March 20, 2024

Planning and Zoning Commission
Town Hall Annex
238 Danbury Road
Wilton, CT 06897
Attn: Mr. Michael E. Wrinn, Town Planner

RE: Application for Change of Zone (#23406) and Special Permit (#515) Approval
Project Site: 131 Danbury Road
Contract Purchaser: 131 Danbury Wilton Dev AMS LLC
(an affiliate of AMS Acquisitions, LLC)

Dear Mr. Wrinn,

On behalf of our client, 131 Danbury Wilton Dev AMS LLC (an affiliate of AMS Acquisitions, LLC) (the "Applicant"), the contract purchaser and potential developer of 131 Danbury Road, we are submitting revised materials described below in support of the above referenced applications. In general, these documents were updated during the Inland Wetlands Commission process to respond to the thorough peer review and comments by town officials.

One notable change to the site plan was made to satisfy the Fire Marshal and ensure sufficient staging area for Fire Department Apparatus. On the north side of the site, the location of the drive aisle was swapped with its adjacent parking such that the parking is now on the building side of the drive aisle. In addition, the drive aisle was widened to 26 feet. This affords more room for a ladder to be extended to the roof should emergency conditions so require. With this swap, the parking needs to be placed at least six feet clear of the building to comply with Zoning Regulation 29-8.B.9.c. Location of Parking. To accommodate these requirements, the Applicant is requesting a partial waiver of the northerly Landscape Buffer pursuant to Zoning Regulation 29-8.C.2.d as there already exists sufficient landscaping to adequately screen the adjacent parking and multi-family use at 141 Danbury Road (pictures appended hereto). The northerly edge of the zoning required drive aisle is now depicted 8.5 feet from the northerly property boundary. An additional 4 feet of stamped and colored pavement or concrete will be applied functioning both as a pedestrian walkway and additional room for fire access. This results in a 4-foot-wide buffer in lieu of the otherwise required 10 feet.

The proposed version of the site plan is depicted on Sheet LA Site Plan Layout and Sheet LS Site Plan Landscaping revised through March 20, 2024. The other documents still display the original layout.

Included herewith are the following documents submitted for the record:

1. Site Engineering Plans prepared by SLR, dated October 23, 2023 (revision dates indicated below) including sheets:
   a. Title Sheet (3/8/24)
   b. NL – Notes and Legend (3/8/24)

c. EX – Existing Conditions (2/13/24)
d. SP – Site Vicinity Plan (3/8/24)
e. LA – Site Plan – Layout (3/20/24)
f. LS – Site Plan – Landscaping (3/20/24)
g. GR – Site Plan – Grading (3/8/24)
h. UT – Site Plan – Utilities (3/8/24)
i. SE-1 – Sediment and Erosion Control Plans (3/8/24)
j. SE-2 – Sediment and Erosion Control Specifications and Details (2/28/24)
k. SD-1 – Site Details (2/28/24)
l. SD-2 – Site Details (2/28/24)
m. SD-3 – Site Details (2/28/24)
n. SD-4 – Site Details (2/28/24)
o. SD-5 – Site Details (2/28/24)
p. SE-6 – Site Details (2/28/24)
q. SD-7 – Site Details (3/8/24)
r. SD-8 – Site Details (2/28/24)
s. ABG – Combined Average Building Grade (3/8/24)
t. IFP – Interpolated Floodplain Earthwork (3/8/24)
u. EW – Proposed Site Earthwork (3/8/24)
v. UR – Upland Review Area Earthwork (3/8/24)
w. VH-1 – Vehicle Turning Movement – Fire Truck (3/8/24)
x. VH-2 – Vehicle Turning Movement – SU-30 and 15' Box Truck (3/8/24)

2. Draft Flood Preparedness Plan, prepared by Redniss & Mead, dated January 31, 2024, and revised through March 20, 2024.

3. Preliminary Construction Management Plan, prepared by AMS Construction Management LLC, dated March 20, 2024

4. Drainage Report, prepared by SLR, dated October 23, 2023, and revised through February 13, 2024

5. Engineering Report – Floodplain Analysis, prepared by SLR, dated November 27, 2023, and revised through February 13, 2024

The Applicant looks forward to presenting the proposal to the Commission at its meeting on March 25, 2024

Sincerely,

Craig J. Flaherty, P.E.

PICTURE FROM 131 DANBURY ROAD SHOWING THE EXISTING EVERGREEN BUFFER ALONG THE NORTHERLY PROPERTY BOUNDARY (RIGHT SIDE OF IMAGE). TRUNKS ARE ON 141 DANBURY ROAD. BRANCHES EXTEND OVER 131 DANBURY ROAD

PICTURE FROM 131 DANBURY ROAD SHOWING THE EXISTING EVERGREEN BUFFER ALONG THE NORTHERLY PROPERTY BOUNDARY. TRUNKS ARE ON 141 DANBURY ROAD. BRANCHES EXTEND OVER 131 DANBURY ROAD

DRAFT

Flood Preparedness Plan

for

131 Danbury Road, Wilton, CT

prepared for

131 Danbury Wilton Dev AMS LLC

issued on

January 31, 2024

revised on

March 20, 2024

Prepared by Redniss & Mead, Inc.

22 First Street | Stamford, CT 06905 | Tel: 203.327.0500 | Fax: 203.357.1118 | www.rednissmead.com

Table of Contents

Orientation Map

I. INTRODUCTION

Property Description

131 Danbury Road is located on the west side of Danbury Road, south of its intersection with Westport Road. The property abuts the Norwalk River along its western property line. The proposed improvements include removing the existing office building and replacing it with a new 4 ½ - story residential building.

This Flood Preparedness Plan is provided to alert the owners, management personnel, and residents of 131 Danbury Road as to the nature of potential flooding on and around the property, to provide information to facilitate awareness and preparedness, and to outline a plan so that people can safely relocate their vehicles before a severe flood. During a 5-year storm (less than 20% chance of occurring in any given year), flooding is limited to areas between the parking lot and the Norwalk River. During less frequent and more severe rainfall events, flooding is predicted to encroach onto the parking lot starting from the westerly edge (see Inundation Exhibit)

Nature of Flooding

The westerly half of the site falls within AE Regulatory Flood Zone as depicted on the Federal Emergency Management Agency – Flood Insurance Map Community No. 090020 Panel 391 Suffix F, effective date June 18, 2010. The dry weather water surface of the Norwalk River bordering the site is elevation 137, based on the NAVD-88 Datum. The Base Flood Elevation is 146.50 pursuant to "Engineering Report – Floodplain Analysis", prepared by SLR Consulting and dated February 13, 2024. The Base Flood Elevation refers to the water surface elevation of the Norwalk River during the 100-year storm as related to the referenced datum (roughly sea level). This event, which is severe and infrequent, is defined as having a 1% chance of occurring in any given year and generally corresponds to a rain event in which 8.35 inches of rain falls within a 24-hour period. The water surface elevation of the Norwalk River is modeled to be 144.90 in the 10-year storm. The 10-year storm has a 10% chance of occurring in any given year and generally corresponds to a rain event in which 5.39 inches of rain falls within a 24-hour period. The nature and severity of flooding can vary depending on several factors, so the above information is provided as a general guide. Below is a table summarizing the flood elevations and associated 24-hour rainfalls for various rainfall events:

	Flood Elevation	24-Hour Rainfall (in.)
2-year	140.10	3.53
5-year	142.20	4.55
10-year	144.90	5.39
50-year	145.75	7.42
100-year	146.50	8.35
500-year	147.36	11.1

The proposed building is elevated above surface parking, ensuring all living areas and critical mechanical and electrical systems are well above the predicted Base Flood Elevation. The first-floor elevation is 157.5, which is 11 feet above the Base Flood Elevation. Portions of the surface parking north and south of the building and the parking underneath the building are below the Base Flood Elevation and are likely to experience flooding during a 100-year storm. Refer to the Flood Inundation Exhibit for a depiction of the portions of the site that will be subject to flooding during the 10-year flood and the 100-year Base Flood Event including corresponding flood depths.

During a 10-year flood event, flooding occurs up to elevation 144.90. This impacts 133 parking spaces with flood depths of 33.6" at the western edge of the parking lot. The 100-year Base Flood reaches an elevation of 146.50 and impacts 210 parking spaces. Flood depths are 52.8" along the western edge of the surface parking. The eastern portion of the site and Danbury Road are not impacted by river flooding during the 100-year Base Flood Event. Residents can enter and leave the building through the front entrance, and emergency service personnel and vehicles are able to access the site.

II. <u>FLOOD PREPAREDNESS</u>

Awareness and Preparedness

The key to effectively reducing threats to public health and safety in flood prone areas is public awareness. Accordingly, the following is a list of suggestions to be best prepared in the event a flood emergency occurs:

- Residents shall be made aware of the potential for flooding and impacted parking spaces and be provided with a copy of this Flood Preparedness Plan.

- Residents and management personnel shall periodically review the guidelines outlined in this Flood Preparedness Plan.

- Permanent signage shall be maintained in the elevators and stairwells accessing the parking level and affected parking areas noting the flood risk and depicting potentially impacted parking spaces.

- A 6" wide blue stripe will be painted through the surface parking and garage at the Base Flood Elevation of 146.50. "Flood Zone" will be painted in 12" tall lettering on the downhill side of the line in the surface parking and garage drive aisles.

- Residents shall consider parking their cars in unaffected parking areas if they are planning to be away.

Responsibilities

It is the responsibility of both the residents and building management to monitor weather conditions and prepare for flooding if more than four inches (4") of rain is predicted. It is the responsibility of residents and building management personnel to register with the Wilton Code Red Emergency Notification System (see next section). When information related to flood

warnings or observations is received, building management shall disseminate such information to residents promptly. It is the responsibility of residents to take action to relocate their vehicle(s).

Flood Warning Procedure

Residents and building management shall maintain a careful watch on conditions when more than four inches (4") of rain is forecast or has fallen in a storm event. Emergency information is distributed through the Town of Wilton Code RED Emergency Notification System. Residents can sign up for code red at the following website: https://public.coderedweb.com/CNE/en-US/BFB7CC4C6C0A. Per the Town's website "messages are generally distributed when emergency conditions exist or to update residents regarding important information after significant storms." To receive additional information residents can visit the town website, call the Wilton Hot Line at 203-563-0256 or follow the Town of Wilton on X. Any of the above-mentioned resources shall be used in while also checking other local news sources and monitoring other emergency communications (see list below).

Conditions shall be monitored by building management and information disseminated by management via email, text or posted notices.

Flood and River Flood Watches and Warnings, Flash Flood Warnings, and Storm Warnings are issued by the National Weather Service. These warnings shall be heeded by residents. Residents can monitor weather conditions via weather websites like weather.com, accuweather.com, and the National Weather Service.

Another helpful source of information is the USGS Water Data website which actively posts the Norwalk River depth measured at a stream gauge just downstream of the site (website link below). Bank full flows at 131 Danbury Road roughly correlate with a gauge depth of five feet at the stream gauge. Stream gauge measurements are intended to determine the relative water surface elevation. Since the gauge is further downstream, the measured elevations do not directly represent the elevation of the river at the site.

