64 feet on Lot 6, as shown on said Map;
SOUTHWESTERLY: an arc distance of 66.43 feet on a turn-around of a proposed street, as shown on said Map;
WESTERLY: 82.28 feet on Lot 7, as shown on said Map.

Together with the right to use, maintain and repair the sanitary sewer pipes affecting the premises hereinbefore conveyed, whether such repairs and maintenance and use affect said premises or any portion of LeClair Court in which said sewers have been installed; and

Together with the right to use and tie into the presently installed storm sewer located under LeClair Court, and connecting from Lynn Road and running through LeClair Court to Cliff Street; and

Together with rights to use, maintenance and repair of all utilities presently installed in said LeClair Court relating to gas and electricity, water and telephone.

Being the same premises conveyed to Maria M. Branco, an undivided one-half (1/2) interest and to Laura M. DaSilva, an undivided one-half (1/2) interest by Laura B. Miranda by Certificate of Devise dated June 10, 1986 and recorded July 25, 1986 in Volume 283, Page 264 of the Naugatuck Land Records.

Said premises are free and clear of all encumbrances, except:

1. Reservation as contained in deed from Frances Amelia Adams et als to Michael J. Sullivan, dated January 13, 1911, recorded in Volume 49, Page 42, and in deed of Lester Adams to Michael J. Sullivan, dated March 20, 1911, recorded in Volume 49, Page 45, regarding Sanitary Sewer, shown on said Map, of the Naugatuck Land Records.
2. Easement, Lionel LeClair and Helen LeClair to The Southern New England Telephone Company dated December 29, 1954, recorded in Volume 112, Page 68 of the Naugatuck Land Records.
3. Easement, Lionel J. LeClair and Helen LeClair to The Naugatuck Water Company (Now The Connecticut Water Company) dated June 15, 1955, recorded in Volume 116, Page 234 of the Naugatuck Land Records.
4. Said premises are subject to Building Lines and Zoning Ordinances enacted by the Borough of Naugatuck and the Rules and Regulations of the Planning Commission of the Borough of Naugatuck.
5. Easement for a storm sewer as set out on the aforesaid map, together with the right to use, maintain and repair said storm sewer pipes.

The said grantees herein hereby agree to assume to pay all taxes and other municipal assessments hereinafter becoming due and payable on said premises.

Received For Record In
Naugatuck Land Records On
Feb 19,2013 at 10:17A
Volume 920 Page 589
By _____
Town Clerk/Assistant

Doc# 625

SECOND SHEET
PC-180

RETURN TO:
Julie Lynn Sampaio
20 Lynn Rd.
Naugatuck, CT 06770

RECORDED:

CERTIFICATE OF DEVISE, XXXXXXXXXXXXXXXXXXXXXXX
PC-250 REV. 10/08

STATE OF CONNECTICUT

COURT OF PROBATE

[*Type or print in black ink. File certificate with town clerk where real property is situated.*]

COURT OF PROBATE,	Naugatuck	DISTRICT NO. 21
ESTATE OF Maria M. Branco a/k/a Marie M. Branco, deceased		DATE OF DEATH December 6, 2011

Pursuant to C.G.S. §45a-450, this certifies that as appears from the records of this Court, said deceased died on the date above written, and the following real property of the decedent is devised XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX: [*Give name, place of residence, and share of distributee. Give street or lot number of real property or, if none, a brief description of the location. C.G.S. §45a-450.*] in accordance with Article Four of the Last Will and Testament of said deceased, to DENISE COSTA, daughter, of 25 Goodyear Ave., Naugatuck, CT 06770, an undivided one-third (1/3) interest, to JULIE LYNN SAMPAIO, daughter, of 20 Lynn Road, Naugatuck, CT 06770, an undivided one-third (1/3) interest and to PAULA MARINARO, daughter, of 313 Quinn Street, Naugatuck, CT 06770, an undivided one-third (1/3) interest in and to the following:

SEE SECOND SHEET ATTACHED HERETO

"No Conveyance Tax Collected
Leslie K. Mayer Asst
Town Clerk of Naugatuck"

For a more particular description, reference should be made to the records of said probate court.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the Seal of this Court

on this 14th day of January ,2013

Court Seal

Peter E. Mariano ☒ Judge ☐ Clerk ☐ Ass't Clerk

FOR TOWN CLERK'S USE ONLY	FOR COURT USE ONLY
	Original to:
	Date sent:

CERTIFICATE OF DEVISE, XXXXXXXXXXXXXXXXXXXXX
PC-250

ATTACHMENT F

Previous Stormwater Drainage Information

APPENDICES

APPENDIX A: Figures
APPENDIX B: Existing Condition - HydroCAD Output
APPENDIX C: Existing With New Pipe From Highland Avenue to Moore Avenue (Increment 1) - HydroCAD Output
APPENDIX D: Existing With New Pipe From Highland Avenue to Cliff (Increment 2) - HydroCAD Output
APPENDIX E: Proposed New System (Increment 3)- HydroCAD Output
APPENDIX F: Existing With All Flow Diverted at Hoadley Street - HydroCAD Output
APPENDIX G: Proposed With All Flow Diverted at Hoadley Street - HydroCAD Output

1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

The Nettleton Avenue neighborhood lies west of Meadow Street and north of Rubber Avenue in the Borough of Naugatuck, CT (see Figure 1). Many of the residents who live along the northern ends of Goodyear Avenue and Nettleton Avenue, the western ends of Trowbridge Place and Moore Avenue and along Lynn Road and LeClair Court have reported experiencing periodic flooding during heavy rainfall events over the past 40 years. Symptoms reported range from elevated groundwater that rises during such events to water flowing overland across residential lots and into some lower levels of their houses. Most notably, large amounts of water are reported to have flowed across the properties located between the western ends of Trowbridge Place and Moore Avenue.

Storm drains are typically designed to catch and convey storm water runoff during a prescribed design storm. These storms are referred to as a 1-Year, 2-Year, 10-Year, etc. storm referring to their statistical likelihood of occurring during any one year period. Thus a 1-year storm would have a near 100% statistical chance of occurring in any given year, a 2-Year storm would have a 50% chance of occurring during any given year, a 10-Year storm would have a 10% chance of occurring in any given year, and so forth. When actual storm events exceed the design storm for which a piped drainage system is designed, the excess storm water runoff typically runs down the street. The street is used as an overflow channel. When the street's capacity is exceeded, water will find and follow the path of least resistance to reach the watershed's natural low point, in this case the Long Meadow Pond Brook. Runoff from the Nettleton Avenue neighborhood enters the Brook opposite the intersection of Aetna Street and Rubber Avenue through a 30" diameter concrete culvert.

1.2 EXISTING CONDITION CHARACTERISTICS

The Borough of Naugatuck provided Geographic Information System (GIS) mapping of the drainage area that included known pipe locations, sizes, inlets and outlets; 10' contour interval topography (approximated from USGS topographic mapping); aerial photos; watershed boundaries; and tax mapping. CHA utilized this mapping to make a detailed reconnaissance of the neighborhood to further refine the existing information. CHA measured pipe diameters, pipe depths and elevations of the storm drainage structures along the collector pipe and determined the relative elevations of existing storm drains and catch basin grates. CHA also refined the watershed boundary based on field observations. Elevations of the existing drainage system were referenced to an assumed elevation of 500 at the top of the grate of the catch basin located on the south side of

Rubber Avenue at its intersection with Aetna Street. This assumed datum was purposely not related to the topographic datum due to the approximate nature of the latter.

The watershed contains a total of approximately 96 acres, and is approximately 40% impervious, including such water barriers as roof tops, asphalt roadways, driveways and sidewalks. Land use is predominately residential. The terrain within the watershed is relatively steep, having an average slope of 7%. A map of the Nettleton Avenue neighborhood's watershed showing watershed boundaries and existing known drainage pipes is illustrated in Figure 1.

As part of their soil classification system, the USDA Natural Resource Conservation Service (NRCS) assigns each soil series to a hydrologic soil group (HSG). The HSG is a four letter index (A-D) that is intended to indicate the relative potential for a soil to generate storm water runoff. NRCS describes soils in HSG B as "...having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained to well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission." NRCS describes HSG C soils as those "...having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission." HSG B and C soils make up most of the soils within the study watershed. Figure 2 is a copy of the NRCS map of soil types along with descriptions of each soil and its drainage classification.

Residents of the neighborhood were invited to attend an informational meeting with the Mayor, Borough Engineer, and a representative of CHA on the evening of September 9, 2009. At the meeting, the scope of the study was reviewed and the residents were asked to provide input regarding the flooding they have witnessed and also any comments they might offer regarding the perceived cause of the flooding. A summary of the comments received is summarized on Figure 3 which also provides a key to the location of the house each resident occupies.

Some residents commented that they had experienced water rising through the floors of their homes. This is often caused by rising groundwater, and improvement of the storm drain system may reduce this problem, but is unlikely to eliminate it. The resident at 135 Highland Avenue commented that he knew of a 12" clay pipe that extended under his and other houses on his side of the street. This is likely a "relic" pipe that should have been filled when it was abandoned. Such pipes often collect groundwater and convey it to places where it

damages property. Again, this type of problem is not directly impacted by improvements to the storm drainage system. However, if it can be found, the pipe might be connected to the drainage system to provide a release for the groundwater.

Residents in the area east of the northern ends of Nettleton Avenue and Goodyear Avenue, between Trowbridge Place and Moore Avenue described being flooded by surface waters that overflow the drainage system in the adjacent streets. The resident at 75 Goodyear Avenue described water backing up into the basement from Trowbridge Place during heavy storms. Residents along the east side of Nettleton Avenue and the north side of Moore Avenue describe water flowing over the curbs on the south side of Trowbridge Place and then through their yards causing water damage during heavy rainfall events. Such flooding was reported to have occurred every one or two years.

During the site reconnaissance, a low point was observed in Trowbridge Place about 50 feet east of its intersection with Nettleton Avenue. When the drainage system is overcome by the runoff, water builds up in this low point until it overflows the curb and runs through the yards between Trowbridge Place and Moore Avenue. Other similar low points exist on the south side of Highland Avenue opposite Dunn, and on the south side of Trowbridge Place at the 4th house east of its intersection with Nettleton Avenue.

Generally, drainage pipes were of various materials having relatively small diameters. Most manholes were constructed of brick and were in surprisingly good condition. However, video tapes of the pipes between Highland Avenue and the Long Meadow Pond Brook outlet that were provided by the Borough's Department of Public Works reveal that the existing pipes have frequent cracks, breaks, misaligned joints, and erosion and are generally in poor to fair condition. Some short sections of the pipes appeared to be in imminent danger of collapse. Catch basins varied from modern, relatively new construction with new 24"x 48" steel grates to very old structures having smaller openings often overgrown with vegetation or trash that obstructed flow into the system. One catch basin located at the intersection of Hoadley Street and Highland Avenue had a double grate intended to enable it to collect more runoff. However, when observed during a rainstorm, water flowed past the opening due to adjacent pavement grades. Similar conditions were observed at the intersection of Highland Avenue and Seth Street.

2.0 PROJECT OBJECTIVES

The objective of this project was to identify deficiencies that contribute to flooding in the Nettleton Avenue neighborhood, and to suggest potential measures that could be constructed to eliminate or reduce the severity of the reported flooding.

3.0 HYDROLOGIC EVALUATION

3.1 METHODOLOGY

Existing and observed data were used to construct a computer model of the watershed and analyze how water passes through it during various storm events. 1", 2", 1-Year (2.7"), 2-Year (3.3"), 10-year (5.0") and 25-Year (5.6") storms were modeled to analyze the relative capacity of existing pipes and to test proposed alternatives.

Runoff curve numbers and times of concentration were computed using standard NRCS TR-55 methodology. Additionally, peak stormwater flows and hydrographs for the existing conditions and for five proposed condition alternatives were computed using HydroCAD® (Version 9.00) Storm Water Modeling Software.

3.2 EXISTING CONDITION HYDROLOGY

For the purposes of the existing condition analysis, two design points were defined to characterize the natural drainage patterns of the watershed. Design Point 1 (DP-1) is located at the 30" outlet at Long Meadow Pond Brook. Design Point 2 (DP-2) is located on Hoadley Street where a portion of the runoff is currently diverted from the watershed under study to a neighboring watershed. Figure 1 is an Existing Storm Water Site Plan that illustrates the watershed, the major components of the existing drainage system, and labels each of the key points that were analyzed within the drainage system. Subcatchment areas and their times of concentration are also described on the plan. The results of the existing condition analysis are summarized in Table 3-1 on the following page. Detailed computations are included in Appendix B.

A review of Table 3-1 reveals that the existing system is capable of conveying a storm with a total rainfall of 1" and begins to experience flooding when a 2" storm occurs. Storms of this magnitude occur at frequent intervals, often several times each year. During a 1-Year storm event, the existing pipe system will overflow and the severity of the overflow is increased with increased rainfall depths.