The following broadcast and internet-based sources shall be monitored during severe rainfall events for information regarding current flooding conditions:

Radio:	WSTC	(1400 AM)
	WGCH	(1490 AM)
	Fox Radio	(95.9 FM)
	WNLK	(1350 AM)
Television:	News 12 Connecticut	(Channel 12)
	WTNH Channel 8	(Channel 8)
Website:	Town of Wilton	https://www.wiltonct.org
	The Weather Channel	https://weather.com

AccuWeather https://www.accuweather.com
National Weather Service https://www.weather.gov/
Norwalk River at South Wilton Gauge https://waterdata.usgs.gov/monitoring-location/01209700/#parameterCode=00065&period=P7D&showMedian=false

If conditions continue to worsen during a flood event, residents of the building may be advised to take certain action which may include the following:

- Make sure there are no vehicles in front of the building or within the access drive that may impede emergency access or residents relocating their vehicles.

- Move cars parked from the western portions of the site to higher ground.

In the event of a flood, residents and management are reminded to:

- Follow instructions given by public safety officials.

- Do not walk through flowing water. Most drownings occur during flash floods. Six inches of swiftly moving water can knock you off of your feet.

- Remember the phrase "Turn Around, Don't Drown!" Don't drive through flooded roads. Cars can be swept away in only two feet of moving water. If your vehicle is trapped in rapidly moving water, stay in the vehicle. If the water is riding inside the vehicle, seek refuge on the roof.

- Do not drive around road barriers. Roads and bridges may be washed out or structurally unsound.

- If flood conditions obstruct the routes to available public parking, drive towards higher ground and find a safe location to stop.

- Stay away from downed utility wires. Always assume a downed power line is live. Electrocution is also a serious danger in floods as electrical currents can travel through water.

In the event of a flooding emergency, residents and management are encouraged to call 911 to receive assistance from Town of Wilton Emergency Services. For building related issues during a flood emergency, residents are encouraged to call building management or maintenance.

III. LIMITATIONS:

There are limitations to any flood warning system. These shall be understood by those operating the system and people relying on them. Some of those limitations are described below:

- Rain and thunderstorms can produce intermittent and localized rainfalls with varying intensities. Therefore, it is often difficult to predict the time and height of flood crests. There is the possibility that more than one flood crest will occur during a flood event.

- Flood flow quantities and flood flow paths are unpredictable. Bridges or other natural stream constrictions may become blocked with debris and divert flows. New channels and directions of flow may develop, especially at stream meanders.

- An important limitation to consider is flood preparedness planning and enactment depends on adequate forewarning and notice and the actions of individuals. Forewarning may not be available or provided in every case.

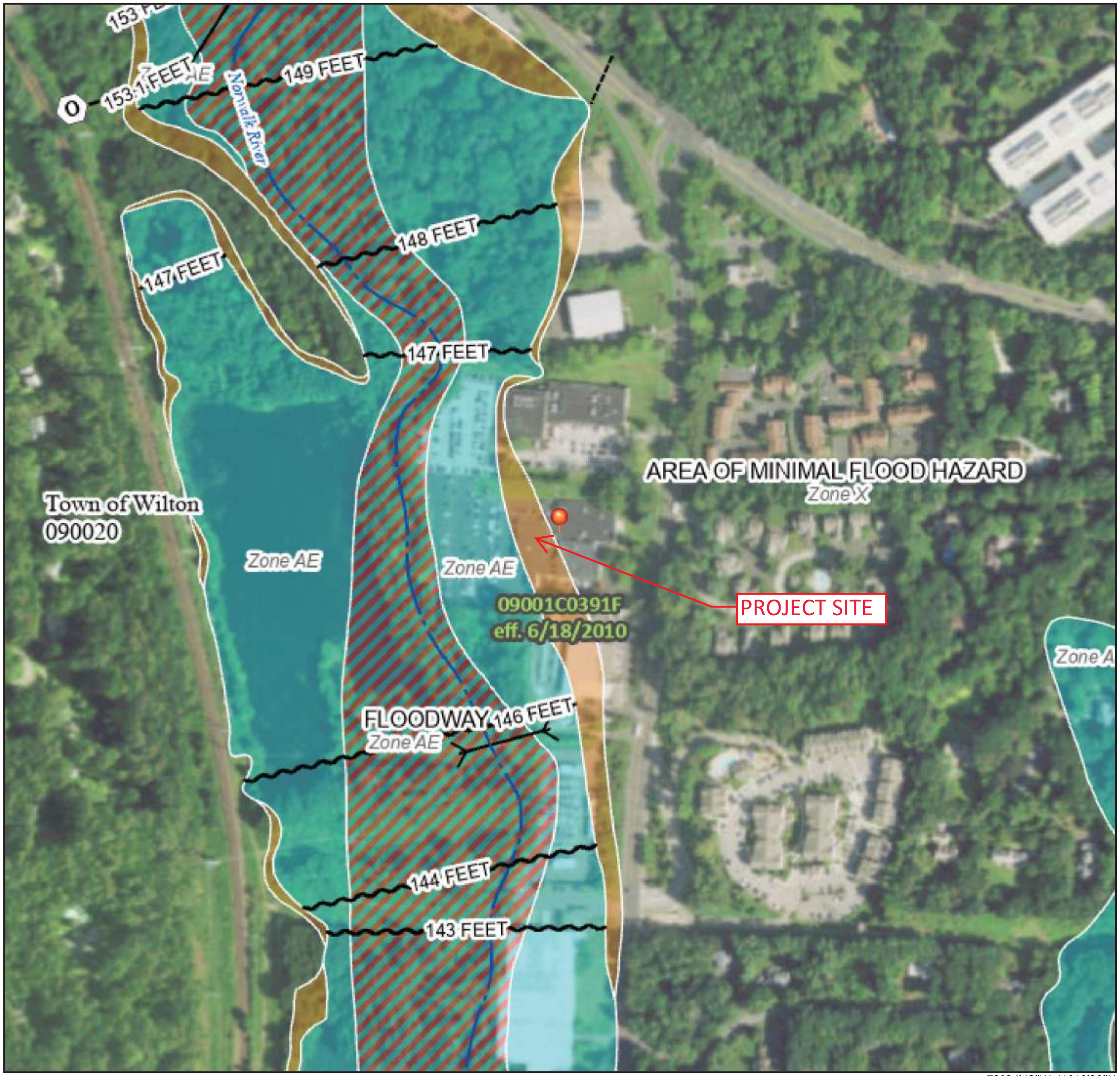
- Proper education of owners, management personnel, and residents along with proper planning, can reduce the potential for flood damage and unsafe actions.

- Vehicle evacuation procedures carried out for a storm for which there is no significant flooding to warrant the evacuation may result in lax attentiveness during subsequent flood warnings. Continued education can mitigate this response.

National Flood Hazard Layer FIRMette - FIG. 1

FEMA

73°25'21"W 41°10'57"N



73°24'43"W 41°10'30"N

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

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	B 20.2 / 17.5	Cross Sections with 1% Annual Chance Water Surface Elevation
	8	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

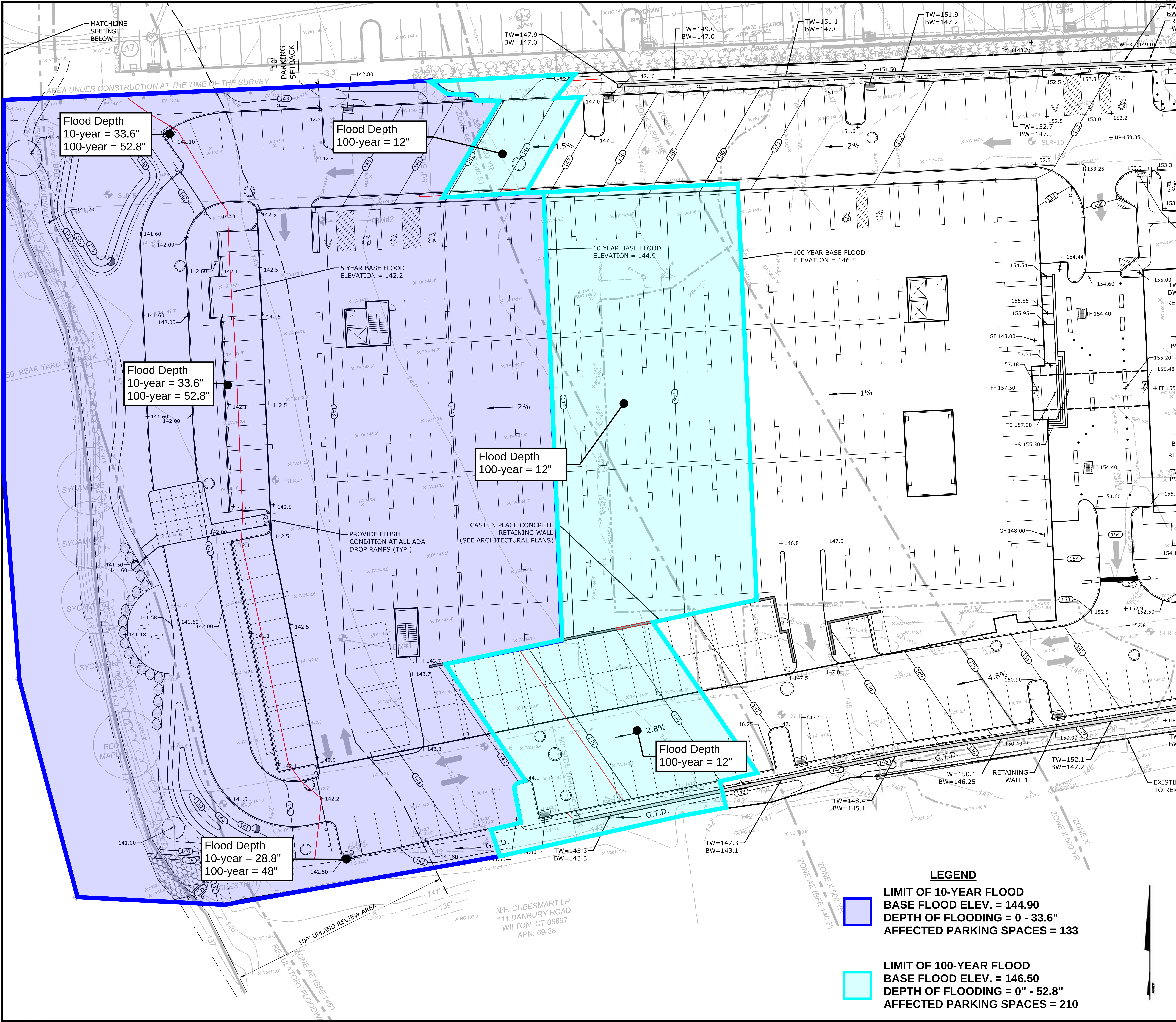
N

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 11/14/2023 at 11:10 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.