Table 3-1

Summary of Performance of Existing Drainage System

Prepared by Clough Harbour & Associates, LLP

October, 2009

Node	Location	Overflow Peak Flow Rate / Volume in CFS and AF					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
N2	Rubber/Aetna	0 / 0	0 / 0	34.0 / 0.67	63.8 / 1.67	144.6 / 5.21	173.1 / 6.61
N3	Aetna	0 / 0	0 / 0	25.6 / 0.40	57.9 / 1.32	149.8 / 4.85	177.8 / 6.26
N4	Cliff/LeClair	0 / 0	0 / 0	0 / 0	26.4 / 0.30	120.8 / 2.88	161.3 / 4.26
N6	Lynn	0 / 0	0 / 0	16.1 / 0.20	50.9 / 0.96	139.5 / 4.17	167.1 / 5.45
N7	Lynn/Moore	0 / 0	0 / 0	33.2 / 0.59	63.6 / 1.56	151.5 / 5.19	179.3 / 6.58
N8	Trowbridge	0 / 0	0 / 0	18.0 / 0.24	47.2 / 0.94	134.1 / 4.06	162.7 / 5.31
N9	Beebe/Highland	0 / 0	2.3 / 0.01	30.4 / 0.65	55.5 / 1.48	132.4 / 4.67	160.1 / 6.00
N11	Highland/Seth	0 / 0	0 / 0	15.5 / 0.25	35.0 / 0.78	95.5 / 3.01	117.2 / 3.99
N13	Hoadley	0 / 0	11.3 / 0.29	28.0 / 0.94	43.6 / 1.67	93.3 / 4.48	111.0 / 5.67
N18	Hoadley	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
N22	Hoadley/Summit	0 / 0	8.3 / 0.19	24.4 / 0.74	39.9 / 1.39	87.3 / 3.77	104.0 / 4.78
N25	Hoadley/Millville	0 / 0	2.0 / 0.02	3.6 / 0.08	7.2 / 0.19	20.6 / 0.70	26.0 / 0.95
N26	Millville/Phyllis	0 / 0	6.9 / 0.14	18.9 / 0.59	30.5 / 1.09	65.1 / 2.92	77.5 / 3.68
DP2	Hoadley/Pine						
N14	Highland/Hoadley	0 / 0	0 / 0	0 / 0	0.3 / 0.00	2.3 / 0.03	3.2 / 0.5

Node	Location	Peak Flow Exiting Node (CFS)					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River	2.6	36.8	77.9	118.1	241.0	285.8
N2	Rubber/Aetna	2.6	36.8	77.9	118.1	241.0	285.8
N3	Aetna	2.6	36.7	77.4	117.3	239.1	283.5
N4	Cliff/LeClair	1.6	31.1	68.2	104.5	215.9	256.6
N6	Lynn	1.6	29.6	63.7	97.0	198.1	234.8
N7	Lynn/Moore	1.6	29.6	63.7	97.0	198.1	234.8
N8	Trowbridge	1.6	26.3	55.9	84.5	170.8	201.9
N9	Beebe/Highland	1.0	22.1	48.4	73.8	151.3	179.2
N11	Highland/Seth	0.4	14.8	34.5	53.7	112.3	133.4
N13	Hoadley	1.1	16.7	33.1	49.0	99.0	117.3
N18	Hoadley	1.1	8.3	8.6	8.8	11.0	11.6
N22	Hoadley/Summit	1.1	16.6	33.0	48.7	98.3	116.6
N25	Hoadley/Millville	1.0	10.8	12.2	15.8	28.5	33.4
N26	Millville/Phyllis	0.5	11.2	23.3	35.4	72.8	86.8
DP2	Hoadley/Pine	1.2	7.2	7.7	8.1	10.2	11.1
N14	Highland/Hoadley	1.2	7.2	7.7	8.1	10.2	11.1

3.3 PROPOSED SYSTEM HYDROLOGY

The first step in the process of developing solutions to mitigate the flooding that has occurred in this neighborhood was to create and evaluate a replacement system that generally follows the alignment of the existing collector pipe. Following the current alignment not only approximates the natural flow patterns of the terrain, but also allows the Borough to take advantage of existing inlets and local connector pipes. A collector system referred to in this report as Increment 3 was sized to contain runoff from a 10-year storm within the pipes and associated structures. In other words, once in the pipes, runoff generated by a 10-year storm event would not overflow the system's structures and be re-introduced to the road surfaces. This would allow runoff from storms of greater magnitude than the 10-year storm to be conveyed in the pipes as they develop and to utilize the roads as overflow channels during their peak periods of runoff. Roads in the neighborhood are currently called upon to convey runoff overflow during much less intense storms.

Next, two incremental improvement steps referred to as Increments 1 and 2 were evaluated that would reduce the flooding described above. Increment 1 replaces the existing drainage pipes between Highland Avenue and Moore Avenue with the large diameter pipes shown in the total replacement alternative (Increment 3). Increment 2 extends the replacement pipes from Moore Avenue to Cliff Street.

Additionally, immediate improvements are suggested later in the report that would result in marginal reductions in flooding by making marginal increases to the existing system's collection and conveyance capacity.

The overflow of storm water runoff at the low point in Trowbridge Place (designated as N8 and PN8 in the drainage models presented in Appendices for existing and proposed conditions respectively) serves as a good proxy for system performance in the Nettleton Avenue neighborhood. Table 3-2 compares the performance of the three incremental plans to that of the existing system at that location. Note that the existing 12" bypass pipe that conveys runoff from the Nettleton Avenue watershed to the lower part of Hoadley Street was retained in both Increments 1 and 2. However it was eliminated in Increment 3 since the proposed replacement pipes would be large enough to carry that water so Hoadley Street could be relieved of the burden. The elimination of this small diversion resulted in a small overflow of the curb at Trowbridge Place during the 25-Year storm event in Increment 3.

Table 3-2

Comparative Performance of Proposed Incremental Improvements

Increment	Overflow Occurs
Existing	1-Year Storm
1	10-Year Storm
2	25-Year Storm
3	25-Year Storm

A variation on the total replacement solution and its incremental alternatives was also considered whereby the Hoadley Street bypass was improved so that it would divert all runoff originating above the intersection of Highland Avenue and Hoadley Street from the pipe system that drains the Nettleton Avenue neighborhood. To accomplish this would require construction of approximately 1200 additional lineal feet of 42" storm drain to carry the diverted runoff from the intersection of Highland Avenue and Hoadley Street down Hoadley to a discharge point where Hoadley Street crosses the Long Meadow Pond Brook just north of Rubber Avenue. The 42" pipe size would only carry the water originating above Highland Avenue. If this diversion was to be implemented, the design would actually likely call for a progressively larger pipe so that the system could also carry the runoff that originates between Highland Avenue and Rubber Avenue. The benefit this alternative offers is to decrease the size of the pipes needed to resolve the flooding in the Nettleton Avenue neighborhood. Analysis showed that the decrease in pipe size realized is modest (reduced 54" pipes to 42" etc.). The majority of the cost of constructing new pipelines in existing roads is that of trenching, backfilling and replacing surface improvements. The differential in the price of the pipe is small by comparison. As will be seen in a later section of the report, the total diversion alternative appears to be a financially viable option, since its cost is slightly less than the cost of total replacement of the existing system. However, to phase the project by constructing the Hoadley Street diversion first would not be very effective because without also constructing new pipes between Highland Avenue and Moore Avenue, construction of the Hoadley Street pipe alone would only decrease the expected frequency of flooding at Trowbridge Place from once every year to once every 2 years.

Overflow rates in cubic feet per second (CFS) and volumes in acre-feet (AF) at representative points throughout the system for each alternative and for the various storms evaluated are provided in tables 3-3 through 3-7 on the following pages. A comparison of these tables reveals that where partial pipe replacements

Table 3-3

Summary of Performance of Existing Drainage System With New from Highland to Moore

Prepared by Clough Harbour & Associates, LLP — **Increment 1**

October, 2009

Node	Location	Overflow Peak Flow Rate / Volume in CFS and AF					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
N2	Rubber/Aetna	0 / 0	0 / 0	34.0 / 0.67	63.8 / 1.67	144.6 / 5.21	173.1 / 6.61
N3	Aetna	0 / 0	0 / 0	25.6 / 0.40	57.9 / 1.32	149.8 / 4.85	177.8 / 6.26
N4	Cliff/LeClair	0 / 0	0 / 0	0 / 0	26.4 / 0.30	120.8 / 2.88	161.3 / 4.26
N6	Lynn	0 / 0	0 / 0	16.1 / 0.20	50.9 / 0.96	139.5 / 4.17	167.1 / 5.45
PN7	Lynn/Moore	0 / 0	0 / 0	33.2 / 0.59	63.6 / 1.56	151.5 / 5.19	179.3 / 6.58
PN8	Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	62.3 / 0.73	81.86 / 1.39
PN9	Goodyear/Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	44.13 / 0.55	58.6 / 1.06
PN10	Beebe/Highland	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	60.59 / 0.67
N11	Highland/Seth	0 / 0	0 / 0	14.6 / 0.23	33.2 / 0.74	88.6 / 2.77	109.3 / 3.68
N13	Hoadley	0 / 0	11.3 / 0.29	28.0 / 0.94	43.6 / 1.67	93.3 / 4.48	111.0 / 5.67
N18	Hoadley	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
N22	Hoadley/Summit	0 / 0	8.3 / 0.18	24.4 / 0.74	39.9 / 1.39	87.3 / 3.77	104.9 / 4.79
N25	Hoadley/Millville	0 / 0	2.0 / 0.02	3.6 / 0.08	7.2 / 0.19	20.6 / 0.70	26.0 / 0.95
N26	Millville/Phyllis	0 / 0	6.9 / 0.14	19.0 0.59	30.5 / 1.09	65.1 / 2.92	77.6 / 3.68
DP2	Hoadley/Pine						
N14	Highland/Hoadley	0 / 0	0 / 0	0 / 0	0.3 / 0.00	2.3 / 0.03	3.2 / 0.05

Node	Location	Peak Flow Exiting Node (CFS)					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
N2	Rubber/Aetna	2.6	36.8	77.9	118.1	241.0	285.8
N3	Aetna	2.6	36.7	77.4	117.3	239.1	283.5
N4	Cliff/LeClair	1.6	31.1	68.2	104.5	215.9	256.6
N6	Lynn	1.6	29.6	63.7	97.0	198.1	234.8
PN7	Lynn/Moore	1.6	29.6	63.7	97.0	198.1	234.8
PN8	Trowbridge	1.6	26.3	55.9	84.5	170.8	201.9
PN9	Goodyear/Trowbridge	1.0	22.1	48.4	73.8	151.3	179.2
PN10	Beebe/Highland	1.0	22.1	48.4	73.8	151.3	176.2
N11	Highland/Seth	0.4	17.8	34.5	53.7	112.3	133.4
N13	Hoadley	1.1	16.7	33.1	49.0	99.0	117.3
N18	Hoadley	1.1	8.3	8.6	8.8	11.0	11.6
N22	Hoadley/Summit	1.1	16.6	33.0	48.7	98.3	116.6
N25	Hoadley/Millville	1.0	10.8	12.2	15.8	28.5	33.4
N26	Millville/Phyllis	0.5	11.2	23.3	35.4	72.9	86.8
DP2	Hoadley/Pine						
N14	Highland/Hoadley	1.2	7.2	7.7	8.1	10.1	11.1

Table 3-4

Summary of Performance of Existing Drainage System With New from Highland to Cliff

Prepared by Clough Harbour & Associates, LLP — **Increment 2**

October, 2009

Node	Location	Overflow Peak Flow Rate / Volume in CFS and AF					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
N2	Rubber/Aetna	0 / 0	0 / 0	34.0 / 0.67	63.8 / 1.67	144.6 / 5.21	173.1 / 6.61
N3	Aetna	0 / 0	0 / 0	25.6 / 0.40	57.9 / 1.32	149.8 / 4.85	177.8 / 6.26
PN4	Cliff/LeClair	0 / 0	0 / 0	0 / 0	26.4 / 0.30	113.4 / 2.77	147.9 / 4.03
PN6	Lynn	0 / 0	0 / 0	0 / 0	0 / 0	68.9 / 0.93	88.2 / 1.61
PN7	Lynn/Moore	0 / 0	0 / 0	0 / 0	0 / 0	33.4 / 0.28	74.8 / 1.20
PN8	Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
PN9	Goodyear/Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	27.2 / 0.18
PN10	Beebe/Highland	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	10.5 / 0.07
N11	Highland/Seth	0 / 0	0 / 0	14.6 / 0.23	33.2 / 0.74	88.6 / 2.77	109.3 / 3.68
N13	Hoadley	0 / 0	11.3 / 0.29	28.0 / 0.94	43.6 / 1.67	93.3 / 4.48	111.0 / 5.67
N18	Hoadley	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
N22	Hoadley/Summit	0 / 0	8.3 / 0.18	24.4 / 0.74	39.9 / 1.39	87.3 / 3.77	104.9 / 4.79
N25	Hoadley/Millville	0 / 0	2.0 / 0.02	3.6 / 0.08	7.2 / 0.19	20.6 / 0.70	26.0 / 0.95
N26	Millville/Phyllis	0 / 0	6.9 / 0.14	19.0 0.59	30.5 / 1.09	65.1 / 2.92	77.6 / 3.68
DP2	Hoadley/Pine						
N14	Highland/Hoadley	0 / 0	0 / 0	0 / 0	0.3 / 0.00	2.3 / 0.03	3.2 / 0.05

Node	Location	Peak Flow Exiting Node (CFS)					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
N2	Rubber/Aetna	2.6	36.8	77.9	118.1	241.0	285.8
N3	Aetna	2.6	36.7	77.4	117.3	239.1	283.5
PN4	Cliff/LeClair	1.6	31.1	68.2	104.5	215.9	256.6
PN6	Lynn	1.6	29.6	63.7	97.0	198.1	234.8
PN7	Lynn/Moore	1.6	29.6	63.7	97.0	198.1	234.8
PN8	Trowbridge	1.6	26.3	55.9	84.5	170.8	201.9
PN9	Goodyear/Trowbridge	1.0	22.1	48.4	73.8	151.3	179.2
PN10	Beebe/Highland	1.0	22.1	48.4	73.8	151.3	176.2
N11	Highland/Seth	0.4	17.8	34.5	53.7	112.3	133.4
N13	Hoadley	1.1	16.7	33.1	49.0	99.0	117.3
N18	Hoadley	1.1	8.3	8.6	8.8	11.0	11.6
N22	Hoadley/Summit	1.1	16.6	33.0	48.7	98.3	116.6
N25	Hoadley/Millville	1.0	10.8	12.2	15.8	28.5	33.4
N26	Millville/Phyllis	0.5	11.2	23.3	35.4	72.9	86.8
DP2	Hoadley/Pine						
N14	Highland/Hoadley	1.2	7.2	7.7	8.1	10.1	11.1

Table 3-5

Summary of Performance of Proposed Drainage System

Prepared by Clough Harbour & Associates, LLP — **Increment 3**

October, 2009

Node	Location	Overflow Peak Flow Rate / Volume in CFS and AF					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
PN2	Rubber/Aetna	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	10.3 / 0.06
PN3	Cliff/Aetna	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	19.6 / 0.13
PN4	Cliff/LeClair	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	15.6 / 0.9
PN6	Lynn	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	44.2 / 0.37
PN7	Lynn/Moore	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	38.4 / .034
PN8	Nettleton/Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	2.3 / 0.01
PN9	Goodyear/Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	35.9 / 0.29
PN10	Beebe/Highland	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	15.8 / 0.11
PN11	Highland/Seth	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	8.4 / 0.05
PN12	Highland/Hoadley	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	7.9 / 0.06
PN25	Hoadley/Millville	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
PN26	Millville/Phyllis	0 / 0	0 / 0	0 / 0	0 / 0	2.5 / 0.01	29.7 / 0.27
DP2	Hoadley/Pine						

Node	Location	Peak Flow Exiting Node (CFS)					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River	3.6	42.3	83.9	123.6	246.7	292.1
PN2	Rubber/Aetna	3.6	42.3	83.9	123.6	246.7	292.1
PN3	Cliff/Aetna	3.6	42.1	83.4	122.8	244.8	289.8
PN4	Cliff/LeClair	2.6	36.6	74.2	110.0	221.6	262.9
PN6	Lynn	2.6	35.5	69.8	102.5	203.8	241.1
PN7	Lynn/Moore	2.6	35.5	68.8	102.5	203.8	241.1
PN8	Nettleton/Trowbridge	2.6	32.2	61.9	90.1	176.5	208.2
PN9	Goodyear/Trowbridge	2.1	27.5	54.1	79.3	157.0	185.5
PN10	Beebe/Highland	2.1	27.5	54.1	79.3	157.0	185.5
PN11	Highland/Seth	1.4	20.2	40.3	59.3	118.1	139.7
PN12	Highland/Hoadley	1.1	16.7	33.1	49.0	99.0	117.3
PN25	Hoadley/Millville	1.1	16.6	33.0	48.7	98.3	116.6
PN26	Millville/Phyllis	0.5	11.2	23.3	35.4	72.8	86.8
DP2	Hoadley/Pine	0.1	1.0	1.8	2.5	4.6	5.4

Figure 3-6

Summary of Performance of Existing if All Flow is Diverted to Hoadley

Prepared by Clough Harbour & Associates, LLP

October, 2009

Node	Location	Overflow Peak Flow Rate / Volume in CFS and AF					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
N2	Rubber/Aetna	0 / 0	0 / 0	10.2 / 0.13	30.9 / 0.61	84.1 / 2.61	102.1 / 3.42
N3	Aetna	0 / 0	0 / 0	1.58 / 0.01	22.2 / 0.33	78.5 / 2.15	96.9 / 2.92
N4	Cliff/LeClair	0 / 0	0 / 0	0 / 0	0 / 0	43.6 / 0.62	62.1 / 1.08
N6	Lynn	0 / 0	0 / 0	0 / 0	7.6 / 0.06	58.7 / 1.19	76.2 / 1.76
N7	Lynn/Moore	0 / 0	0 / 0	3.5 / 0.02	23.0 / 0.33	72.2 / 1.88	90.0 / 2.55
N8	Trowbridge	0 / 0	0 / 0	0 / 0	3.8 / 0.02	42.5 / 0.79	56.7 / 1.20
N9	Beebe/Highland	0 / 0	0 / 0	1.4 / 0.01	12.4 / 0.17	40.6 / 1.04	50.9 / 1.42
N11	Highland/Seth	0 / 0	0 / 0	0 / 0	0 / 0	3.4 / 0.02	7.4 / 0.06
N13	Hoadley						
N18	Hoadley						
N22	Hoadley/Summit						
N25	Hoadley/Millville						
N26	Millville/Phyllis						
DP2	Hoadley/Pine						
N14	Highland/Hoadley	0 / 0	9.2 / 0.22	26.0 / 0.82	42.4 / 1.51	90.6 / 4.05	108.2 / 5.14

Node	Location	Peak Flow Exiting Node (CFS)					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River	2.6	25.7	50.7	74.5	148.0	175.2
N2	Rubber/Aetna	2.6	25.7	50.7	74.5	148.0	175.2
N3	Aetna	2.6	25.5	50.2	73.7	146.2	172.9
N4	Cliff/LeClair	1.6	20.5	41.3	61.2	123.5	146.6
N6	Lynn	1.6	19.1	36.9	53.8	105.9	125.0
N7	Lynn/Moore	1.6	19.1	36.9	53.8	105.9	125.0
N8	Trowbridge	1.6	15.9	29.2	41.5	78.8	92.3
N9	Beebe/Highland	1.0	11.2	21.0	30.3	58.4	68.7
N11	Highland/Seth	0.4	4.5	8.2	11.7	22.3	26.1
N13	Hoadley						
N18	Hoadley						
N22	Hoadley/Summit						
N25	Hoadley/Millville						
N26	Millville/Phyllis						
DP2	Hoadley/Pine	1.2	17.3	34.4	51.1	102.4	121.3
N14	Highland/Hoadley						

Table 3-7

Summary of Performance of Proposed if All Flow is Diverted to Hoadley

Prepared by Clough Harbour & Associates, LLP — **Alternate**

October, 2009

Node	Location	Overflow Peak Flow Rate / Volume in CFS and AF					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River						
PN2	Rubber/Aetna	0 / 0	0 / 0	0 / 0	0 / 0	5.6 / 0.3	29.0 / 0.29
PN3	Cliff/Aetna	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	8.1 / 0.04
PN4	Cliff/LeClair	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
PN6	Lynn	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	12.1 / 0.08
PN7	Lynn/Moore	0 / 0	0 / 0	0 / 0	0 / 0	5.1 / 0.02	32.6 / 0.38
PN8	Nettleton/Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
PN9	Goodyear/Trowbridge	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	2.2 / 0.02
PN10	Beebe/Highland	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	3.6 / 0.02
PN11	Highland/Seth	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
DP2	Hoadley/Pine						
PN25	Hoadley/Millville	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
PN26	Millville/Phyllis	0 / 0	0 / 0	0 / 0	0 / 0	2.5 / 0.01	29.7 / 0.27

Node	Location	Peak Flow Exiting Node (CFS)					
		1"	2"	1-Year	2-Year	10-Year	25-Year
DP1	Outlet at River	2.6	25.7	50.7	74.5	148.0	175.2
PN2	Rubber/Aetna	2.6	25.7	50.7	74.5	148.0	175.2
PN3	Cliff/Aetna	2.6	25.5	50.2	73.7	146.2	172.9
PN4	Cliff/LeClair	1.6	20.5	41.3	61.2	123.5	146.6
PN6	Lynn	1.6	19.1	36.9	53.8	105.9	125.0
PN7	Lynn/Moore	1.6	19.1	36.9	53.8	105.9	125.0
PN8	Nettleton/Trowbridge	1.6	15.9	29.2	41.5	78.8	92.3
PN9	Goodyear/Trowbridge	1.0	11.2	21.0	30.3	58.4	68.7
PN10	Beebe/Highland	1.0	11.2	21.0	30.3	58.4	68.7
PN11	Highland/Seth	0.4	4.5	8.2	11.7	22.3	26.1
DP2	Hoadley/Pine	1.2	17.3	34.4	51.1	102.4	121.3
PN25	Hoadley/Millville	1.1	16.6	33.0	48.7	98.3	116.6
PN26	Millville/Phyllis	0.5	11.2	23.3	35.4	72.9	86.8

are considered (Increments 1 and 2), overflows are neither significantly reduced nor increased at locations above and below the replacements. Hydrologic computations for the existing conditions and for each of the five alternatives are contained in Appendices B thru G.

4.0 RECOMMENDED SYSTEM IMPROVEMENTS

4.1 PERIODIC MAINTENANCE AND REPAIR

All catch basins within the watershed should receive periodic maintenance aimed at keeping the inlet grates free of obstructions to flow. Additionally, in several locations pavement grades and/or catch basin grates should be adjusted to match so that runoff enters the catch basins rather than flowing past them. This is especially true of the catch basin at the east corner of Highland Avenue and Hoadley Street and several of the catch basins at Highland Avenue and Seth Street.

4.2 ROAD GRADES AND CURB IMPROVEMENTS

Roads in the Nettleton Avenue neighborhood are relatively old and appear to have been repaved numerous times. The result of repaving is to thicken the asphalt resulting in a reduction in the height of the curbs above the asphalt. This reduction in height decreases the curb's ability to carry storm water runoff. There are also places where residents on the downhill (south) side of Highland Avenue and Trowbridge Place have constructed driveways that grade downward from the edge of the road thus creating a path for runoff to escape the curbing. It appears that water running down Dunn Street during larger storms likely flows across Highland Avenue then flows down driveways and through properties to Trowbridge Place. This water adds to the flow already in Trowbridge Place and accumulates at the low point in Trowbridge Place (about 50 feet east of Nettleton Avenue) where it overflows the curb and drains through the yards between Trowbridge Place and Moore Avenue. The following minor projects should be considered to marginally reduce flooding:

- Reconstruct curb on the south side of Highland Avenue from Dunn Street to Goodyear Avenue. This would also include regarding the first 10 to 20 feet of some existing driveways so that a full 6" high curb can be established.
- Reconstruct curb on the south side of Trowbridge Place beginning at Nettleton Avenue and extending approximately 400 feet east. This would also include regrading the first 10 to 20 feet of some existing

driveways so that a full 6" curb can be established.

- Reconstruct the first 200 lineal feet of Trowbridge Place east of Nettleton Avenue to eliminate the low point so that overflow from the storm drains will flow down the road rather than through the residential properties as it currently does.

4.3 DRAINAGE PIPE REPLACEMENT

In our opinion, as funding allows the Borough should implement a program to replace the existing drainage system in the following increments:

- Increment 1 is illustrated in Figure 4 in Appendix A. New large diameter drainage pipe would be installed to replace existing pipes from Moore Avenue to Highland Avenue.
- Increment 2 is illustrated in Figure 5 in Appendix A. Additional new large diameter drainage pipe would be installed to replace existing pipes from Cliff to Moore Avenue.
- Increment 3 is illustrated in Figure 6 in Appendix A. Additional new large diameter drainage pipe would be installed to replace existing pipes from the Long Meadow Pond Brook outlet to Cliff and from Highland Avenue to the intersection of Millville Avenue and Phyllis Drive.

Once completed, the project outlined above would relieve the existing Hoadley Street drainage system of carrying the overflow at Highland Avenue.

In our opinion, the Borough should not consider the Hoadley Street Bypass Alternative presented in Figure 7 of Appendix A and in Appendix G. Construction required to implement that alternative would be similar to that required for Increments 1 through 3 as described above, except that some of the pipes described in those Increments would be somewhat smaller and an additional large diameter pipe would also be constructed along Hoadley Street from its intersection with Highland Avenue to where is crosses Long Meadow Pond Brook. The results of the analysis presented in Appendix F indicate that little relief would be realized by constructing only the bypass system, so to accomplish a meaningful first phase would necessitate construction of both the bypass and the proposed pipes from Highland Avenue to Moore Avenue. Our recommendation is not to pursue the Hoadley Street Bypass Alternative because the cost to achieve protection from a 10-year storm event using it would far exceed the cost to accomplish the same result using Increment 1 described above.

5.0 STUDY-LEVEL OPINION OF PROBABLE CONSTUCTION COSTS

For purposes of comparing the costs of the various alternatives, unit construction costs for the various sizes of pipe were approximated using current RSMeans Construction Cost Data. Comparative Opinions of Probable Construction Costs for the various options are presented in Table 5-1 on the following page.

Table 5-1

Comparative Opinion of Probable Construction Costs
Nettleton Avenue Neighborhood Storm Drainage Options
Prepared by Clough Harbour & Associates, LLP
6-Oct-09

Item	Unit Price (see note below)	Existing with New from Highland Avenue to Moore Avenue (Increment 1)	Existing with New from Highland Avenue to Cliff Street (Increment 2)	Proposed (Increment 3)	Existing with All Flow Diverted at Highland Avenue and Hoadley Street	Proposed with All Flow Diverted at Highland Avenue and Hoadley Street (Increment 3 plus Hoadley Street Diversion)
		Lineal Feet of Pipe				
60" HDPE Pipe	625			130		
54" HDPE Pipe	550	525	1,095	1,795		
48" HDPE Pipe	485	370	370	370		
42" HDPE Pipe	425			1,695	1,200	3,510
36" HDPE Pipe	360					705
30" HDPE Pipe	290					370
24" HDPE Pipe	270					255
Comparative Opinion of Construction Cost by Option		$468,200	$781,700	$1,968,325	$510,000	$1,921,700
Contingencies and Engineering @ 30%		$140,460	$234,510	$590,498	$153,000	$576,510
Comparative Opinion of Project Cost by Option		$608,660	$1,016,210	$2,558,823	$663,000	$2,498,210

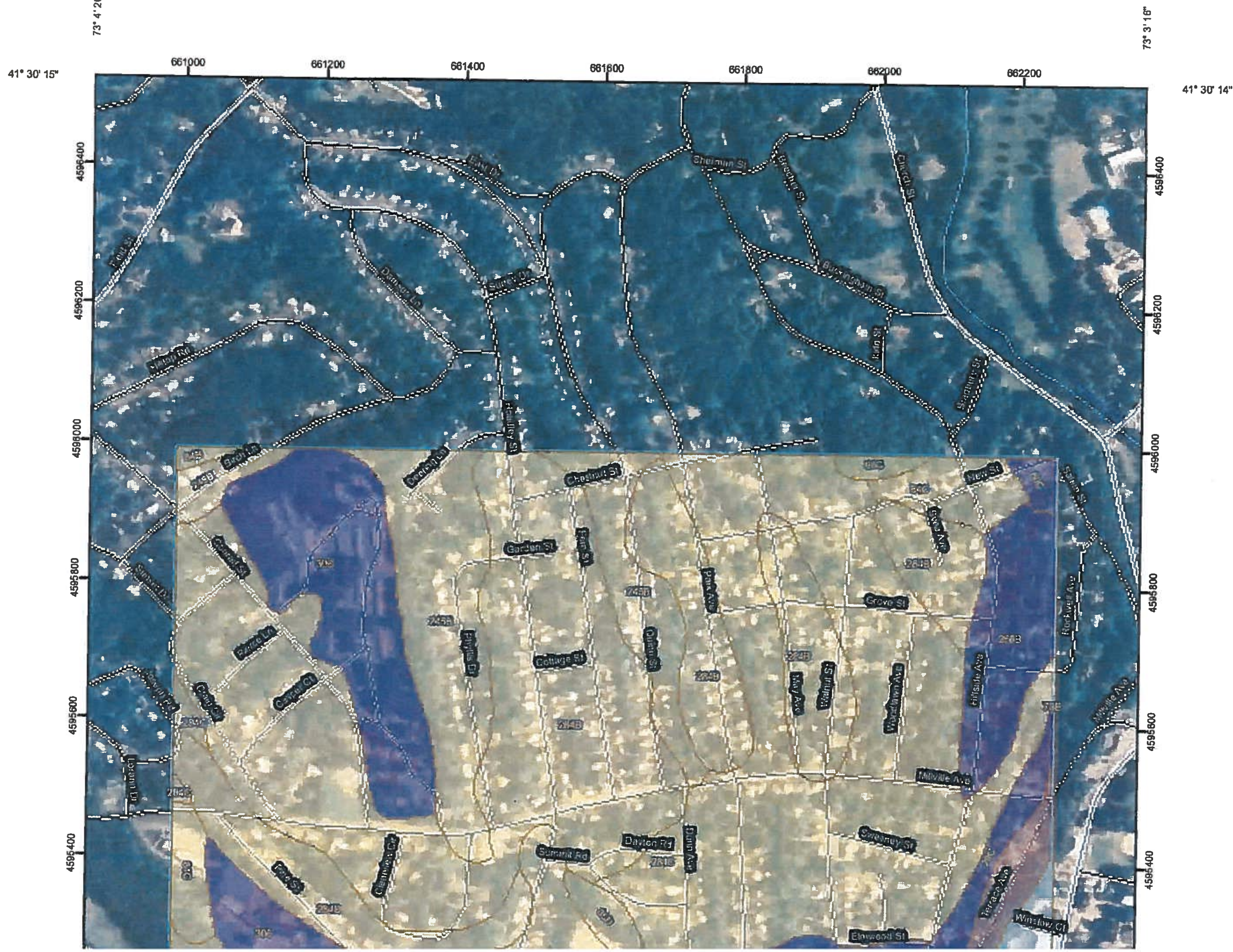
Note: Unit prices are based on RSMeans Construction Cost Data and are adjusted for 2010 construction in Naugatuck, CT. They include allowances for demolition, excavation, pipe, installation, bedding, backfill, restoration of surface improvements, access structures, connections to existing pipes, general conditions, and contractor overhead and profit. They assume pipes will be constructed in existing roads and do not include any significant amounts of curb replacement, nor do they include full-width road reconstruction, water or sewer line relocations or relocations of other utilities.