FLOOD INUNDATION EXHIBIT
131 DANBURY ROAD

AMS CONSTRUCTION MANAGEMENT LLC

Preliminary Construction Management Plan
131 Danbury Road, Wilton, CT

DRAFT DATE: March 20, 2024

Construction Narrative

1. INTRODUCTION

a. STATEMENT OF PURPOSE
This Construction Narrative has been prepared for review and comment by the Town of Wilton. The construction management plan has been arranged to avoid, minimize, or mitigate adverse impacts from construction activities.

b. PROJECT DESCRIPTION
The proposal includes the removal of the existing office building and construction of a new 4 ½ -story residential building. Covered parking is proposed under the elevated building with additional surface parking to the north and south. New amenity areas are located in the building's central courtyard and along the Norwalk River. The landscaped amenity area around the river consists of walks, seating areas, and a patio.

c. PROJECT PHASING
See Phase descriptions below. The anticipated construction duration is approximately 30 months from the start of demolition.

d. CONSTRUCTION LOGISTICS

- Site fencing and gates
- Designated storage and staging areas
- Anti-tracking pads for soils control.
- Construction entrances and exits.
- Building footprints.
- Truck Logistics
- The project will consist of roughly seven (7) stages of activity as follows.

Phase 1: Site Setup, Mobilization, Perimeter fence (6+/- weeks)
During this stage, the project perimeter is established. Sedimentation and Erosion Controls (e.g. sediment traps, straw wattles, silt fence, stone check dams, etc.) are installed per Sheets SE-1 and SE-2 of the Civil Set. The 6' tall post drive chain link fence is installed, and temporary offices delivered to the site. Temporary parking and traffic arrangements are set for the site. Upon completion of the site setup, demolition of the existing building will commence. Site disturbance during this phase shall be limited to the building demolition and surrounding area and utility disconnects and abandonments (1.5 – 2.0 acres). The area of existing pavement within 50 feet of the river should be marked to remain to the extent practical (e.g. sediment traps) to keep the buffer stabilized.

Phase 2: Rough Earthwork and Begin Site Utilities (12+/- weeks)
During this stage additional erosion control and stormwater management measures will be put in place and earthwork (e.g. cut/fill, rough grading, etc) will commence. Site utilities such as sanitary sewer infrastructure, storm water management systems, and water service connections (Aquarion) will begin. The stormwater outfall into the Norwalk River shall be constructed during low flow conditions in the river (when the stream gauge depth in the Norwalk River at South Wilton is less than 1.5 feet) and rainfall is not in the forecast for that week. To establish rough grades for the site and to begin the installation of the stormwater management system, much of the site will be disturbed (4.0+/- acres). The area of existing pavement within 50 feet of the river shall remain to the extent practical

(e.g. storm outfall) during this phase to keep the buffer stabilized.

<u>**Phase 3:** Foundations and Site Utilities (12+/- weeks)</u>
Once the building pad rough grade is established, stabilized, and approved by third party soils inspector, concrete foundations and site retaining wall construction will begin. Site utilities will also continue during this phase along with water services and underground electrical and communications conduit to building main service rooms (Eversource: 888-544-4826; Altice/Frontier). The transformer and generator will be installed.

<u>**Phase 4:** Building Superstructure and Site Stabilization (3+/- months)</u>
Cast in place concrete podium structure will commence. Provided all necessary underground utilities are in place, site curbing and base asphalt paving will be installed. Minor rough grading and disturbance will be necessary in the affected areas left intact during Phase 2. Once the asphalt binder course is installed north and south of the building the area of disturbance will be reduced (3.5+/- acres).

<u>**Phase 5:** Building Framing and MEP Rough-In (8+/- months)</u>
Cast In Place Concrete will begin from the rear of the site garage level and continue to the slab on grade section towards Danbury Road. As soon as a large enough section of slab is ready, wood framing will commence. Exterior façade work, windows and doors will be installed once the first section roof is completed and sheathed. Electrical, plumbing, and mechanical rough ins will follow the weathertight enclosure of each section. Once the podium is installed, the area of disturbance will be reduced (2+/- acres).

<u>**Phase 6:** Interior Finishes (8+/- months)</u>
Overlapping partially with Phase 5, the completion of the MEP rough-ins on an area-by-area and floor-by-floor basis. Installation of insulation, drywall, and other materials and equipment will follow the MEP roughs. Painting, interior finishes, cabinetry, and installation of electrical and plumbing fixtures and appliances will complete the interior construction.

<u>**Phase 7:** Site Work, Landscaping and Occupancy (4+/- months)</u>
Simultaneous with the completion of the building interior, site work including landscaping, paving, and site lighting will be completed. The completion of landscaping is weather dependent and will be installed during an appropriate planting season. Additionally, completion of the podium courtyard amenities and the surrounding landscape will take place during this phase of the project. The rough grading and disturbance of the remaining undisturbed area west of the building will occur in this stage. The construction of the project will conclude with building commissioning and occupancy.

2. PARKING

a. All workers will park on site within the construction fencing. Parking along Danbury Road is prohibited.

3. HOURS OF CONSTRUCTION ACTIVITIES

a. Construction activities and deliveries will be conducted in compliance with the Town of Wilton.

b. It is expected that the typical work week will be from 7:00 AM to 7:00 PM Monday through Friday, and Saturdays from 8:00 AM to 6:00 PM.

c. Workers will be arriving and departing shortly before and after construction starts and construction end times.

4. MATERIAL STORAGE & REMOVAL

a. Materials will be in designated staging areas on-site as shown in the attached Construction Logistics Plan. (See Appendix 1 attached)

b. Material storage and laydown areas shall be located away from public rights-of-way.

c. Protective netting or other barriers shall be employed where necessary to prevent off-site migration of materials.

d. The location of truck loading for removal of materials will vary depending on the stage of construction, material being removed and current construction activity. Specific instructions will be communicated to drivers at the time of removal.

5. ACCESS TO CONSTRUCTION SITE

a. Delivery and driving directions will be distributed to all contractors and delivery trucks accessing the site.

b. Every effort will be made to ensure public access to all surrounding streets and properties. The property frontage along Danbury Road will be maintained during construction.

c. Police may be required on a short-term basis during any required street closures of Danbury Road. Street closures would occur during utility street work and/or certain road work operations, if any. Traffic would be rerouted with detour signs, placed in consultation with the Town and Police Department.

6. MEASURES TO ENSURE THE SAFETY OF PEDESTRIANS

a. Sidewalk closings and pedestrian diversions will be used throughout all stages of construction. In the event sidewalk closings are required, the plan would be reviewed and approved by the Town of Wilton prior to implementation and all applicable permits will be filed.

b. For public safety, the entire perimeter of the project sites will be fenced and posted as closed to the public. Signage will be posted at 100-foot intervals on the construction fencing and posted on the construction gates.

7. PRE-CONSTRUCTION SURVEYS

a. If necessary, prior to any ground disturbance, pre-construction surveys would be performed when sensitive receptors are in proximity to the construction site. Pre-construction surveys would be conducted for adjacent structures or utilities within close proximity to the property.

8. SOIL EROSION AND SEDIMENTATION CONTROLS

a. During the Demolition of the existing building, dust mitigation measures will be put in place.

b. An approved Soil Erosion and Sediment Control Plan for the project site would be implemented at the outset of construction. Erosion, sediment control and dust mitigation measures include the following:
   - Minimizing the area of soil that is disturbed at any one time;
   - Minimizing the amount of time during which soils are exposed;
     Spraying water on dusty surfaces;
   - Stabilizing soils with temporary grass seed mixtures, seeding or using erosion control blankets to stabilize soil stockpiles;
   - Using drainage diversion methods (silt fences, hay bales) to minimize soil erosion during site grading;
   - Covering stored materials with a tarp to reduce windborne dust;
   - Limiting on-site construction vehicle speed to 5 mph; and,
   - Using truck covers/tarp rollers that cover fully loaded trucks and keep debris and dust from being expelled from the truck along its haul route.
   - Prepare the site in advance of forecasted significant rainfall events. Refer to the Flood Preparedness Plan for additional information.

9. STORMWATER MANAGEMENT

a. Stormwater pollution prevention measures include the use of silt fence, hay bales, interceptor swales, stabilized construction entrance, temporary seeding, mulching, inlet protection (silt sacks), erosion control matting, sediment traps, stone check dams, and concrete washout stations.

b. Periodic inspections and maintenance will be implemented to properly manage sediment transport and erosion control during the construction. The Construction Manager will also conduct inspections and maintain a log of the control devices during and/or immediately after any adverse weather events, and any necessary repairs or replacement of the erosion and sediment control practices will be addressed following each storm event. Inspection logs will be available at the site.

10. CONSTRUCTION PHASE EMERGENCY OPERATION (FLOOD CONTINGENCY) PLAN

a. The Contractor shall monitor the weather forecasts and plan construction accordingly.

b. The Contractor shall provide two 24hr contacts to the Owner, Town and Engineer.

c. If the weather forecasts should indicate the possibility of a major storm system within 24 to 48 hours, the Contractor shall plan for the possibility of high water levels at the site and the removal of construction equipment and construction materials. Also, the Contractor shall notify the Town and Owner.

d. If a significant rainfall in excess of two inches within a 24 hour period occurs or is predicted to occur by the National Weather Service, the Contractor shall maintain surveillance of the site and be prepared to provide emergency corrective stabilization measures, if necessary, until water levels recede and the construction site is stabilized.

e. If the water level within the channel rises to a potentially unsafe level, the Contractor shall remove all equipment, construction materials and stockpiles from the floodplain, and alert the Owner of a potential emergency. Additionally, the Contractor shall inspect the sediment traps and perimeter controls and any accumulated sediment that be removed.

f. The Contractor shall maintain sufficient equipment and manpower at the site in order to react to a flooding emergency.

g. The Contractor shall submit a detailed Emergency Operations and Flood Contingency Plan before any Work commences. Said plan shall include a detailed narrative describing the various types of emergencies and corresponding actions to be taken in response. Identified on the plans shall be the location where all construction equipment and other supplies will be stored. The Contractor shall certify that personnel are familiar with all provisions of his plan and are able to execute same. The Contractor may use the above plan or prepare a plan of his own. In either case, the Contractor shall submit to the Town an Emergency Operation Plan for approval seven (7) days prior to any work commencing on site.

11. CONTROLS ON OFF-SITE TRACKING OF MUD

a. Soil management is the most important step in preventing mud tracking onto public streets. All construction roads that disturb earth will be capped with stone, process or pavement, to minimize mud pick-up by truck or vehicle tires. Soil stabilization will be implemented. Anti- tracking pads will be installed and maintained at all construction exits to dislodge any mud from the truck tires before they exit the site.

b. Street sweeping of the paved access drives and public road frontage on either side of all construction entrance/exits will be performed as needed for the duration of the project, and more frequently if material is tracked off site.

c. Street sweeping will be accomplished with vehicle mounted sweeping equipment, such as a box broom sweeper attachment on a skid steer, or mechanical sweeper as manufactured by Bob Cat, or others.

12. NOISE MITIGATION

a. All construction activities will be conducted in full compliance with existing regulations, including the municipal time restrictions for construction work.

b. Property owners within 200 feet of the Property will receive prior notice of any extraordinary noise (e.g. rock hammering, chipping) that might occur for more than one day.

c. Back-up alarms will be provided for all on-site vehicles.

13. SITE SECURITY

a. A 6-foot-high construction fence will be installed as shown on the attached plan. The gates will be locked, except during designated working hours.

b. Signage will be posted on the gates requiring all visitors to report to Contractor's Construction Manager's trailer before proceeding onto the site.

c. For public safety, the entire perimeter of the project site will be posted as closed to the public. Signage will be posted at 100-foot intervals on the construction fencing and posted on the construction gates.

d. Stealth Monitoring Security Company will be engaged to setup and remotely monitor perimeter cameras during non-working hours.

14. MANAGEMENT OF WASTE

a. Waste and recycling containers will be positioned throughout the site.

b. Concrete washout stations will be used to contain concrete and liquids when the chutes of mixers and hoppers of concrete pumps are rinsed out after deliveries.

c. Any abatement related to the removal of hazardous materials from the building shall follow State and Federal regulations and be performed by licensed contractors and overseen by licensed professionals as may be required.

d. Material generated from the demolition of the building and its foundations will be removed from the site and disposed of legally. Trucks shall be covered.

e. Dust control mitigation may be required during building demolition (material wetting and spray down).

f. Existing fuel or waste oil tanks (including the aboveground storage tank south of the building) shall be pumped out and the contents brought to an approved disposal area by a licensed waste hauler, prior to removal of the tank.

15. COORDINATION WITH POLICE, FIRE, AND EMERGENCY MEDICAL SERVICES DEPARTMENTS

a. During Site Plan review, this plan and associated drawings will be coordinated with the Wilton emergency services.

b. A task plan for deliveries and closures will be forwarded to the Wilton Building Department and other Town departments as directed based on a final site plan approval with an approved construction management plan and more definitive construction schedule with updates provided as they become available during the construction process.

c. Upon obtaining permits for any required street closures, we are given a set of requirements for the closure which may include a Police Officer to be present during the working hours of the closure. An account would be set up for payment of the Police which are scheduled several days in advance of the closure. Flag men and barricades may also be required during a closure.

16. COMMUNICATIONS

a. Phone numbers for responsible ownership and contractor contacts will be provided to the Town prior to construction start and site mobilization.

b. The AMS team shall meet with the appropriately designated Town staff along with any professionals retained by the Town to assist in the monitoring of construction activities, to review ensure that all responsible parties understand their responsibilities for each specific construction phase. This will include, but not be limited to, the Director of Environmental Affairs.

17. ENFORCEMENT

a. The measures contained within this Construction Management Plan will be enforced through inspections and monitoring to be conducted by the third-party inspectors and the Town of


Approximate location of 6' high construction fence. Fence to be located 50' from Norwalk River.
Elev. +/- 146.50
Construction Gate #2
Proposed Material Staging & Contractor Parking (25'x425')
Temporary Stockpile (30' Diameter)
Stage 2 Construction Equipment Storage
Existing Building to be Removed
Temporary Stockpile (50'x120')
Construction Gate #1
To the extent feasible, existing asphalt pavement within 50 feet of the Norwalk River will be maintained to provide a stable construction surface until such time final surfaces can be installed.
Proposed Material Staging & Contractor Parking (25'x275')
Elev. +/- 146.50
Approximate location of 6' high construction fence. Fence to be located 25' from Norwalk River.
Floodplain storage limited to durable, non floatable materials (e.g. block, steel, stone, etc.)
Store sensitive materials outside floodplain (>146.50)
Temporary Sanitary Facilities
Construction Office Trailer
NORWALK RIVER
DANBURY ROAD AKA US ROUTE 7
PARCEL A-1 PER MAP NO. 3609 N/F: FGI WILTON LLC 131 DANBURY ROAD WILTON, CT 06897 TOTAL AREA: 206,985 SQ. FEET± 4.752 ACRES± APN: 70-1
2-STORY MASONRY BUILDING 41,481 SQ. FEET± HEIGHT: 26.5'±
N/F: CUBESMART LP 111 DANBURY ROAD WILTON, CT 06897 APN: 69-38
N/F: RING'S END INCORPORATED 129 DANBURY ROAD WILTON, CT 06897 APN: 69-41

Engineering Report - Floodplain Analysis

131 Danbury Road, Wilton, Connecticut

Proposed Multi-Family Development

Prepared by:

SLR International Corporation

1 South Main Street, Waterbury, Vermont, 05676

SLR Project No.: 141.21543.00001

Client Reference No: 0001

Revised: February 13, 2024

November 27, 2023

1.0 Floodplain Management Background

The project site (131 Danbury Rd, Wilton, CT) is located along the Norwalk River. A Flood Insurance Study (FIS) was originally completed for the Norwalk River (Town of Wilton) in 1982. The FIS was updated to a county-wide study for Fairfield County and is currently dated October 16, 2013, although the floodplain mapping continues to be based on the original hydraulic analysis that has not been restudied or updated.

2.0 Modeling

Copies of the input and output for the effective hydraulic model for the Norwalk River were obtained from the FEMA Engineering Library. The effective model was originally developed using HEC-2, the predecessor of the current modeling software known as HEC-RAS. The effective model obtained from FEMA was transferred into HEC-RAS to create a duplicate of the effective model for the floodplain analysis of the project. It should be noted that the vertical datum used in the effective model is the National Geodetic Vertical Datum of 1929 (NGVD29), therefore the data was converted to the North American Vertical Datum of 1988 (NAVD88) in the duplicate model. The conversion factor of 1.0 foot, as published in the FIS, was used to convert between the NGVD29 to NAVD88 datum. The effective HEC-2 modeling used NGVD29 to calculate flood profiles, however the water surface elevations from the effective model have been converted to NAVD88 in the most-recent FIS.

2.1 Duplicate Effective Model

The duplicate effective model was created to replicate the results published in the FIS. A portion of the original model that was obtained from the FEMA Engineering Library was used to create the duplicate effective model in HEC-RAS that included cross sections 15 through 30 (FEMA Lettered Sections N through O). The project site at 131 Danbury Rd falls between FEMA sections N and O, and more specifically between cross sections 27 and 28 from the effective HEC-2 model. The elevation data used to create the duplicate effective model were converted to the NAVD88 datum. The 100-year water surface elevation computed by the duplicate effective model was compared to the effective HEC-2 output and the data provided in the FIS Floodway Table (Table 2-1).

Table 2-1 Duplicate Effective Model Output (100-Year)

FIS CROSS SECTION IDENTIFIER	CALIBRATED MODEL CROSS SECTION NUMBER	WATER SURFACE ELEVATION (NAVD88)		
		HEC-2 Model Results	FIS Profile Data ^	Duplicate Effective
N	17	141.76	141.2	141.20
	18	141.18		141.22
	19	141.73		141.65
	20	142.06		141.98
	21	142.08		142.01
	22	142.22		141.89
	23	142.61		142.51
	24	142.76		142.56
	25	144.13		144.63
	26	144.93		145.21
	27	146.77	146.1	146.61
	28	146.56	146.7	146.84
	29	151.83		151.38
O	30	153.11	153.1	153.17
^ Flood elevation not at FEMA lettered cross sections where obtained from the profile panels in the FIS				

The peak discharge rates used for this analysis were obtained from Volume 1 of the FIS and match those used in the effective model. The flow rates are as follows:

Table 2-2 FIS Flow Rates at Site - Norwalk River at Kent Road

RETURN FREQUENCY (YEARS)	ANNUAL CHANCE PROBABILITY	FLOW RATE (CFS)
10	10%	2,980
50	2%	5,840
100	1%	7,455
500	0.2%	12,505

2.2 Corrected Model

After developing the duplicate effective model, a corrected effective model was developed to correct any erroneous errors in the duplicate effective model and calibrate the results to match the FEMA data published in the FIS. For the corrected effective model, the following corrections were made:

1. Bridge bottom chord elevations were edited to achieve accurate no flow areas.
2. Effective flow zones were edited to better replicate site limitations due to buildings and bridges.

Table 2-2 Summary of HEC-RAS Model Output
Duplicate Effective vs. Corrected Effective (100-Year)

FIS CROSS SECTION IDENTIFIER	CALIBRATED MODEL CROSS SECTION NUMBER	WATER SURFACE ELEVATION (NAVD88)		
		Duplicate Effective	FIS Profile Data ^	Corrected Effective
N	17	141.20	141.2	141.20
	18	141.22		141.22
	19	141.65		141.65
	20	141.98		141.98
	21	142.01		141.92
	22	141.89		141.99
	23	142.51		142.68
	24	142.56		142.64
	25	144.63		144.58
	26	145.21		145.21
	27	146.61	146.1	146.08
	28	146.84	146.7	146.67
	29	151.38		151.12
O	30	153.17	153.1	153.13
^ Flood elevation not at FEMA lettered cross sections where obtained from the profile panels in the FIS				

2.3 Existing Conditions Model

To evaluate the impact of the proposed redevelopment, three cross sections were added to the corrected effective model through the 131 Danbury Rd property, identified as river stations 27.75, 27.5 and 27.25 in the model. These cross sections were added because no effective model cross sections existed at the project site. Topography for the new cross section inserted into the existing conditions model was developed using the best-available LiDAR contour date as well as existing site survey data. Wet channel geometry (i.e. – below the water surface) was interpolated from the data at the bounding upstream and downstream cross sections.

2.4 Proposed Conditions Model

The cross sections that pass through the project site were updated to reflect the proposed changes at 131 Danbury Rd. Modifications made to create the proposed conditions model included proposed grading changes, removal of existing building, and addition of obstructions reflecting the ground floor parking area pillars, elevator shaft, and trash receptacle area. The proposed model reflects a conservative condition, projecting all obstructions in close proximity to the cross section. The first floor of the proposed building was not included in the model because flood levels do not approach this elevation. The model was rerun and compared to published FEMA data and existing conditions modelling results (Table 2-3).

Table 2-3 Summary of HEC-RAS Model Output
Corrected Effective vs. Proposed Conditions (100-Year)

FIS CROSS SECTION IDENTIFIER	CALIBRATED MODEL CROSS SECTION NUMBER	WATER SURFACE ELEVATION (NAVD88)		
		Duplicate Effective	FIS Profile Data ^	Corrected Effective
N	17	141.20	141.2	141.20
	18	141.22		141.22
	19	141.65		141.65
	20	141.98		141.98
	21	142.01		141.92
	22	141.89		141.99
	23	142.51		142.68
	24	142.56		142.64
	25	144.63		144.58
	26	145.21		145.21
	27	146.61	146.1	146.08
	27.25 *	---	146.4	146.13
	27.5 *	---	146.5	146.16
	27.75 *	---	146.6	146.20
	28	146.84	146.7	146.67
	29	151.38		151.12
O	30	153.17	153.1	153.13
* Denotes cross section that passes through the project site at 131 Danbury Rd				
^ Flood elevation not at FEMA lettered cross sections where obtained from the profile panels in the FIS				

2.5 2-Year Flood Analysis

An analysis of the 2-Year flood in the Norwalk River has been conducted to facilitate the design of stormwater management practices on the project site. The FEMA FIS does not include data or information related to a 2-Year storm, therefore, a hydrologic analysis was completed. The 2-Year flow rate was estimated by analyzing annual peak flow data collected at the Norwalk River at South Wilton gauge (USGS Gauge 01209700). This gauge has a 67 year record and is located just downstream of Kent Road, which coincides with a flow change location that was used in the FEMA effective model and is the basis of this floodplain analysis. The HEC-SSP application published by the US Army Corps of Engineers was used to conduct the gage analysis (Appendix C). The analysis was conducted using the Bulletin 17B/C capabilities built into the HEC-SSP application.