APPENDIX A

Figures


CONRAD
PIERCE LN
CASPER CT.
CONRAD
12
28.07 AC
PHYLLIS DR
N. HOADLEY ST
11
7.65 AC
FERN ST.
QUINN ST.
HSG-B
HSG-C
POSSIBLE MH UNDER PAVEMENT
MILLVILLE AVE
10
74821.5245 SF
1.719 AC
MILLVILLE AVE
DAYTON RD
PARK AVE
DUNN AVE
8
1.28 AC
SUMMIT RD
9
0.35 AC
CLEARVIEW CIR
SETH ST.
7
6.60 AC
PINE
HIGHLAND AVE
HOADLEY ST
WEST ST.
6
14.23 AC
DUNN
HSG-C
HSG-B

Hydrologic Soil Group—State of Connecticut
(Nettleton Ave)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Units

Soil Ratings

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Political Features

Cities

Water Features

Oceans

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — State of Connecticut				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
21A	Ninigret and Tisbury soils, 0 to 5 percent slopes	B	0.5	0.1%
29C	Agawam fine sandy loam, 8 to 15 percent slopes	B	3.6	0.8%
38C	Hinckley gravelly sandy loam, 3 to 15 percent slopes	A	2.5	0.6%
38E	Hinckley gravelly sandy loam, 15 to 45 percent slopes	A	9.4	2.1%
60C	Canton and Charlton soils, 8 to 15 percent slopes	B	1.1	0.2%
60D	Canton and Charlton soils, 15 to 25 percent slopes	B	2.4	0.5%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B	8.2	1.8%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	D	6.0	1.4%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	C	0.5	0.1%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	C	6.4	1.4%
84D	Paxton and Montauk fine sandy loams, 15 to 25 percent slopes	C	6.4	1.5%
86C	Paxton and Montauk fine sandy loams, 3 to 15 percent slopes, extremely stony	C	0.9	0.2%
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	C	3.1	0.7%
229B	Agawam-Urban land complex, 0 to 8 percent slopes	B	7.9	1.8%
238C	Hinckley-Urban land complex, 3 to 15 percent slopes	A	5.7	1.3%
245B	Woodbridge-Urban land complex, 0 to 8 percent slopes	C	25.5	5.7%
250B	Sutton-Urban land complex, 0 to 8 percent slopes	B	7.2	1.6%
260B	Charlton-Urban land complex, 3 to 8 percent slopes	B	52.1	11.7%
260C	Charlton-Urban land complex, 8 to 15 percent slopes	B	14.8	3.3%
260D	Charlton-Urban land complex, 15 to 25 percent slopes	B	4.8	1.1%
275E	Urban land-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	B	1.8	0.4%

Exhibit 7-3

Hydrologic Soil Group— Summary by Map Unit — State of Connecticut				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
284B	Paxton-Urban land complex, 3 to 8 percent slopes	C	79.2	17.8%
284C	Paxton-Urban land complex, 8 to 15 percent slopes	C	93.2	21.0%
284D	Paxton-Urban land complex, 15 to 25 percent slopes	C	11.4	2.6%
306	Udorthents-Urban land complex	B	48.3	10.9%
307	Urban land		37.0	8.3%
W	Water		4.5	1.0%
Totals for Area of Interest			**444.3**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Figure 7-d

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie.

The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

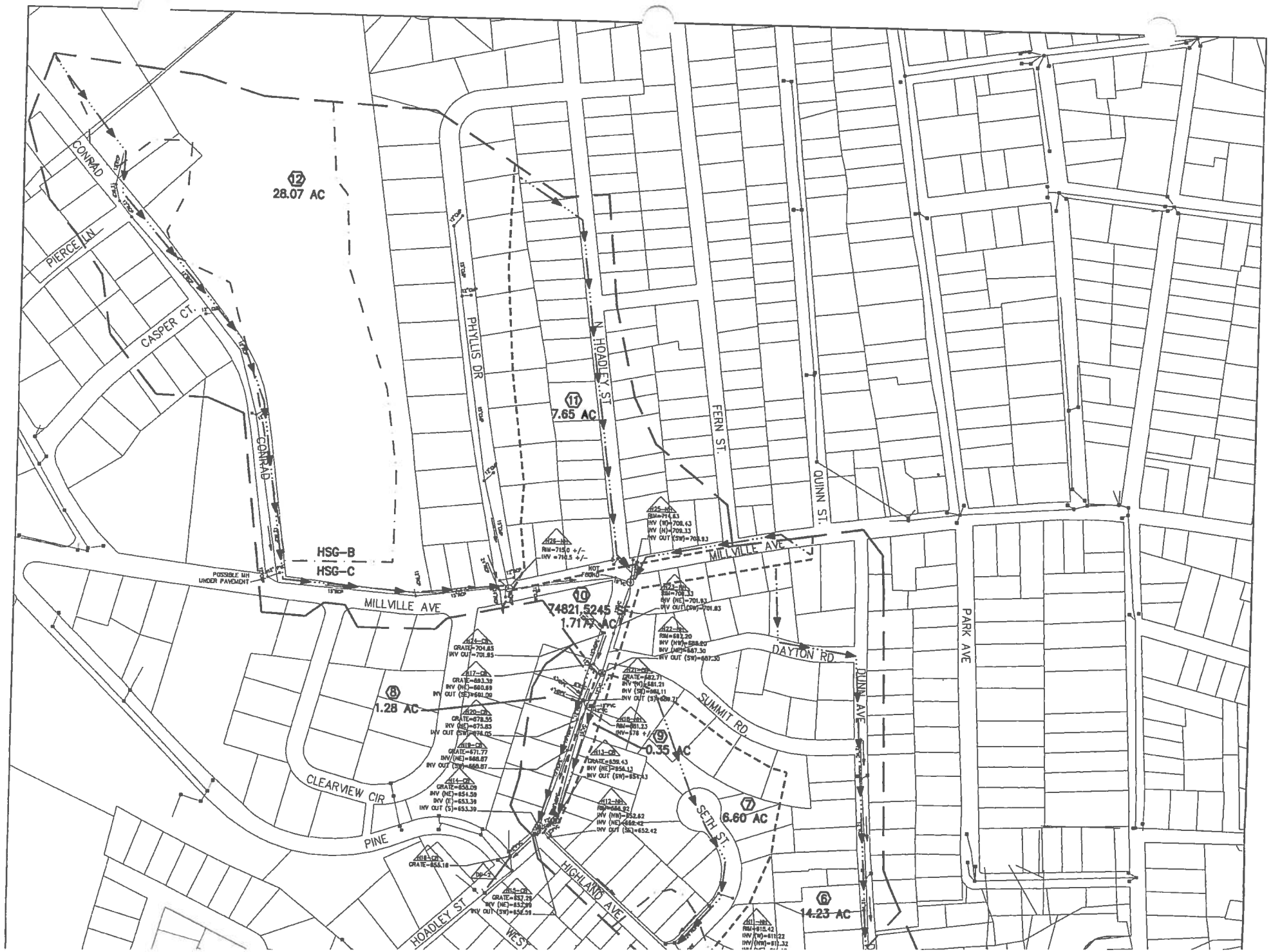
Component Percent Cutoff: *None Specified*