A 2-Year peak discharge rate of 1,030 cfs was entered into the hydraulic model and used to estimate flood elevations in the Norwalk River (Table 2-3). The resulting water surface elevations for the 2-Year flood at the project site were used in the design of the proposed stormwater management system.

Table 2-4 Summary of HEC-RAS Model Output
2-Year Flood in the Norwalk River at the Project Site

MODEL CROSS SECTION NUMBER	PROPOSED CONDITIONS WATER SURFACE ELEVATION (NAVD88)
27.25 *	140.07
27.5 *	140.10
27.75 *	140.13
* Denotes cross section that passes through the project site at 131 Danbury Rd	

3.0 Results

Results of water surface elevation for the 100-Year and 10-Year storms were compared between existing and proposed conditions. These results are summarized in Tables 3-1 and 3-2:

Table 3-1 Comparison of Existing vs. Proposed Conditions (100-Year Storm)

FIS CROSS SECTION IDENTIFIER	MODEL CROSS SECTION NUMBER	WATER SURFACE ELEVATION (NAVD88)		
		Existing Conditions	Proposed Conditions	Difference
N	17	141.20	141.20	0.00
	18	141.22	141.22	0.00
	19	141.65	141.65	0.00
	20	141.98	141.98	0.00
	21	141.92	141.92	0.00
	22	141.99	141.99	0.00
	23	142.68	142.68	0.00
	24	142.64	142.64	0.00
	25	144.58	144.58	0.00
	26	145.21	145.21	0.00
	27	146.08	146.08	0.00
	27.25 *	146.13	146.13	0.00
	27.5 *	146.16	146.16	0.00
	27.75 *	146.20	146.20	0.00
	28	146.67	146.67	0.00
	29	151.12	151.12	0.00
O	30	153.13	153.13	0.00
* Denotes cross section that passes through the project site at 131 Danbury Rd				

Table 3-2 Comparison of Existing vs. Proposed Conditions (10-Year Storm)

FIS CROSS SECTION IDENTIFIER	MODEL CROSS SECTION NUMBER	WATER SURFACE ELEVATION (NAVD88)		
		Existing Conditions	Proposed Conditions	Difference
N	17	135.20	135.20	0.00
	18	135.24	135.24	0.00
	19	136.15	136.15	0.00
	20	137.17	137.17	0.00
	21	137.20	137.20	0.00
	22	139.89	139.89	0.00
	23	140.39	140.39	0.00
	24	140.32	140.32	0.00
	25	140.65	140.65	0.00
	26	142.70	142.70	0.00
	27	144.02	144.02	0.00
	27.25 *	144.05	144.05	0.00
	27.5 *	144.07	144.07	0.00
	27.75 *	144.08	144.08	0.00
	28	143.06	143.06	0.00
	29	147.77	147.77	0.00
O	30	151.53	151.53	0.00
* Denotes cross section that passes through the project site at 131 Danbury Rd				

As shown in Tables 3-1 and 3-2, there are no increases in flood elevation for the 100-year storm or the 10-year storm when comparing between the existing and proposed conditions.

4.0 Compliance with Local Floodplain Regulations

Section 29-9.F.7 of the Wilton Zoning Regulations requires the following:

k. Equal Conveyance: Within the floodplain, except those areas which are tidally influenced, as designated on the Flood Insurance Rate Map (FIRM) for the community, encroachments resulting from filling, new construction or substantial improvements involving an increase in footprint of the structure, are prohibited unless the applicant provides certification by a registered professional engineer demonstrating, with supporting hydrologic and hydraulic analyses performed in accordance with standard engineering practice, that such encroachments shall not result in any (0.00 feet) increase in flood levels (base flood elevation). Work within the floodplain and the land adjacent to the floodplain, including work to provide compensatory storage shall not be constructed in such a way so as to cause an increase in flood stage or flood velocity.

I. Compensatory Storage: The water holding capacity of the floodplain, except those areas which are tidally influenced, shall not be reduced. Any reduction caused by filling, new construction or substantial improvements involving an increase in footprint to the structure, shall be compensated for by deepening and/or widening of the floodplain, storage shall be provided on-site, unless easements have been gained from adjacent property owners; it shall be provided within the same hydraulic reach and a volume not previously used for flood storage; it shall be hydraulically comparable and incrementally equal to the theoretical volume of flood water at each elevation, up to and including the 100-year flood elevation, which would be displaced by the proposed project. Such compensatory volume shall have an unrestricted hydraulic connection to the same waterway or water body. Compensatory storage can be provided off-site if approved by the municipality.

4.1 Equal Conveyance

There are no increases in the base flood elevation between the Existing and Proposed conditions (Tables 3-1 and 3-2), therefore the Equal Conveyance requirement has been met. In addition, the modeling results indicate that the proposed conditions Base Flood Elevation (BFE) will not exceed the effective BFE as published in the current FIS.

4.2 Compensatory Storage

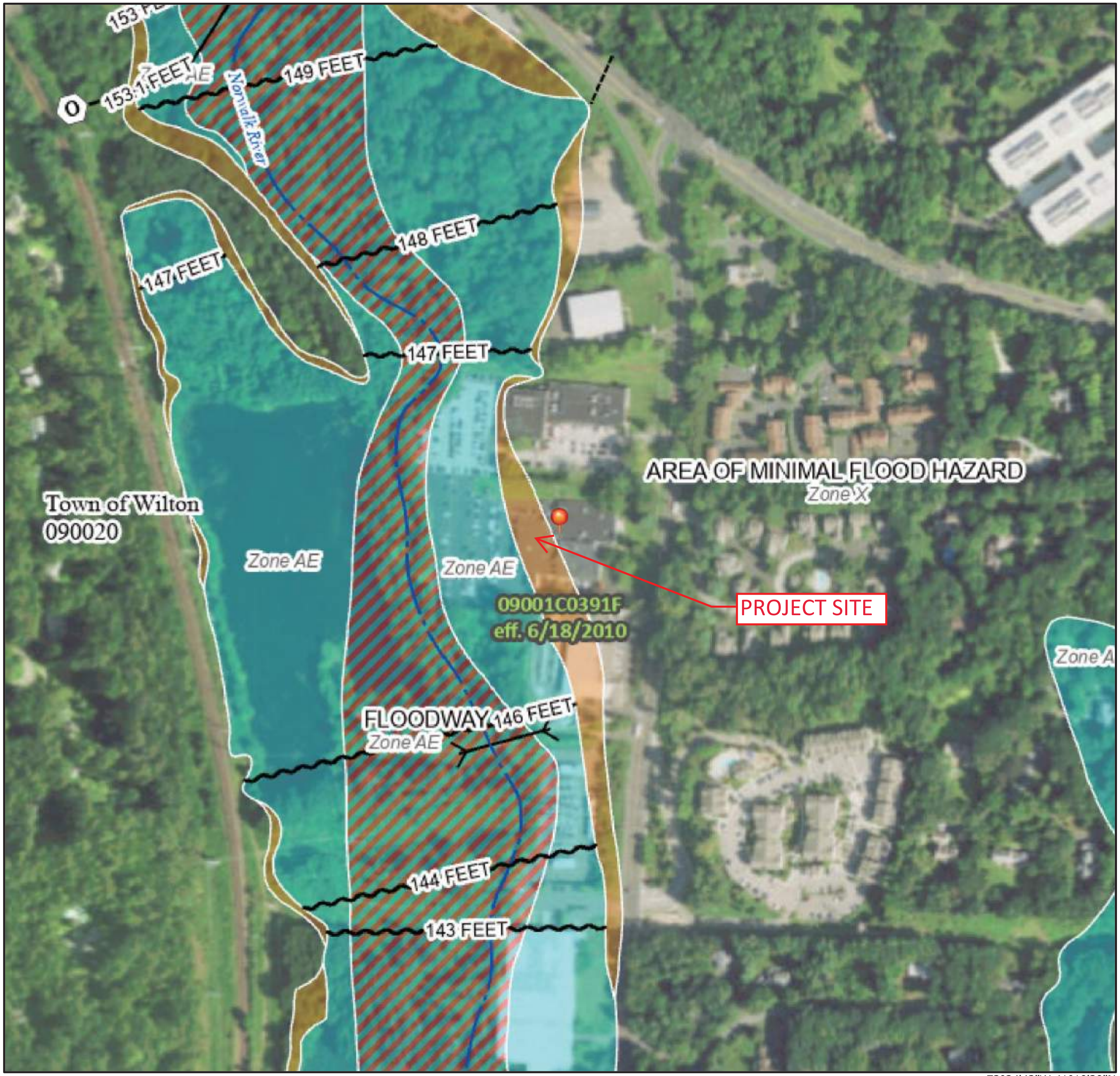
Revised grading has been proposed as part of the redevelopment of 131 Danbury Rd. This proposed earthwork results in a net cut of approximately 41 CY. Removal of the existing building and replacement with a ground level parking garage and raised building also results in a net increase of floodplain storage. Therefore, the proposed condition would not decrease floodplain storage.

Appendix A Figures

National Flood Hazard Layer FIRMette - FIG. 1

FEMA

73°25'21"W 41°10'57"N



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

1:6,000

73°24'43"W 41°10'30"N

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
- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 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