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

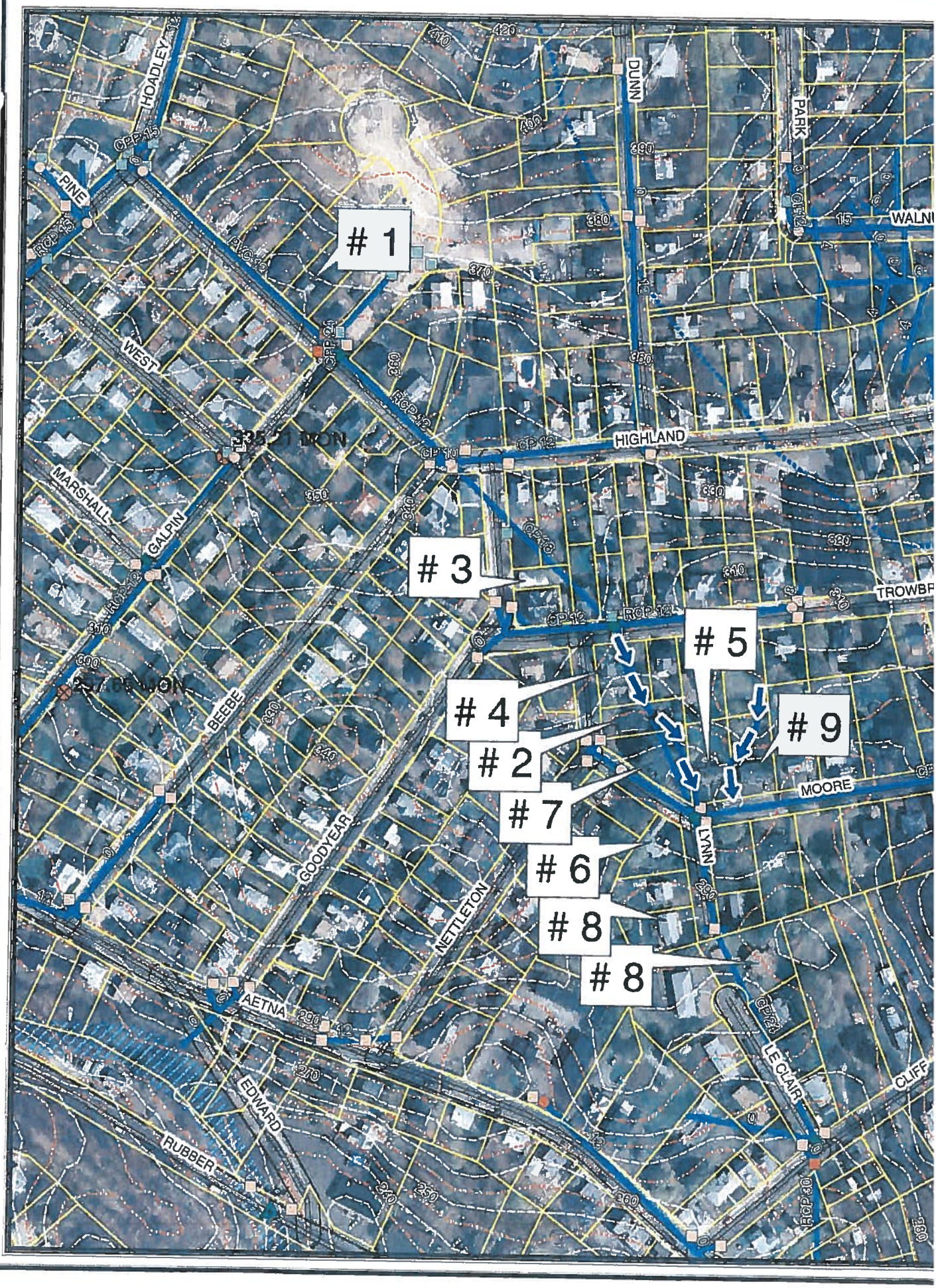
Tie-break Rule: Lower

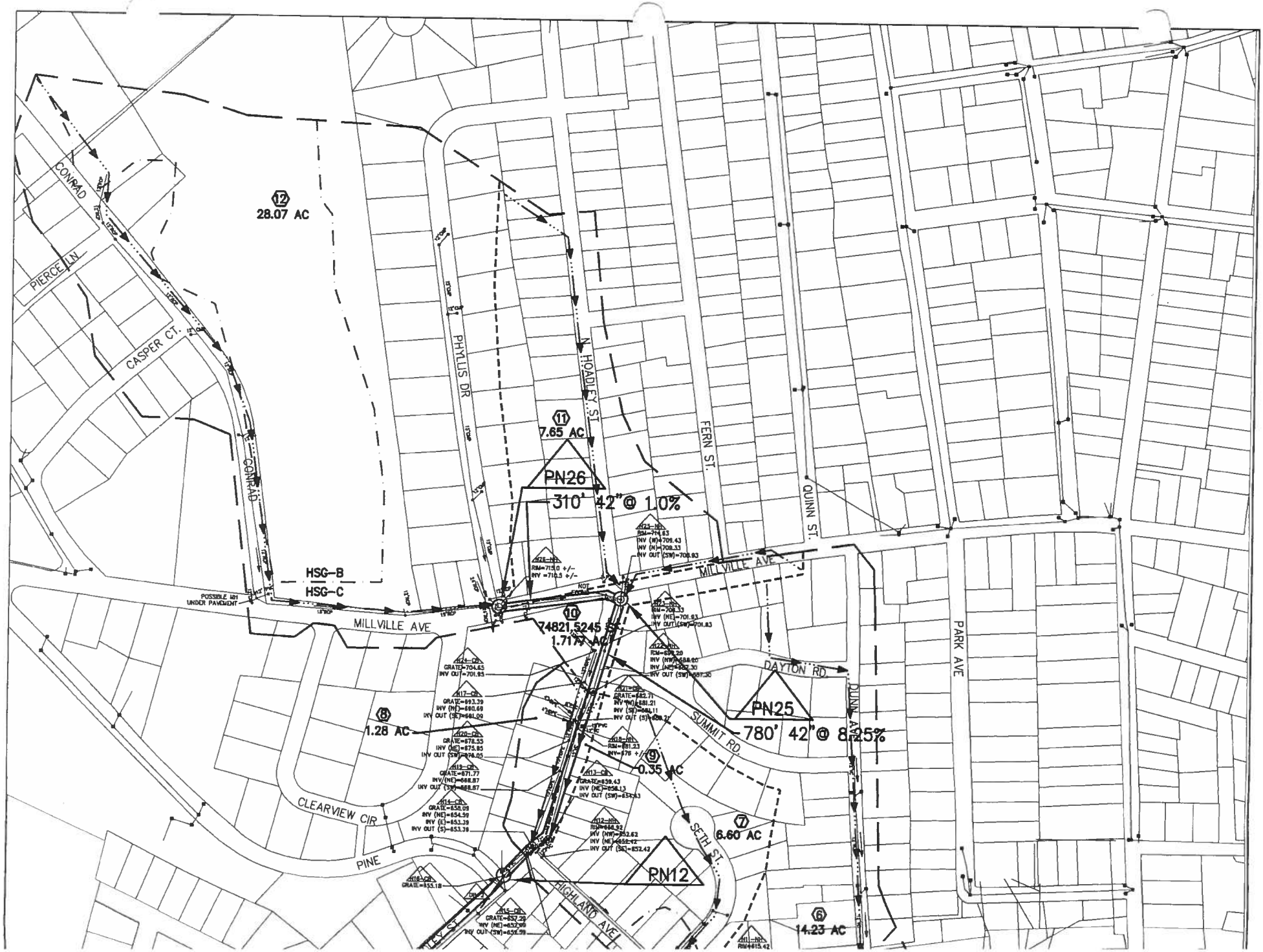
The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.


CONRAD
PIERCE LN
CASPER CT.
CONRAD
PHYLLIS DR
N. HOADLEY ST
FERN ST.
QUINN ST.
PARK AVE
MILLVILLE AVE
MILLVILLE AVE
DAYTON RD
QUINN AVE
SUMMIT RD
CLEARVIEW CIR
PINE
HIGHLAND AVE
SETH ST.
HOADLEY ST
12
28.07 AC
11
7.65 AC
10
74821.5245 SF
1.717 AC
8
1.28 AC
9
0.35 AC
7
6.60 AC
6
14.23 AC
HSG-B
HSG-C
POSSIBLE MH UNDER PAVEMENT
HOT FROMD


12
28.07 AC
11
7.65 AC
10
4821,5245
1.717 AC
8
1.28 AC
9
0.35 AC
7
6.60 AC
6
14.23 AC
HSG-B
HSG-C
CONRAD
PIERCE LN
CASPER CT.
CONRAD
PHYLLIS DR
N HOADLEY ST
FERN ST.
QUINN ST.
MILLVILLE AVE
MILLVILLE AVE
POSSIBLE MH UNDER PAVEMENT
DAYTON RD
PARK AVE
QUINN AVE
SUMMIT RD
SETH ST.
CLEARVIEW CIR
PINE
HIGHLAND AVE
HOADLEY ST
WEST

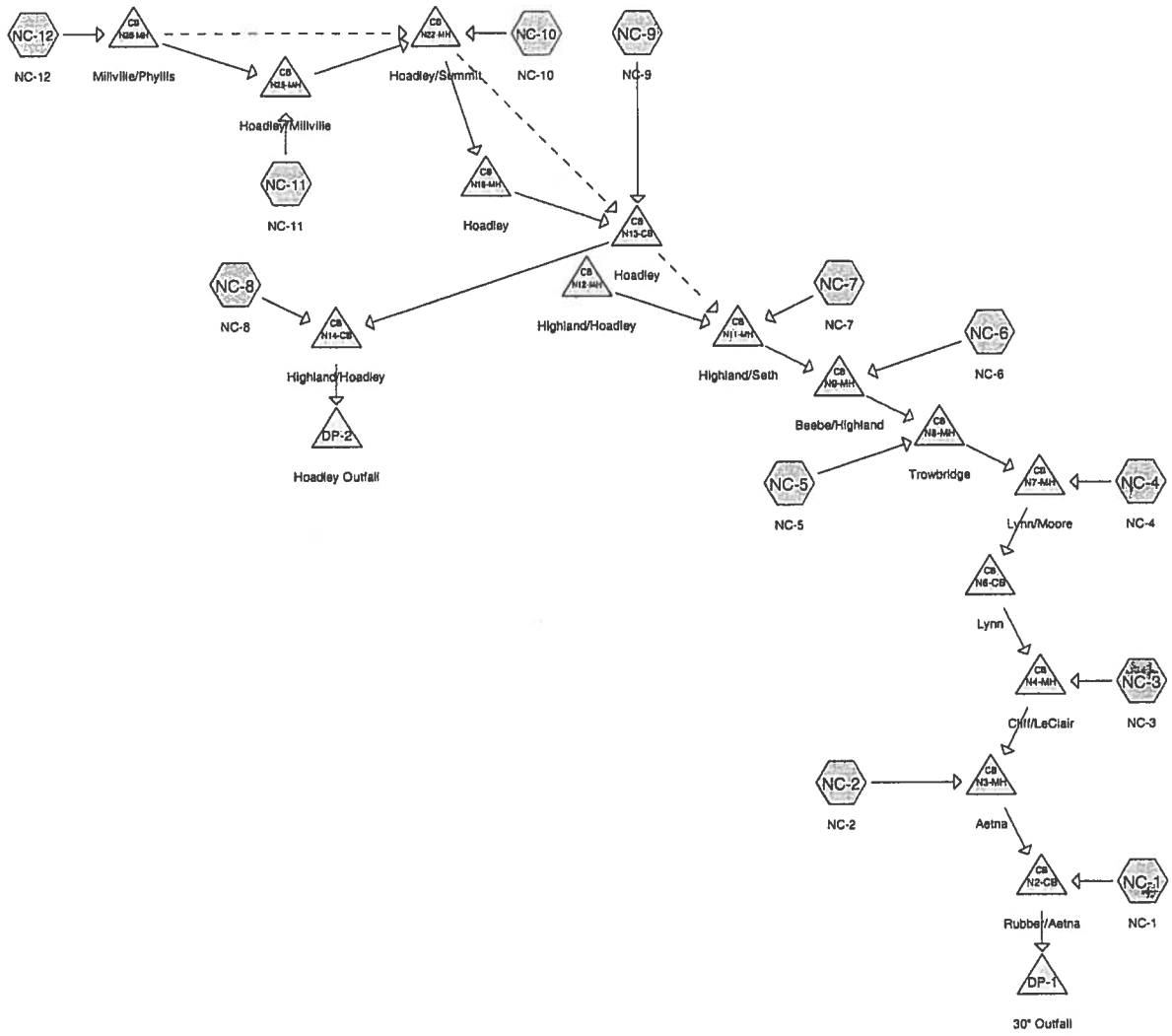

12
28.07 AC
11
7.65 AC
PN26
310' 42"@ 1.0%
10
74821.5245 SF
1.71 AC
8
1.28 AC
9
0.35 AC
PN25
680' 42"@ 8.25%
7
6.60 AC
PN12
450' 42"@ 9.8%
6
14.23 AC
HSG-B
HSG-C
CONRAD
PIERCE LN
CASPER CT.
PHYLLIS DR
N HOADLEY ST
FERN ST.
QUINN ST.
MILLVILLE AVE
POSSIBLE MH UNDER PAVEMENT
DAYTON RD.
PARK AVE
SUMMIT RD.
CLEARVIEW CIR
PINE
SETH ST.
HIGHLAND AVE
HOADLEY ST
WEST


#1
#3
#5
#4
#2
#9
#7
#6
#8
#8
HOADLEY
PINE
WEST
MARSHALL
GALPIN
BEEBE
GOODYEAR
NETTLETON
AETNA
EDWARD
RUBBER
DUNN
PARK
HIGHLAND
MOORE
LYNN
LE CLAIR
CLIFF
WALN
TROWBR


CONRAD
PIERCE LN
CASPER CT.
CONRAD
12
28.07 AC
PHYLLIS DR
N. HOADLEY ST.
FERN ST.
QUINN ST.
11
7.65 AC
PN26
310' 42" @ 1.0%
HSG-B
HSG-C
MILLVILLE AVE
MILLVILLE AVE
10
74821.5245 SF
1.717 AC
PARK AVE
DAYTON RD
DUNN AVE
PN25
780' 42" @ 8.25%
SUMMIT RD
8
1.28 AC
9
0.35 AC
CLEARVIEW CIR
PINE
SETH ST.
7
6.60 AC
PN12
HIGHLAND AVE
6
14.23 AC

APPENDIX B

Existing Condition
HydroCAD Output



Subcat Reach Pond Link

Drainage Diagram for 20466 Nettleton Existing
Prepared by CHA, Inc., Printed 10/5/2009

B

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment NC-1: NC-1 Runoff Area=0.827 ac 29.49% Impervious Runoff Depth>2.11"
Flow Length=340' Tc=9.9 min CN=73 Runoff=1.90 cfs 0.145 af

Subcatchment NC-10: NC-10 Runoff Area=1.717 ac 38.00% Impervious Runoff Depth>2.97"
Flow Length=720' Tc=8.9 min CN=83 Runoff=5.64 cfs 0.425 af

Subcatchment NC-11: NC-11 Runoff Area=7.650 ac 38.00% Impervious Runoff Depth>2.97"
Flow Length=1,070' Tc=15.5 min CN=83 Runoff=21.14 cfs 1.892 af

Subcatchment NC-12: NC-12 Runoff Area=28.074 ac 30.00% Impervious Runoff Depth>2.52"
Flow Length=2,020' Tc=12.0 min CN=78 Runoff=72.85 cfs 5.899 af

Subcatchment NC-2: NC-2 Runoff Area=9.416 ac 62.46% Impervious Runoff Depth>3.15"
Flow Length=1,350' Tc=17.6 min CN=85 Runoff=26.10 cfs 2.476 af

Subcatchment NC-3: NC-3 Runoff Area=8.617 ac 30.00% Impervious Runoff Depth>2.03"
Flow Length=690' Tc=11.9 min CN=72 Runoff=17.94 cfs 1.455 af

Subcatchment NC-4: NC-4 Runoff Area=11.311 ac 38.00% Impervious Runoff Depth>2.27"
Flow Length=940' Tc=10.9 min CN=75 Runoff=27.28 cfs 2.138 af

Subcatchment NC-5: NC-5 Runoff Area=5.985 ac 65.00% Impervious Runoff Depth>3.16"
Flow Length=500' Tc=8.2 min CN=85 Runoff=21.42 cfs 1.578 af

Subcatchment NC-6: NC-6 Runoff Area=14.217 ac 38.00% Impervious Runoff Depth>2.79"
Flow Length=1,335' Tc=13.1 min CN=81 Runoff=39.19 cfs 3.301 af

Subcatchment NC-7: NC-7 Runoff Area=6.596 ac 38.00% Impervious Runoff Depth>2.88"
Flow Length=730' Tc=7.5 min CN=82 Runoff=22.28 cfs 1.584 af

Subcatchment NC-8: NC-8 Runoff Area=1.284 ac 38.00% Impervious Runoff Depth>2.98"
Flow Length=480' Tc=6.3 min CN=83 Runoff=4.62 cfs 0.318 af

Subcatchment NC-9: NC-9 Runoff Area=0.349 ac 0.00% Impervious Runoff Depth>2.19"
Flow Length=385' Tc=5.1 min CN=74 Runoff=0.96 cfs 0.064 af

Pond DP-1: 30" Outfall Inflow=240.98 cfs 17.161 af
Primary=240.98 cfs 17.161 af

Pond DP-2: Hoadley Outfall Inflow=10.19 cfs 4.114 af
Primary=10.19 cfs 4.114 af

Pond N11-MH: Highland/Seth Peak Elev=621.53' Inflow=112.33 cfs 6.069 af
Primary=19.36 cfs 3.062 af Secondary=95.50 cfs 3.007 af Outflow=112.33 cfs 6.069 af

Pond N12-MH: Highland/Hoadley Peak Elev=0.00'
12.0" Round Culvert n=0.015 L=445.0' S=0.0924 '/' Primary=0.00 cfs 0.000 af

FIGURE 1

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Main: (860) 257-4557 · www.cloughharbour.com

EXISTING STORMWATER SITE PLAN
NETTLETON .ST. STUDY AREA

BOROUGH OF NAUGATUCK, CT

SCALE 1"=300'

PROJECT NO. 20466

DATE: 09/25/09

C-001B

Figure 7-1

Hydrologic Soil Group—State of Connecticut
(Nettleton Ave)

USDA Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

9/16/2009
Page 1 of 5

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:6,860 if printed on B size (11" × 17") sheet.

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 18N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 6, Mar 22, 2007

Date(s) aerial images were photographed: 8/14/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

FIGURE 2-2

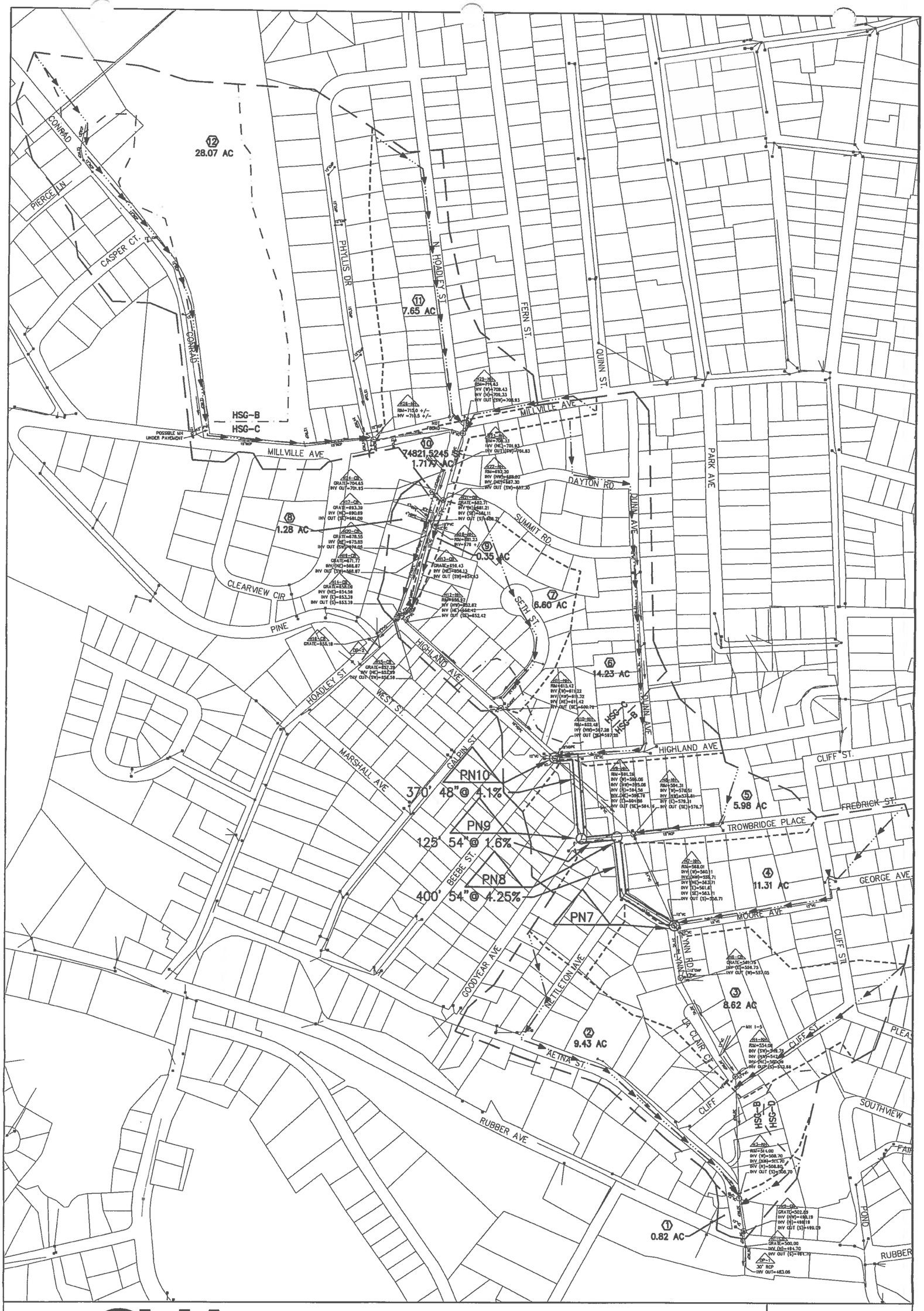

FIGURE 4

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PROPOSED INCREMENT–1 STORMWATER SITE PLAN
NETTLETON ST. STUDY AREA

BOROUGH OF NAUGATUCK, CT

SCALE 1"=300'

PROJECT NO. 20466

DATE: 09/28/09

C–101A

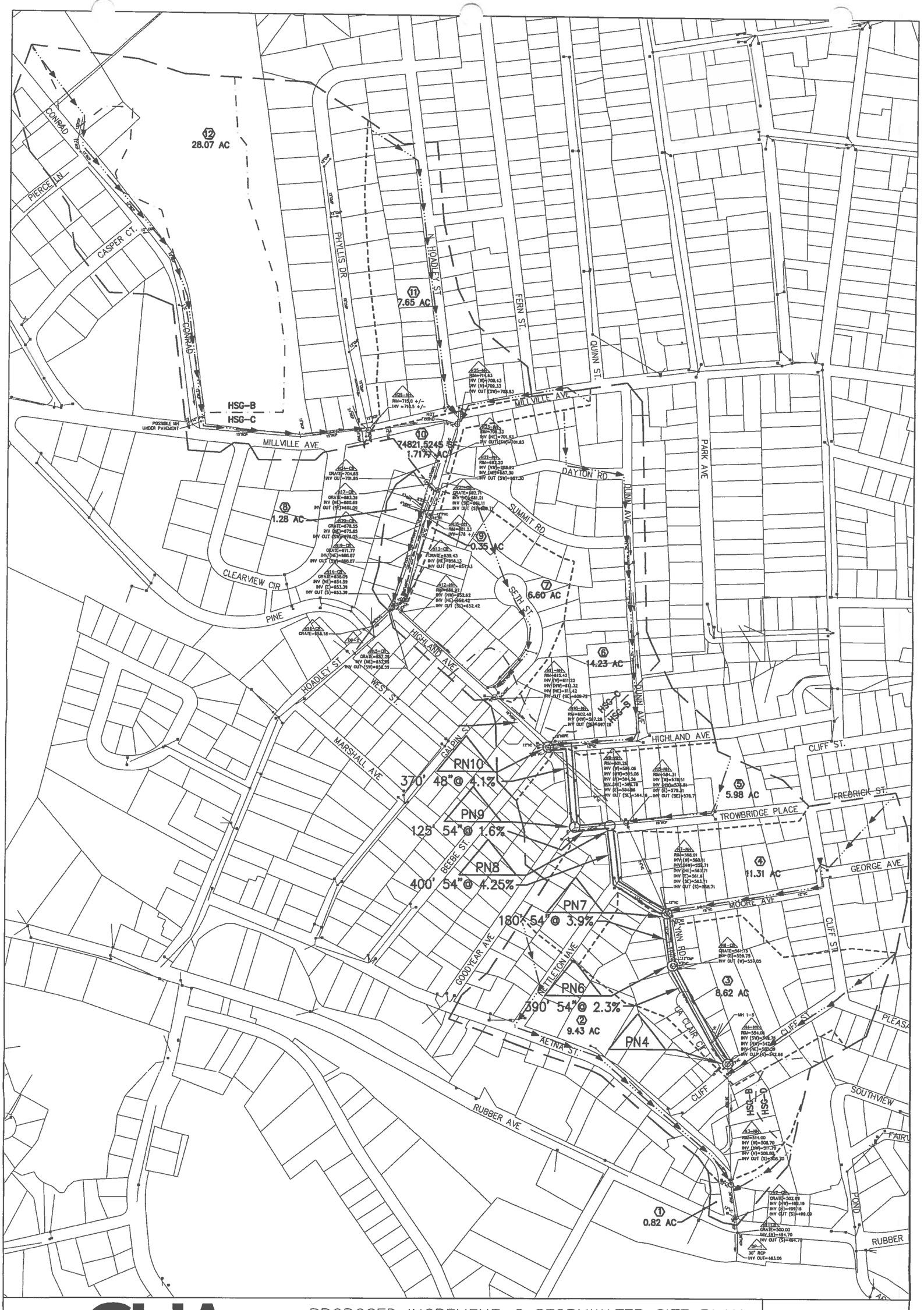

FIGURE 5

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PROPOSED INCREMENT–2 STORMWATER SITE PLAN
NETTLETON ST. STUDY AREA

BOROUGH OF NAUGATUCK, CT

SCALE 1"=300'

PROJECT NO. 20466

DATE: 09/28/09

C–101B

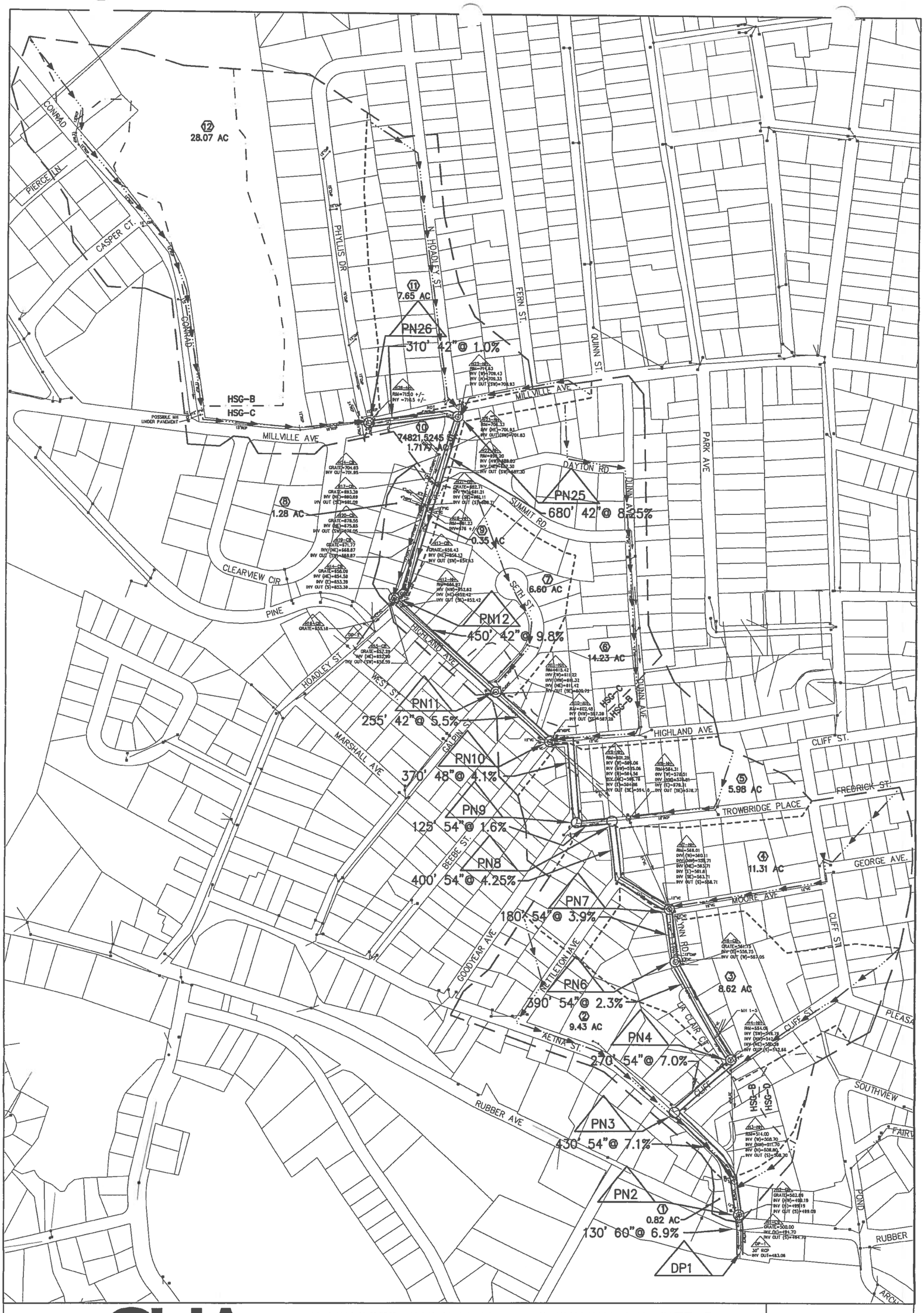

FIGURE 6

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PROPOSED INCREMENT–3 STORMWATER SITE PLAN
NETTLETON ST. STUDY AREA

BOROUGH OF NAUGATUCK, CT

SCALE 1"=300'

PROJECT NO. 20466

DATE: 09/28/09

C–101C

MAP #	NAME	ADDRESS	COMMENT
# 1	James& Tina Poginy	135 Highland Ave.	Found 12" clay pipe that runs under all houses on the north
			side of Highland, between Hoadley and Seth streets.
			Claims that the Seth development plugged the pipe and he
			now gets 4' of water in the basement when it rains.
# 2	George & Helen Northrup	61 Nettleton Ave.	Water flows through back yard into basement.
# 3	Charles Bowley	73-75 Goodyear Ave.	Water backs up from Trowbridge during heavy storms.
			Water gets into the basement whenever Trowbridge backsup.
			Told there is a seam transition fron steel to concrete.
# 4	Ray Lennon	106 Trowbridge St.	Water flows through back yard, simular to # 2. Flooding has
			been accurring for 40 years. Water is going around basin
			rather than into the basins on Seth Rd. since top coat of
			pavement is not installed. Suspects there may be sewer
			cross connections in this area.
# 5	Ken Shove	49 Moore Ave.	Has water flowing overland on both sides of house. Has two
			grates, one in the back yard and one at east side of house.
			He has been there for 8 years.
# 6	Eleanor Lawson	50 Moore Ave.	They are getting water on floor in basement in heavy rain.
			It started about three years ago. That is since the curb was
			replaced (5 yrs ago) and water has started to flow across
			the front lawn.
# 7	Flavia Sullivan	55 Moore Ave.	Water flows through the yard and also into basement. Been
			there 36 years. Sewer backed up once in the past 2 years.
# 8	Julie Sampaio	20 Lynn Rd.	Been there 11 yrs. LeClair house has wet floors, but not on
			walls. Same as the Lynn house, getting 1" to 3" in '07 and '09
			storms. Put in a sump pump in LaClair house because it has
			had water for 40 years.
# 9	Laura Rose	43 Moore Ave	Been there for 4 yrs. Back wall is damp & moldy with water
			on the floor.