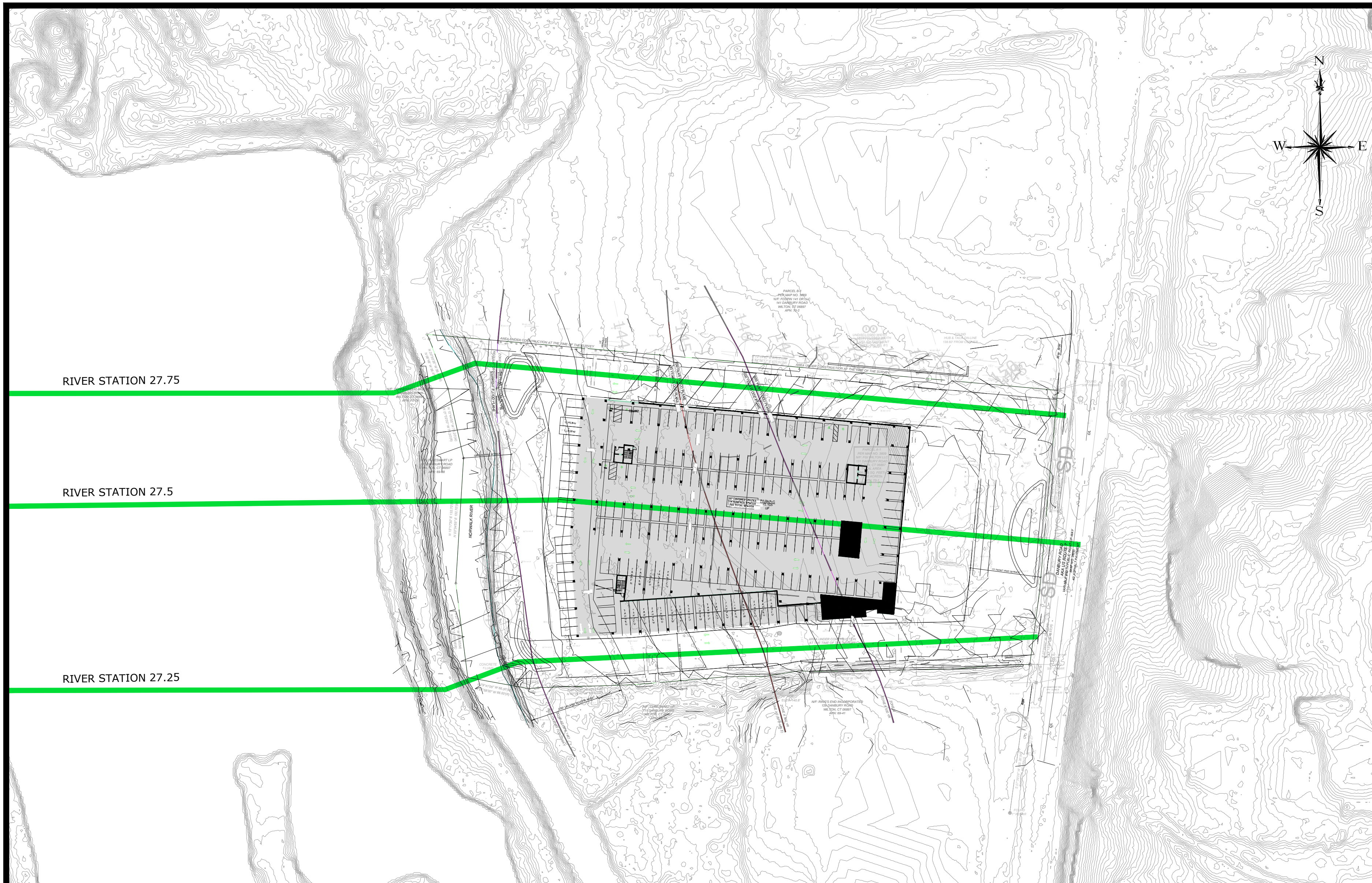
N

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 11/14/2023 at 11:10 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.



Drawing: W:\CADDESIGN\21543.00001-DE\CAD\EMR\FEMA_EXISTING.DWG Layout Tab:8.5X11H

Plotted by: ETHOMPSON On this date: Fri, 2024 February 9 – 5:03pm

SLR

1 SOUTH MAIN STREET
WATERBURY, VT 05676
802.882.8335
SLRCONSULTING.COM

DATE	FEB. 13, 2024
SCALE	1"=20'
PROJ. NO.	21543.00001
DESIGNED	---
DRAWN	EMR
CHECKED	---

FLOODPLAIN CROSS SECTION MAP

PROPOSED MULTI-FAMILY DEVELOPMENT

131 DANBURY RD
WILTON, CT

REVISED: ---

0' 30' 60'
0 1/2" 1"

SCALE 1" = 60'H
1" = 6'V

FIG. 2

Appendix B HEC-RAS Results

Existing Conditions HEC-RAS Output Table
February 13, 2024

HEC-RAS Plan: Ex_3XS_NAVD88_bmc River: RIVER-1 Reach: Reach-1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	30	500-Year	12505.00	146.00	154.04	154.04	155.42	0.005597	14.04	2433.81	740.83	0.91
Reach-1	30	100-Year	7455.00	146.00	153.13	153.13	154.18	0.004389	11.40	1780.34	701.03	0.79
Reach-1	30	50-Year	5840.00	146.00	152.71	152.71	153.69	0.004131	10.57	1486.72	680.56	0.76
Reach-1	30	10-Year	2980.00	146.00	151.53	151.53	152.40	0.003798	8.77	754.72	495.37	0.70
Reach-1	29	500-Year	12505.00	141.20	153.06		154.42	0.001769	9.98	1759.83	251.68	0.54
Reach-1	29	100-Year	7455.00	141.20	151.12		151.93	0.001323	7.55	1303.44	221.28	0.45
Reach-1	29	50-Year	5840.00	141.20	150.26		150.91	0.001197	6.69	1116.92	211.30	0.42
Reach-1	29	10-Year	2980.00	141.20	147.77		148.20	0.001274	5.34	626.30	182.44	0.41
Reach-1	28	500-Year	12505.00	137.00	148.47	148.47	150.50	0.003341	13.95	1808.06	520.00	0.75
Reach-1	28	100-Year	7455.00	137.00	146.67	146.67	148.58	0.003318	12.31	1034.65	358.22	0.72
Reach-1	28	50-Year	5840.00	137.00	145.64	145.64	147.61	0.003697	11.97	722.41	259.18	0.75
Reach-1	28	10-Year	2980.00	137.00	143.06		144.59	0.004371	10.03	318.50	69.28	0.76
Reach-1	27.75	500-Year	12505.00	136.60	147.36		147.45	0.000375	4.04	6726.12	1105.85	0.24
Reach-1	27.75	100-Year	7455.00	136.60	146.20		146.24	0.000199	2.68	5590.23	881.34	0.17
Reach-1	27.75	50-Year	5840.00	136.60	145.75		145.78	0.000147	2.21	5201.60	837.01	0.14
Reach-1	27.75	10-Year	2980.00	136.60	144.08		144.09	0.000085	1.41	3914.49	709.58	0.11
Reach-1	27.5	500-Year	12505.00	136.20	147.30		147.40	0.000368	4.25	6398.68	819.29	0.24
Reach-1	27.5	100-Year	7455.00	136.20	146.16		146.21	0.000208	2.94	5472.13	814.88	0.18
Reach-1	27.5	50-Year	5840.00	136.20	145.72		145.76	0.000148	2.40	5116.34	794.60	0.15
Reach-1	27.5	10-Year	2980.00	136.20	144.07		144.08	0.000084	1.55	3856.73	710.17	0.11
Reach-1	27.25	500-Year	12505.00	135.65	147.24		147.33	0.000351	4.17	7084.03	1081.66	0.23
Reach-1	27.25	100-Year	7455.00	135.65	146.13		146.17	0.000200	2.91	5917.52	1011.52	0.17
Reach-1	27.25	50-Year	5840.00	135.65	145.70		145.73	0.000150	2.43	5485.88	968.92	0.15
Reach-1	27.25	10-Year	2980.00	135.65	144.05		144.07	0.000084	1.57	4040.00	797.72	0.11
Reach-1	27	500-Year	12505.00	134.90	147.17		147.24	0.000241	3.98	6956.87	1007.75	0.20
Reach-1	27	100-Year	7455.00	134.90	146.08		146.12	0.000146	2.90	5868.39	995.88	0.16
Reach-1	27	50-Year	5840.00	134.90	145.66		145.69	0.000111	2.47	5448.27	983.12	0.14
Reach-1	27	10-Year	2980.00	134.90	144.02		144.04	0.000079	1.85	3881.15	934.00	0.11
Reach-1	26	500-Year	12505.00	134.50	146.13	145.78	146.96	0.002173	11.46	3121.38	928.26	0.61
Reach-1	26	100-Year	7455.00	134.50	145.21	144.85	145.90	0.001675	9.49	2275.68	898.63	0.53
Reach-1	26	50-Year	5840.00	134.50	144.60	144.49	145.42	0.001843	9.55	1736.54	879.22	0.55
Reach-1	26	10-Year	2980.00	134.50	142.70	140.77	143.72	0.002149	8.89	539.60	294.36	0.57
Reach-1	25.5		Bridge									
Reach-1	25	500-Year	12505.00	134.50	145.35	145.35	146.42	0.002665	12.08	2407.63	903.32	0.66
Reach-1	25	100-Year	7455.00	134.50	144.58	144.58	145.43	0.002049	10.06	1718.75	878.58	0.57
Reach-1	25	50-Year	5840.00	134.50	144.15	144.15	144.98	0.001946	9.50	1341.34	862.90	0.56
Reach-1	25	10-Year	2980.00	134.50	140.65	140.65	142.94	0.006634	12.70	266.21	61.93	0.95
Reach-1	24	500-Year	12505.00	133.00	145.20		145.42	0.000555	5.93	4506.77	762.97	0.31
Reach-1	24	100-Year	7455.00	133.00	142.64		142.94	0.001162	7.25	2576.82	734.64	0.43
Reach-1	24	50-Year	5840.00	133.00	141.64		142.01	0.001393	7.33	1912.98	579.69	0.46
Reach-1	24	10-Year	2980.00	133.00	140.32		140.59	0.001129	5.85	1189.32	488.47	0.40
Reach-1	23	500-Year	12505.00	132.40	145.21		145.25	0.000134	3.00	8225.54	969.64	0.15
Reach-1	23	100-Year	7455.00	132.40	142.68		142.72	0.000144	2.68	5791.68	954.28	0.15
Reach-1	23	50-Year	5840.00	132.40	141.71		141.75	0.000151	2.57	4872.42	946.90	0.15
Reach-1	23	10-Year	2980.00	132.40	140.39		140.41	0.000095	1.84	3631.39	928.40	0.12
Reach-1	22	500-Year	12505.00	129.20	144.77	141.95	145.14	0.000700	7.89	4957.11	760.00	0.36
Reach-1	22	100-Year	7455.00	129.20	141.99	140.67	142.54	0.001037	8.36	2852.56	734.29	0.42
Reach-1	22	50-Year	5840.00	129.20	140.53	140.09	141.45	0.001639	9.65	1816.31	674.18	0.52
Reach-1	22	10-Year	2980.00	129.20	139.89	135.81	140.28	0.000675	5.94	1396.36	635.60	0.33
Reach-1	21.5		Bridge									
Reach-1	21	500-Year	12505.00	130.30	144.73		144.96	0.000651	6.34	5252.01	778.00	0.32
Reach-1	21	100-Year	7455.00	130.30	141.92		142.24	0.001022	6.69	3089.37	749.74	0.38
Reach-1	21	50-Year	5840.00	130.30	140.06		140.85	0.002528	9.11	1731.52	700.48	0.58
Reach-1	21	10-Year	2980.00	130.30	137.20	137.20	139.45	0.006849	12.06	268.27	493.77	0.91
Reach-1	20	500-Year	12505.00	130.30	144.75		144.88	0.000345	4.94	6446.51	778.00	0.24
Reach-1	20	100-Year	7455.00	130.30	141.98		142.11	0.000387	4.50	4314.00	751.04	0.24
Reach-1	20	50-Year	5840.00	130.30	140.31		140.47	0.000577	4.92	3083.59	712.56	0.29
Reach-1	20	10-Year	2980.00	130.30	137.17		137.55	0.001564	6.14	1125.33	489.58	0.44
Reach-1	19	500-Year	12505.00	130.00	144.42		144.60	0.000468	6.27	5560.84	639.00	0.29
Reach-1	19	100-Year	7455.00	130.00	141.65		141.80	0.000486	5.53	3812.12	603.84	0.29