Borough of Naugatuck
StormWater Drainage Study
Nettleton St. Neighbor's Comments

0 200 400 800 Feet

FIG-3

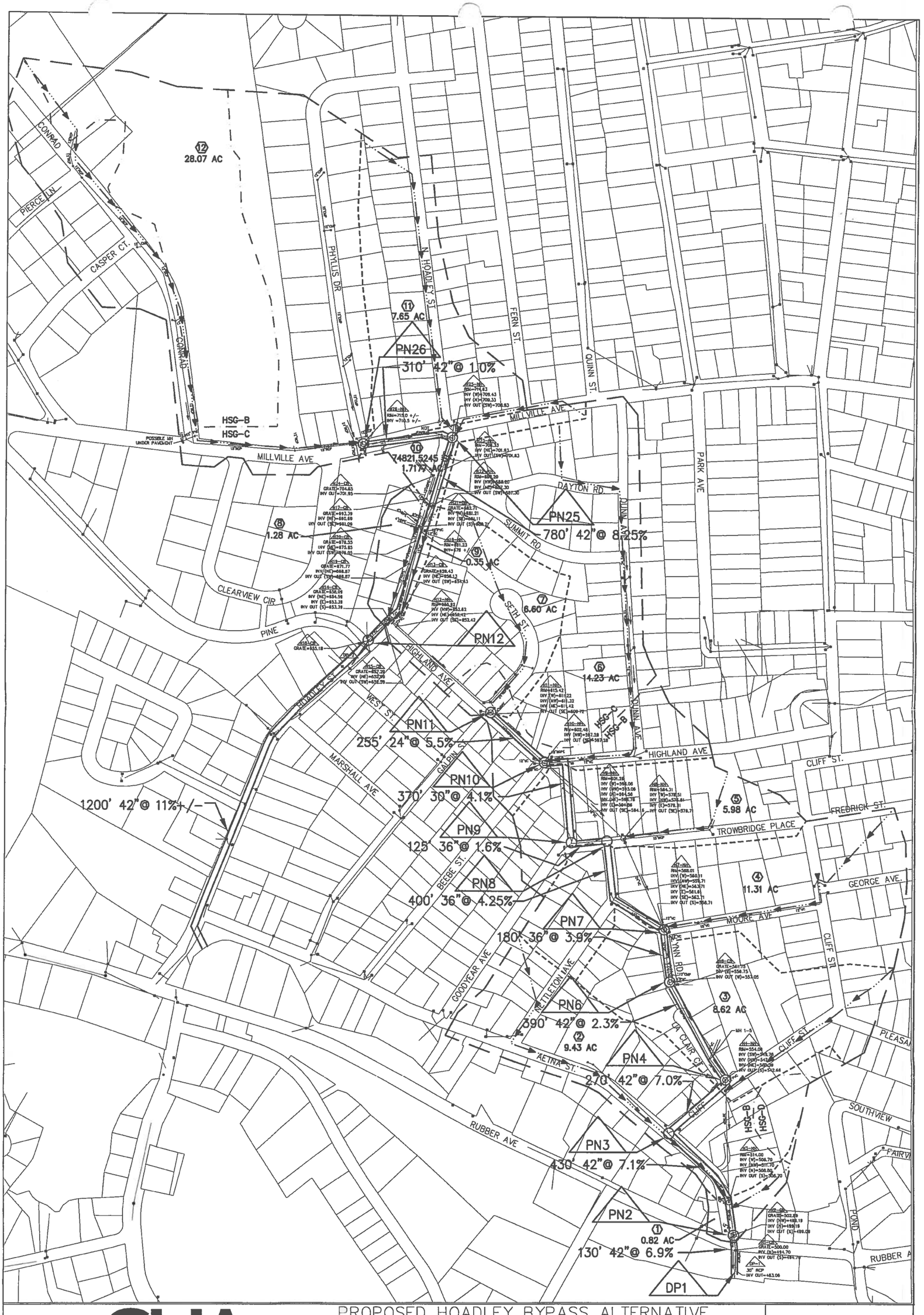

FIGURE 7

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PROPOSED HOADLEY BYPASS ALTERNATIVE
STORMWATER SITE PLAN
NETTLETON ST. STUDY AREA

BOROUGH OF NAUGATUCK, CT
SCALE 1"=300'

PROJECT NO. 20466

DATE: 09/29/09

C-101D

January 6, 2011

Hon. Robert A. Mezzo, Mayor
Borough of Naugatuck
229 Church Street
Naugatuck, CT 06770

RE: Environmental Subsurface Investigation Report
Nettleton Area Storm Drain Improvements in Naugatuck, CT
CHA Project No. 20466

Dear Mayor Mezzo:

CHA has prepared this Environmental Subsurface Investigation Report to summarize the results of the recently completed supplemental investigation activities along the proposed route of the Nettleton Avenue Neighborhood Drainage System Project. The investigation area is located near the intersection of Nettleton Avenue and Trowbridge Place in the Borough of Naugatuck, Connecticut (Site) (Figure 1). All Site investigation activities were conducted in accordance with CHA's scope of services outlined in Extra Work Authorization (EWA) No. 4 dated October 8, 2010.

This Environmental Subsurface Investigation Report provides site background information, the scope of the recently completed site investigation activities, a summary of the soil and groundwater sampling activities, a discussion of the laboratory analytical results, and a description of the nature and extent of contamination present along the proposed route of the Nettleton Avenue Neighborhood Drainage System Project. CHA's conclusions and recommendations are also provided herein based on the subsurface data generated to date.

Background

As you know, CHA completed a geotechnical investigation in May 2010 in support of the proposed Nettleton Avenue storm drain improvement project. The primary objectives of the investigation were to install eight (8) subsurface borings to evaluate subsurface conditions along the proposed storm drain line, provide geotechnical design recommendations, and provide data for a contractor designed excavation support system along a portion of the proposed storm drain alignment. In addition to the geotechnical activities, soils at each boring location were screened in the field for the presence of visual, olfactory, or photoionic evidence of contamination.

Based on the field screening, four (4) of the eight (8) soil boring locations exhibited field evidence of contamination. A representative soil sample was collected from each of the four (4) soil boring locations and was submitted for laboratory analysis. The analytical results were compared to the

remediation standards set forth in the Connecticut State Agencies Regulations §22a-133k, also known as the Remediation Standard Regulations (RSRs). However, it is noted that Section 22a-133k of the Connecticut State Agencies Regulations applies to any action taken to remediate polluted soil, surface water or a ground-water plume at or emanating from a release area which action is required pursuant to Chapter 445 or 446k of the General Statutes or is taken pursuant to Public Act 95-183 or Public Act 95-190, neither of which apply to the proposed project. Therefore, these remediation standards are being used only as guidance for this project.

Based on a review of the analytical results, only the sample from boring B-6 contained parameters at levels exceeding standards. Although all of the other samples collected contained some detected contaminants, no other regulated contaminants were detected at concentrations that exceed State of Connecticut Department of Environmental Protection (CT DEP) remediation standards. The results obtained during the May/June 2010 geotechnical investigation indicated that contamination was mainly present in the vicinity of boring B-6 (Figure 2).

Based on the identified contamination, soils excavated during construction which contain contaminants at concentrations that exceed Connecticut RSRs cannot be reused on-site without CT DEP approval and would likely require proper off-site disposal. In addition to the impacted soils that were identified, the upper stratum observed during the subsurface investigation was identified as urban fill. Currently, the State of Connecticut regulates the management of urban fill on a site-specific basis. As such, CHA indicated that management of excavated soil will likely be required for this project.

Due to the limited nature of the initial investigation, the exact limits of the contamination and the associated volume of soil potentially requiring management were not known. In addition, management of both the impacted soils and urban fill will be at the discretion of the CT DEP. As such, CHA recommended that additional investigation be performed in order to further define the nature and extent of contamination along the proposed storm drain line so that a definitive action-specific plan for the management of contaminated soils may be communicated to CT DEP prior to the start of construction.

The supplemental environmental investigation activities were recently completed and the following sections discuss the field activities conducted as part of the supplemental investigation, the results of those activities, and our conclusions.

Subsurface Investigation

A. Soil Borings

On November 18, 2010, CHA installed eight (8) additional soil borings along the route of the proposed Nettleton Avenue Neighborhood Drainage System Project to further delineate the extent of contamination in the vicinity of previously installed boring B-6. The locations of the borings are shown on Figure 2.

At each boring location, soil samples were collected continuously throughout the depth of each boring and screened in the field for the presence of visual, olfactory, or photoionic evidence of contamination. A Rae Systems Model MiniRae 2000 photoionization detector (PID) was used to screen each sample

for the presence of organic vapors. The unit was calibrated with 100 parts per million (PPM) isobutylene gas onsite prior to use.

Soil borings were installed to depths ranging between 3 and 13.6 feet below ground surface (bgs). The depths of the borings varied as a result of varying geologic conditions between locations. Each boring was met with refusal. Copies of the Subsurface Boring Logs summarizing the subsurface conditions and field screening results at each location are included as Attachment A.

Based on the field screening results, a representative soil sample was collected from each soil boring location and was submitted for laboratory analysis. Soil samples were collected from either the interval where the highest level of contamination was observed based on PID readings and visual/olfactory observation or, in the absence of observed contamination, an interval that was inferred to be urban fill. A summary that identifies each of the collected soil samples and associated analyses is provided in Table 1. Upon completion, each Geoprobe® boring was backfilled with the soil cuttings removed from each respective boring location.

To avoid cross-contamination, all non-disposable down-hole boring equipment was decontaminated following each boring by flushing and wiping the components to remove all visible sediments, washing and scrubbing with low phosphate detergent, and performing a final clean water rinse.

The soil samples submitted for analyses were delivered following proper chain-of-custody protocols to TestAmerica Laboratories, Inc. of Shelton, Connecticut (CT) to conduct the necessary analyses. Each sample (soil and groundwater) was analyzed for the presence of extractable total petroleum hydrocarbons (ETPH) via Method CT ETPH, volatile organic compounds (VOCs) via EPA Method 8260B, semi-volatile organic compounds (SVOCs) via EPA Method 8270C, pesticides via EPA Method 8081A, metals via EPA Method 6020, and mercury via EPA Method 7471A.

In addition to the eight primary soil samples collected, one soil sample was collected from boring GP-3 (2’ to 3’) and analyzed using the Toxicity Characteristic Leaching Procedure (TCLP) in order to determine if the soil is a characteristic hazardous waste. The sample was collected from GP-3 due to the documented presence of contamination in previously installed and nearby boring B-6.

B. Groundwater Sampling

To evaluate potential impacts to groundwater quality in the project area, a grab groundwater sample was collected at boring location GP-2. The groundwater sampling point consisted of a 10-foot section of 1-inch diameter, 10-slot PVC screen installed to a depth of 13.6 feet bgs and finished with the requisite length of solid PVC riser pipe. The well screen was inserted into the Geoprobe® boring to straddle the water table, which was observed at approximately 12 feet bgs. Following the installation of the temporary point, the temporary well was purged by removing approximately three well volumes. Purge water was discharged to the ground. Only disposable equipment was used to collect the groundwater sample; as such, no equipment decontamination was required. A groundwater sample was then collected following the purging activities.

The groundwater sample submitted for analyses was delivered following proper chain-of-custody protocols to TestAmerica Laboratories, Inc. of Shelton, Connecticut (CT) to conduct the necessary

analyses. Each sample (soil and groundwater) was analyzed for the presence of extractable total petroleum hydrocarbons (ETPH) via Method CT ETPH, volatile organic compounds (VOCs) via EPA Method 8260B, semi-volatile organic compounds (SVOCs) via EPA Method 8270C, pesticides via EPA Method 8081A, metals via EPA Method 6020, and mercury via EPA Method 7471A.

RESULTS

A. Field Observations

As noted, soil samples were collected continuously throughout the depth of each boring and screened in the field for the presence of visual, olfactory, or photoionic evidence of contamination. In addition, subsurface conditions encountered in the borings were recorded on the subsurface logs included as Attachment A.

In general, the lithology consisted of either asphalt or topsoil underlain by a fill unit. The fill unit consists of fine to coarse sand with varying amounts of fine to coarse gravel and silt and was encountered below the asphalt/topsoil in all of the borings. In some borings, the fill unit also contained cinders and/or ash. In general, the fill unit extended to depths ranging from four (4) to five (5) feet bgs. Underlying the fill unit was a similar unit, generally indistinguishable, consisting of a mixture of fine to coarse grained sand and silt. Although the borings were installed with a Geoprobe unit during this investigation, the previous investigation at the Site identified this interval as a glacial till unit based on standard penetration test (SPT) resistance values.

In general, there was no visual, olfactory or photoionic evidence of contamination in any of the borings with the exception of GP-4. The interval from 8 to 9.2 feet bgs in boring GP-4 was observed to have a slight asphalt/petroleum odor. In addition, screening of this interval exhibited a PID reading of 2.1 ppm. No other evidence of contamination was observed in the field.

B. Soil Analytical Results

As previously discussed, representative soil samples were collected from each of the eight (8) soil borings that were installed on the Site. The results of the laboratory analyses are presented in Table 2 along with the remediation standards set forth in the Connecticut State Agencies Regulations §22a-133k (RSRs). A copy of the laboratory analytical report is included as Attachment B. Those values that are in bold in Table 2 indicate that the associated parameter was detected at a concentration above the associated Direct Exposure Criteria for Soil outlined in the Connecticut RSRs. Those values that are shaded in Table 2 indicate that the associated parameter was detected at a concentration above the associated Pollutant Mobility Criteria for Soil.

Based on a review of the laboratory results, only the samples from borings GP-2 and GP-4 contained parameters at levels exceeding standards. However, a summary of all analytical results is provided in the following sections.

Nettleton Avenue

The soil samples collected from borings GP-7 and GP-8, installed along Nettleton Avenue contained low levels of both SVOCs and ETPH. However, concentrations of all detected SVOCs and of ETPH were well below both the Pollutant Mobility Criteria and Residential Direct Exposure Criteria. The soil samples did not contain any detectable levels of VOCs, pesticides or metals.

Trowbridge Place

Four borings were installed along Trowbridge Place, extending from the intersection with Nettleton Avenue to the intersection with Goodyear Avenue. The soil sample collected from boring GP-1, installed at the intersection of Nettleton Avenue and Trowbridge Place, contained low concentrations of VOCs, but all concentrations were well below both the Pollutant Mobility Criteria and Residential Direct Exposure Criteria. There were no SVOCs, metals or detectable levels of ETPH in boring GP-1.

It is noted that the soil sample collected from boring GP-3, installed nearly directly adjacent to boring B-6 on Trowbridge Avenue, did not contain any detectable levels of VOCs, SVOCs, ETPH, or metals. However, boring GP-2 was installed approximately 50 feet to the west of GP-3 and contained SVOCs at levels exceeding standards. The soil sample collected from boring GP-2 (4 to 4.5 feet bgs) contained three regulated contaminants detected at concentrations slightly above both the Pollutant Mobility Criteria and Residential Direct Exposure Criteria of 1,000 µg/kg. In addition, one contaminant (phenanthrene) was detected at a concentration exceeding the associated Pollutant Mobility Criteria. Boring GP-2 also contained low concentrations of VOCs and ETPH, but concentrations of these contaminants were well below both the Pollutant Mobility Criteria and Residential Direct Exposure Criteria.

Boring GP-4 was installed at the intersection of Trowbridge Place and Goodyear Avenue. The soil sample collected from boring GP-4 (8 to 9.2 feet bgs) contained two VOCs (naphthalene and acetone) at levels exceeding the Pollutant Mobility Criteria. There were no VOCs detected above Residential Direct Exposure Criteria. In addition, there were 10 SVOCs detected in the soil sample at concentrations exceeding the associated Pollutant Mobility Criteria, three of which were also detected above the Residential Direct Exposure Criteria. The soil sample also contained ETPH at a concentration exceeding both the Pollutant Mobility Criteria and Residential Direct Exposure Criteria of 500,000 µg/kg. There were no metals or pesticides detected in boring GP-4.

Goodyear Avenue

Borings GP-5 and GP-6 were installed along Goodyear Avenue. Samples collected from both borings contained low concentrations of several VOCs, SVOCs, and ETPH, but all concentrations were well below both the Pollutant Mobility Criteria and Residential Direct Exposure Criteria. Arsenic was detected in the soil sample collected from boring GP-5 at a concentration of 27.3 mg/kg, slightly above the associated Residential Direct Exposure Criteria of 10 mg/kg.

C. Hazardous Waste Characterization Results

As previously noted, an additional volume of soil was collected from boring GP-3 and submitted for analysis via the Toxicity Characteristic Leaching Procedure (TCLP) in order to determine if the soil is a characteristic hazardous waste. The results of the laboratory analyses are presented in Table 3 along with the maximum concentration of contaminants for the toxicity characteristic. Based on the results, no contaminants were detected in the soil sample collected from boring GP-3 at concentrations which exceed the regulatory limit associated with the toxicity characterization outlined in Title 40 of the Code of Federal Regulations Section 261.24.

D. Groundwater Analytical Results

As previously discussed, one representative groundwater sample was collected from a temporary sampling point installed in boring GP-2 and analyzed for VOCs, SVOCs, CT ETPH, pesticides, and metals. The results of the laboratory analyses are presented in Table 4 along with the Remediation Standards set forth by the CTDEP. A copy of the laboratory analytical report is included as Attachment B. Those values that are in bold in Table 4 indicate that the associated contaminant was detected at a concentration above the associated Groundwater Protection Criteria outlined in the Connecticut RSRs.

The analytical results indicate that eight (8) metals were detected at concentrations exceeding the associated Groundwater Protection Criteria. These metals include arsenic, barium, beryllium, chromium, lead, nickel, selenium, and vanadium, all of which were also present in the associated soil sample collected from boring GP-2.

There were no other parameters detected above an associated Groundwater Protection Criteria in the grab groundwater sample collected from boring GP-2.

Discussion and Recommendations

The results obtained to date indicate that soil contamination is generally limited to the area along the Trowbridge Place section of the proposed storm sewer alignment. The analytical data suggest that SVOC soil contamination is present in the vicinity of borings GP-2 and GP-4. Field screening of soils confirm the presence of low-level impacts in the vicinity of boring GP-4. In general, the compounds detected at concentrations exceeding standards are those which are associated with petroleum contamination or are products of incomplete combustion and further indicate the presence of low-level petroleum contamination, likely to be associated with urban fill.

Based on the results and the design of the proposed improvements, it is anticipated that some soils will require management during the construction phase. However, the need to manage, stockpile and further characterize soils will be at the discretion of the CT DEP. As such, with Borough approval, CHA proposes to contact CT DEP to provide them with the current status of the project and the results of both the initial and supplemental environmental investigation. Under consultation with CT DEP, CHA will confirm whether or not soils excavated from the Trowbridge Place section will be approved for re-use within the utility trench. CHA will request written approval for re-use of impacted soils, non-impacted urban fill, and/or natural soils within the utility trench.

If impacted soils will not be re-used on site, CHA proposes to request approval from CT DEP to develop and implement a Soil Management Plan which outlines the procedures to be used during construction to screen, segregate and properly dispose of impacted soils at an approved off-site facility. CHA will identify such facilities and the estimated disposal costs.

Groundwater in the vicinity of GP-2 area appears to be only minimally impacted by metals. However, it is noted that a groundwater sample was not collected from boring GP-4, which exhibited the highest levels of contamination, since groundwater was not observed in the boring. As such, groundwater impacts in the vicinity of GP-4 cannot be ruled out. Based on the data generated to date, CHA will also consult with CT DEP on potential requirements for management/treatment of the minimally impacted groundwater identified at the project site. However, at this time, it is anticipated that no extreme measures will be required to accommodate the low levels of metals that have been detected.

If you have any questions or comments regarding this report or need any additional information, please do not hesitate to contact Martin Risley at (603) 354-7998 ext. 241.

Sincerely,

Keith Ziobron, PE, LEP
Project Engineer

SDN/

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CC: Martin Risley, CHA
Jim Stewart, P.E., Borough Engineer

FIGURES

Figure 1: Site Location Map
Figure 2: Boring Location Map

TABLES

Table 1: Sample Summary
Table 2: Soil Analytical Results
Table 3: TCLP Analytical Results
Table 4: Groundwater Analytical Results

ATTACHMENTS

Attachment A: Soil Boring Logs
Attachment B: Laboratory Analytical Report

FIGURES

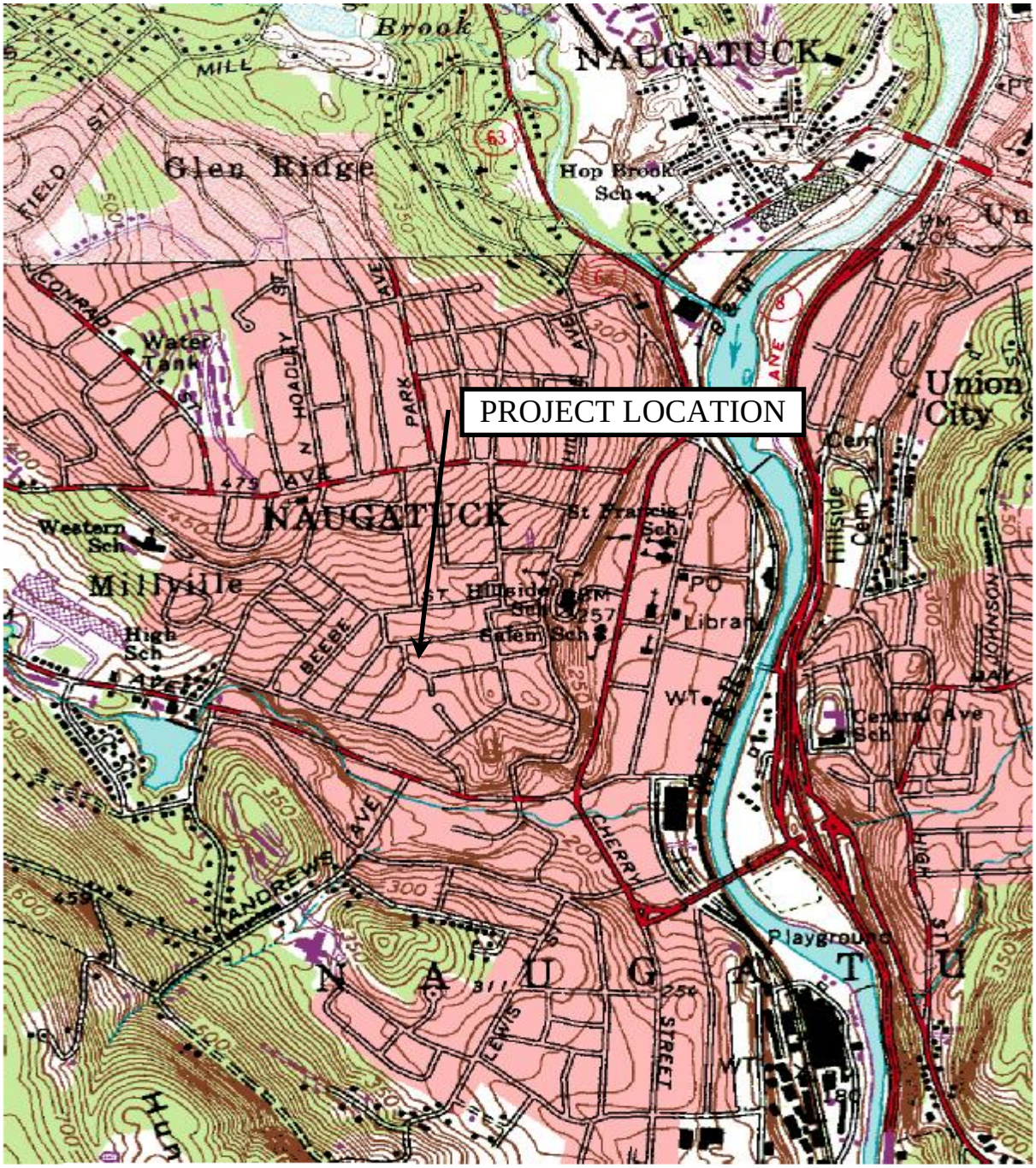

IMAGE DATE: 07/01/1992

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Figure 1
Project Location Map

Scale: 1" = 1 mile

Project No.: 20466

STORM SEWER IMPROVEMENTS
NETTLETON AVENUE
NAUGATUCK, CT

LEGEND

B-1
APPROXIMATE GEOTECHNICAL BORING LOCATION (INSTALLED MAY 2010)

GP-8
APPROXIMATE GEOPROBE® BORING LOCATION (INSTALLED NOVEMBER 2010)

CHA
11 Kling Court · Keene, NH 03431-4648
Maine (603) 357-2445 · www.chacompanies.com

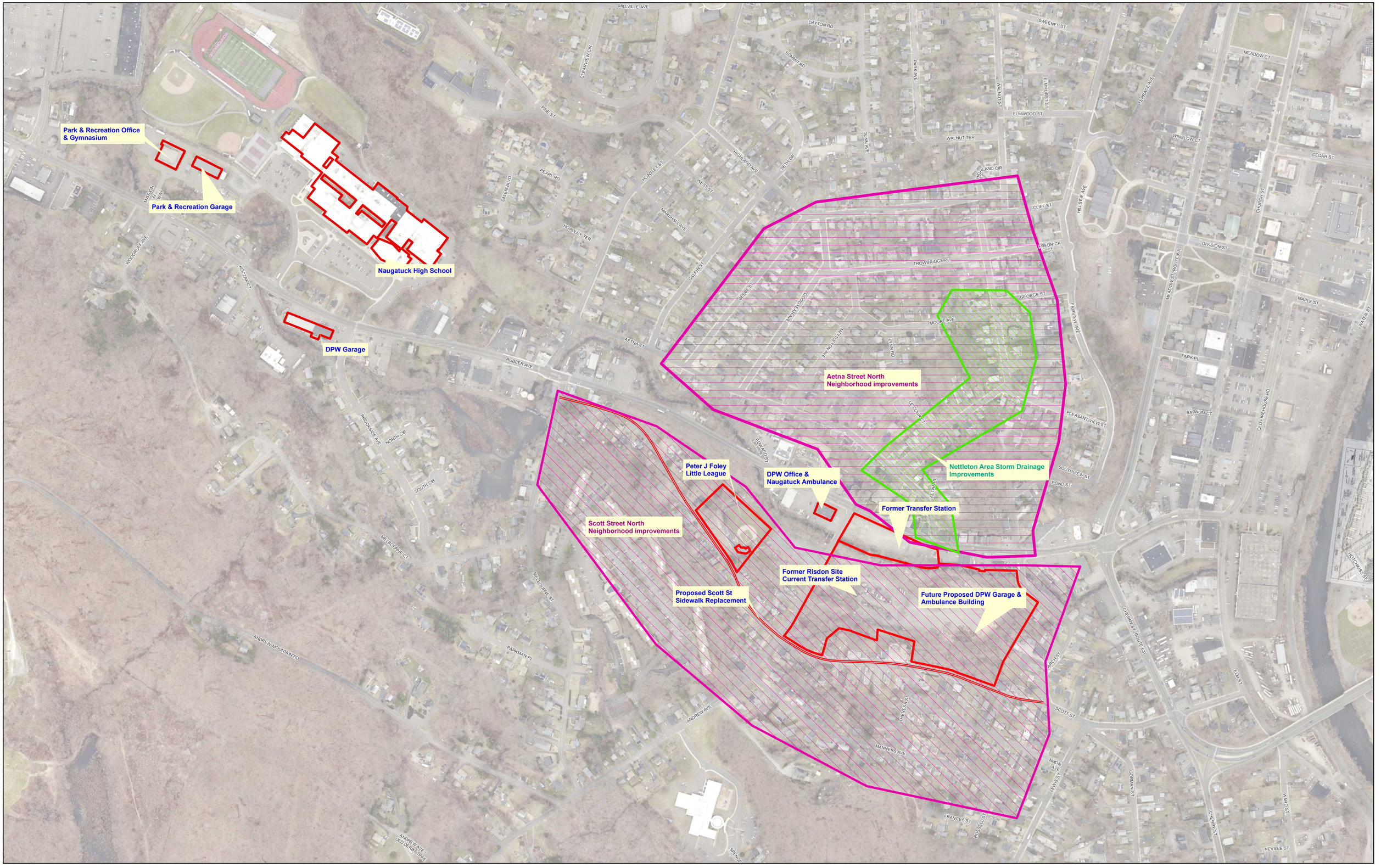
BORING LOCATION PLAN

STORM SEWER IMPROVEMENTS
NETTLETON AVENUE
NAUGATUCK, CT

PROJECT NO. 20466
DATE: 12/2010
FIGURE 2

ATTACHMENT G

Maps



N

0 120 240 480 Feet

Rubber Avenue Revitalization Project

RUBBER AVENUE

ARCH STREET

ANDREW STREET

AMBULANCE BLDG. 90'x45'

RECYCLING AREA

±6,000 S.F. BREAK ROOM & STORAGE

TRUCK BAYS 200'x120'

±6,000 S.F. BREAK ROOM & STORAGE

±75'

±210'

±135'

±140'

±75'

100'x20' COVERED STORAGE

SCALE: 1"=40'
DATE: 8/31/22

Public Works

34 Andrew St
Naugatuck, CT

0 40 80 120
Feet
1 inch equals 40 ft

SLR
99 REALTY DRIVE
CHESHIRE, CT 06410
203.271.1773