HEC-RAS Plan: Ex_3XS_NAVD88_bmc River: RIVER-1 Reach: Reach-1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	19	50-Year	5840.00	130.00	139.93		140.08	0.000544	5.25	2925.53	471.55	0.30
Reach-1	19	10-Year	2980.00	130.00	136.15		136.43	0.001551	6.37	1229.06	427.91	0.46
Reach-1	18	500-Year	12505.00	126.90	143.92		144.23	0.000469	5.92	3844.58	583.26	0.26
Reach-1	18	100-Year	7455.00	126.90	141.22		141.46	0.000403	4.87	2292.52	566.47	0.23
Reach-1	18	50-Year	5840.00	126.90	139.42		139.69	0.000467	4.77	1501.27	292.20	0.24
Reach-1	18	10-Year	2980.00	126.90	135.24		135.56	0.000887	4.92	704.29	146.31	0.31
Reach-1	17	500-Year	12505.00	126.90	143.90	137.11	144.22	0.000471	5.93	3834.43	583.14	0.26
Reach-1	17	100-Year	7455.00	126.90	141.20	134.91	141.45	0.000405	4.88	2283.83	566.26	0.23
Reach-1	17	50-Year	5840.00	126.90	139.40	134.08	139.67	0.000470	4.78	1496.05	291.59	0.24
Reach-1	17	10-Year	2980.00	126.90	135.20	131.70	135.52	0.000907	4.96	698.80	145.83	0.32

Proposed Conditions HEC-RAS Output Table
February 13, 2024

HEC-RAS Plan: Proposed_NAVD88_bmc River: RIVER-1 Reach: Reach-1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	30	500-Year	12505.00	146.00	154.04	154.04	155.42	0.005597	14.04	2433.81	740.83	0.91
Reach-1	30	100-Year	7455.00	146.00	153.13	153.13	154.18	0.004389	11.40	1780.34	701.03	0.79
Reach-1	30	50-Year	5840.00	146.00	152.71	152.71	153.69	0.004131	10.57	1486.72	680.56	0.76
Reach-1	30	10-Year	2980.00	146.00	151.53	151.53	152.40	0.003798	8.77	754.72	495.37	0.70
Reach-1	29	500-Year	12505.00	141.20	153.06		154.42	0.001769	9.98	1759.83	251.68	0.54
Reach-1	29	100-Year	7455.00	141.20	151.12		151.93	0.001323	7.55	1303.44	221.28	0.45
Reach-1	29	50-Year	5840.00	141.20	150.26		150.91	0.001197	6.69	1116.92	211.30	0.42
Reach-1	29	10-Year	2980.00	141.20	147.77		148.21	0.001273	5.34	626.47	182.45	0.41
Reach-1	28	500-Year	12505.00	137.00	148.47	148.47	150.50	0.003341	13.95	1808.06	520.00	0.75
Reach-1	28	100-Year	7455.00	137.00	146.67	146.67	148.58	0.003318	12.31	1034.65	358.22	0.72
Reach-1	28	50-Year	5840.00	137.00	145.64	145.64	147.61	0.003697	11.97	722.41	259.18	0.75
Reach-1	28	10-Year	2980.00	137.00	143.06		144.59	0.004385	10.04	318.16	69.25	0.76
Reach-1	27.75	500-Year	12505.00	136.60	147.36	140.08	147.45	0.000364	4.27	6774.20	885.39	0.24
Reach-1	27.75	100-Year	7455.00	136.60	146.20	139.21	146.24	0.000190	2.84	5781.69	818.48	0.17
Reach-1	27.75	50-Year	5840.00	136.60	145.75	138.89	145.78	0.000140	2.35	5414.84	799.04	0.14
Reach-1	27.75	10-Year	2980.00	136.60	144.08	138.24	144.09	0.000080	1.53	4125.99	747.98	0.10
Reach-1	27.5	500-Year	12505.00	136.20	147.30		147.40	0.000373	4.27	6531.94	953.69	0.24
Reach-1	27.5	100-Year	7455.00	136.20	146.16		146.21	0.000213	2.97	5451.24	949.27	0.18
Reach-1	27.5	50-Year	5840.00	136.20	145.72		145.75	0.000152	2.42	5042.19	891.38	0.15
Reach-1	27.5	10-Year	2980.00	136.20	144.07		144.08	0.000085	1.56	3760.96	661.77	0.11
Reach-1	27.25	500-Year	12505.00	135.65	147.24	140.22	147.33	0.000354	4.14	6603.55	869.84	0.24
Reach-1	27.25	100-Year	7455.00	135.65	146.13	139.30	146.17	0.000196	2.84	5665.20	827.73	0.17
Reach-1	27.25	50-Year	5840.00	135.65	145.69	138.98	145.73	0.000145	2.36	5309.09	810.69	0.15
Reach-1	27.25	10-Year	2980.00	135.65	144.05	138.34	144.07	0.000080	1.50	4047.21	718.77	0.10
Reach-1	27	500-Year	12505.00	134.90	147.17		147.24	0.000241	3.98	6956.87	1007.75	0.20
Reach-1	27	100-Year	7455.00	134.90	146.08		146.12	0.000146	2.90	5868.39	995.88	0.16
Reach-1	27	50-Year	5840.00	134.90	145.66		145.69	0.000111	2.47	5448.27	983.12	0.14
Reach-1	27	10-Year	2980.00	134.90	144.02		144.04	0.000079	1.85	3881.15	934.00	0.11
Reach-1	26	500-Year	12505.00	134.50	146.13	145.78	146.96	0.002173	11.46	3121.38	928.26	0.61
Reach-1	26	100-Year	7455.00	134.50	145.21	144.85	145.90	0.001675	9.49	2275.68	898.63	0.53
Reach-1	26	50-Year	5840.00	134.50	144.60	144.49	145.42	0.001843	9.55	1736.54	879.22	0.55
Reach-1	26	10-Year	2980.00	134.50	142.70	140.77	143.72	0.002149	8.89	539.60	294.36	0.57
Reach-1	25.5		Bridge									
Reach-1	25	500-Year	12505.00	134.50	145.35	145.35	146.42	0.002665	12.08	2407.63	903.32	0.66
Reach-1	25	100-Year	7455.00	134.50	144.58	144.58	145.43	0.002049	10.06	1718.75	878.58	0.57
Reach-1	25	50-Year	5840.00	134.50	144.15	144.15	144.98	0.001946	9.50	1341.34	862.90	0.56
Reach-1	25	10-Year	2980.00	134.50	140.65	140.65	142.94	0.006634	12.70	266.21	61.93	0.95
Reach-1	24	500-Year	12505.00	133.00	145.20		145.42	0.000555	5.93	4506.77	762.97	0.31
Reach-1	24	100-Year	7455.00	133.00	142.64		142.94	0.001162	7.25	2576.82	734.64	0.43
Reach-1	24	50-Year	5840.00	133.00	141.64		142.01	0.001393	7.33	1912.98	579.69	0.46
Reach-1	24	10-Year	2980.00	133.00	140.32		140.59	0.001129	5.85	1189.32	488.47	0.40
Reach-1	23	500-Year	12505.00	132.40	145.21		145.25	0.000134	3.00	8225.54	969.64	0.15
Reach-1	23	100-Year	7455.00	132.40	142.68		142.72	0.000144	2.68	5791.68	954.28	0.15
Reach-1	23	50-Year	5840.00	132.40	141.71		141.75	0.000151	2.57	4872.42	946.90	0.15
Reach-1	23	10-Year	2980.00	132.40	140.39		140.41	0.000095	1.84	3631.39	928.40	0.12
Reach-1	22	500-Year	12505.00	129.20	144.77	141.95	145.14	0.000700	7.89	4957.11	760.00	0.36
Reach-1	22	100-Year	7455.00	129.20	141.99	140.67	142.54	0.001037	8.36	2852.56	734.29	0.42
Reach-1	22	50-Year	5840.00	129.20	140.53	140.09	141.45	0.001639	9.65	1816.31	674.18	0.52
Reach-1	22	10-Year	2980.00	129.20	139.89	135.81	140.28	0.000675	5.94	1396.36	635.60	0.33
Reach-1	21.5		Bridge									
Reach-1	21	500-Year	12505.00	130.30	144.73		144.96	0.000651	6.34	5252.01	778.00	0.32
Reach-1	21	100-Year	7455.00	130.30	141.92		142.24	0.001022	6.69	3089.37	749.74	0.38
Reach-1	21	50-Year	5840.00	130.30	140.06		140.85	0.002528	9.11	1731.52	700.48	0.58
Reach-1	21	10-Year	2980.00	130.30	137.20	137.20	139.45	0.006849	12.06	268.27	493.77	0.91
Reach-1	20	500-Year	12505.00	130.30	144.75		144.88	0.000345	4.94	6446.51	778.00	0.24
Reach-1	20	100-Year	7455.00	130.30	141.98		142.11	0.000387	4.50	4314.00	751.04	0.24
Reach-1	20	50-Year	5840.00	130.30	140.31		140.47	0.000577	4.92	3083.59	712.56	0.29
Reach-1	20	10-Year	2980.00	130.30	137.17		137.55	0.001564	6.14	1125.33	489.58	0.44
Reach-1	19	500-Year	12505.00	130.00	144.42		144.60	0.000468	6.27	5560.84	639.00	0.29
Reach-1	19	100-Year	7455.00	130.00	141.65		141.80	0.000486	5.53	3812.12	603.84	0.29

HEC-RAS Plan: Proposed_NAVD88_bmc River: RIVER-1 Reach: Reach-1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	19	50-Year	5840.00	130.00	139.93		140.08	0.000544	5.25	2925.53	471.55	0.30
Reach-1	19	10-Year	2980.00	130.00	136.15		136.43	0.001551	6.37	1229.06	427.91	0.46
Reach-1	18	500-Year	12505.00	126.90	143.92		144.23	0.000469	5.92	3844.58	583.26	0.26
Reach-1	18	100-Year	7455.00	126.90	141.22		141.46	0.000403	4.87	2292.52	566.47	0.23
Reach-1	18	50-Year	5840.00	126.90	139.42		139.69	0.000467	4.77	1501.27	292.20	0.24
Reach-1	18	10-Year	2980.00	126.90	135.24		135.56	0.000887	4.92	704.29	146.31	0.31
Reach-1	17	500-Year	12505.00	126.90	143.90	137.11	144.22	0.000471	5.93	3834.43	583.14	0.26
Reach-1	17	100-Year	7455.00	126.90	141.20	134.91	141.45	0.000405	4.88	2283.83	566.26	0.23
Reach-1	17	50-Year	5840.00	126.90	139.40	134.08	139.67	0.000470	4.78	1496.05	291.59	0.24
Reach-1	17	10-Year	2980.00	126.90	135.20	131.70	135.52	0.000907	4.96	698.80	145.83	0.32

Proposed Conditions HEC-RAS Output Table - 2 Year Storm Only
February 13, 2024

HEC-RAS Plan: Proposed_2yr_NAVD88_bmc River: RIVER-1 Reach: Reach-1 Profile: 2-Year

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	30	2-Year	1030.00	146.00	149.02	149.02	150.16	0.009554	8.60	125.33	72.25	0.98
Reach-1	29	2-Year	1030.00	141.20	145.34		145.53	0.001223	3.48	297.22	107.11	0.36
Reach-1	28	2-Year	1030.00	137.00	139.93	139.93	141.05	0.010071	8.49	123.54	57.78	1.00
Reach-1	27.75	2-Year	1030.00	136.60	140.13	137.64	140.14	0.000167	1.28	1579.01	543.46	0.13
Reach-1	27.5	2-Year	1030.00	136.20	140.10		140.11	0.000162	1.34	1549.58	509.78	0.13
Reach-1	27.25	2-Year	1030.00	135.65	140.07	137.73	140.08	0.000169	1.33	1573.87	538.16	0.13
Reach-1	27	2-Year	1030.00	134.90	139.98		140.02	0.000271	2.25	843.29	359.33	0.19
Reach-1	26	2-Year	1030.00	134.50	139.17	137.97	139.79	0.002619	6.50	180.02	54.17	0.56
Reach-1	25.5		Bridge									
Reach-1	25	2-Year	1030.00	134.50	138.78	137.94	139.50	0.003473	7.00	159.39	52.14	0.64
Reach-1	24	2-Year	1030.00	133.00	136.95	136.88	137.90	0.006259	8.58	194.31	121.38	0.84
Reach-1	23	2-Year	1030.00	132.40	135.72		136.03	0.002342	5.04	342.02	275.11	0.49
Reach-1	22	2-Year	1030.00	129.20	135.51	132.83	135.90	0.001048	5.03	210.25	66.66	0.38
Reach-1	21.5		Bridge									
Reach-1	21	2-Year	1030.00	130.30	135.10		135.73	0.002375	6.35	162.28	243.83	0.54
Reach-1	20	2-Year	1030.00	130.30	135.15		135.46	0.001549	4.67	329.90	250.45	0.41
Reach-1	19	2-Year	1030.00	130.00	133.41		133.84	0.003732	6.52	330.34	198.73	0.65
Reach-1	18	2-Year	1030.00	126.90	130.60		131.05	0.003661	5.40	195.44	70.17	0.55
Reach-1	17	2-Year	1030.00	126.90	130.34	129.64	130.88	0.005001	5.95	177.12	69.05	0.63

Appendix C Gage Analysis Results

Bulletin 17 Editor - Norwalk at South Wilton

Frequency Curve for: Norwalk River at South Wilton-			
Percent Chance Exceedance	Computed Curve Flow in cfs	Confidence Limits Flow in cfs	
		0.05	0.95
0.2	10207.6	15533.2	7436.4
0.5	7619.5	11049.0	5747.1
1.0	6042.6	8439.8	4681.6
2.0	4735.6	6364.7	3770.2
4.0	3654.0	4721.5	2989.9
10.0	2505.0	3070.6	2123.3
20.0	1803.9	2128.7	1564.5
50.0	1029.4	1174.9	899.5
80.0	638.9	738.0	539.5
90.0	513.8	602.5	423.3
95.0	436.0	518.3	351.6
99.0	332.1	405.2	257.7

Distribution Parameters	
Parameter	Value
Mean	3.038
Standard Dev	0.272
Station Skew	0.570
Regional Skew	
Weighted Skew	
Adopted Skew	0.570
EMA Estimate of MSE (G at-site)	
Grubbs-Beck Critical Value	

Events	
Event	Number
Historic Events	0
High Outliers	1
Low Outliers	0
Zero Or Missing	0
Systematic Events	61
Historic Period	67
Equivalent Record Length (years)	

Bulletin 17B Frequency Analysis
08 Feb 2024 11:22 AM

--- Input Data ---
Analysis Name: Norwalk at South Wilton
Description:
Data Set Name: Norwalk River at South Wilton-
DSS File Name: W:\Design\20071.00003-DE\Comps\Hydrology\hec-ssp\Norwalk_River\Norwalk_River.dss
DSS Pathname: /NORWALK RIVER/SOUTH WILTON, CT/FLOW-ANNUAL PEAK/01jan1900/IR-CENTURY/USGS/
Report File Name: W:\Design\20071.00003-DE\Comps\Hydrology\hec-ssp\Norwalk_River\Bulletin17Results\Norwalk_at_South_Wilton\N
XML File Name: W:\Design\20071.00003-DE\Comps\Hydrology\hec-ssp\Norwalk_River\Bulletin17Results\Norwalk_at_South_Wilton\No
Start Date:
End Date:
Skew Option: Use Station Skew
Regional Skew: -Infinity
Regional Skew MSE: -Infinity
Plotting Position Type: Median
Upper Confidence Level: 0.05
Lower Confidence Level: 0.95
Use non-standard frequencies
Frequency: 0.2
Frequency: 0.5
Frequency: 1.0
Frequency: 2.0
Frequency: 4.0
Frequency: 10.0
Frequency: 20.0
Frequency: 50.0
Frequency: 80.0
Frequency: 90.0
Frequency: 95.0
Frequency: 99.0
Display ordinate values using 1 digits in fraction part of value
--- End of Input Data ---
--- Preliminary Results ---
<< Plotting Positions >>
Norwalk River at South Wilton-

Events Analyzed		Ordered Events			
	FLOW		Water	FLOW	Median
Day Mon Year	CFS	Rank	Year	CFS	Plot Pos
16 Oct 1955	12,000.0	1	1956	12,000.0*	1.14
06 Mar 1963	715.0	2	2007	3,490.0	2.77
25 Jan 1964	715.0	3	2011	2,440.0	4.40
08 Feb 1965	470.0	4	2006	2,340.0	6.03
01 Mar 1966	350.0	5	1980	2,300.0	7.65
07 Mar 1967	365.0	6	1979	1,940.0	9.28
29 May 1968	1,020.0	7	2021	1,870.0	10.91
25 Mar 1969	1,100.0	8	2010	1,830.0	12.54
02 Apr 1970	1,660.0	9	1989	1,800.0	14.17
14 Sep 1971	1,360.0	10	1999	1,720.0	15.80
19 Jun 1972	1,690.0	11	1987	1,710.0	17.43
03 Feb 1973	1,610.0	12	1984	1,690.0	19.06
21 Dec 1973	1,540.0	13	1972	1,690.0	20.68
27 Sep 1975	1,220.0	14	1970	1,660.0	22.31
28 Jan 1976	1,290.0	15	1973	1,610.0	23.94
22 Mar 1977	1,440.0	16	2022	1,540.0	25.57
26 Jan 1978	1,480.0	17	1974	1,540.0	27.20
21 Jan 1979	1,940.0	18	1996	1,510.0	28.83

10 Apr 1980	2,300.0	19	1983	1,480.0	30.46	
20 Feb 1981	560.0	20	1978	1,480.0	32.08	
05 Jun 1982	1,400.0	21	1977	1,440.0	33.71	
10 Apr 1983	1,480.0	22	1997	1,400.0	35.34	
05 Apr 1984	1,690.0	23	1982	1,400.0	36.97	
27 Sep 1985	969.0	24	1991	1,360.0	38.60	
26 Jan 1986	962.0	25	1971	1,360.0	40.23	
04 Apr 1987	1,710.0	26	2004	1,340.0	41.86	
20 Feb 1988	400.0	27	2008	1,320.0	43.49	
16 May 1989	1,800.0	28	1976	1,290.0	45.11	
20 Oct 1989	1,010.0	29	2014	1,280.0	46.74	
24 Oct 1990	1,360.0	30	2019	1,270.0	48.37	
18 Aug 1992	612.0	31	2009	1,230.0	50.00	
23 Nov 1992	672.0	32	1975	1,220.0	51.63	
28 Jan 1994	1,090.0	33	2020	1,200.0	53.26	
20 Jan 1995	313.0	34	2018	1,190.0	54.89	
27 Jan 1996	1,510.0	35	1969	1,100.0	56.51	
02 Dec 1996	1,400.0	36	1994	1,090.0	58.14	
24 Jan 1998	523.0	37	1968	1,020.0	59.77	
17 Sep 1999	1,720.0	38	1990	1,010.0	61.40	
07 Jun 2000	495.0	39	1985	969.0	63.03	
30 Mar 2001	655.0	40	1986	962.0	64.66	
14 May 2002	556.0	41	2005	892.0	66.29	
02 Jan 2003	586.0	42	2015	831.0	67.92	
18 Sep 2004	1,340.0	43	1964	715.0	69.54	
03 Apr 2005	892.0	44	1963	715.0	71.17	
23 Apr 2006	2,340.0	45	2012	707.0	72.80	
16 Apr 2007	3,490.0	46	1993	672.0	74.43	
07 Sep 2008	1,320.0	47	2001	655.0	76.06	
12 Dec 2008	1,230.0	48	2013	618.0	77.69	
14 Mar 2010	1,830.0	49	1992	612.0	79.32	
07 Mar 2011	2,440.0	50	2003	586.0	80.94	
08 Dec 2011	707.0	51	1981	560.0	82.57	
12 Mar 2013	618.0	52	2002	556.0	84.20	
01 May 2014	1,280.0	53	1998	523.0	85.83	
09 Dec 2014	831.0	54	2017	517.0	87.46	
16 Feb 2016	477.0	55	2000	495.0	89.09	
04 Apr 2017	517.0	56	2016	477.0	90.72	
16 Apr 2018	1,190.0	57	1965	470.0	92.35	
24 Jan 2019	1,270.0	58	1988	400.0	93.97	
13 Apr 2020	1,200.0	59	1967	365.0	95.60	
01 Sep 2021	1,870.0	60	1966	350.0	97.23	
26 Oct 2021	1,540.0	61	1995	313.0	98.86	

* Outlier

<< Skew Weighting >>

Based on 61 events, mean-square error of station skew = 0.124
Mean-square error of regional skew = -?

<< Frequency Curve >>
Norwalk River at South Wilton-

Computed Curve FLOW, CFS	Percent Chance Exceedance	Confidence Limits 0.05 FLOW, CFS	Confidence Limits 0.95 FLOW, CFS
10,207.6	0.2	15,533.2	7,436.4
7,619.5	0.5	11,049.0	5,747.1
6,042.6	1.0	8,439.8	4,681.6
4,735.6	2.0	6,364.7	3,770.2

3,654.0	4.0	4,721.5	2,989.9
2,505.0	10.0	3,070.6	2,123.3
1,803.9	20.0	2,128.7	1,564.5
1,029.4	50.0	1,174.9	899.5
638.9	80.0	738.0	539.5
513.8	90.0	602.5	423.3
436.0	95.0	518.3	351.6
332.1	99.0	405.2	257.7

<< Systematic Statistics >>

Norwalk River at South Wilton-

Log Transform: FLOW, CFS		Number of Events	
Mean	3.038	Historic Events	0
Standard Dev	0.272	High Outliers	0
Station Skew	0.570	Low Outliers	0
Regional Skew	---	Zero Events	0
Weighted Skew	---	Missing Events	0
Adopted Skew	0.570	Systematic Events	61

--- End of Preliminary Results ---

<< High Outlier Test >>

Based on 61 events, 10 percent outlier test deviate K(N) = 2.842
Computed high outlier test value = 6,463.8
1 high outlier(s) identified above test value of 6,463.8

* *
* Note - Collection of historical information and *
* comparison with similar data should be explored, *
* if not incorporated in this analysis. *
* *

Statistics and frequency curve adjusted for 1 high outlier(s)

<< Low Outlier Test >>

Based on 61 events, 10 percent outlier test deviate K(N) = 2.842
Computed low outlier test value = 184.52
0 low outlier(s) identified below test value of 184.52

--- Final Results ---

<< Plotting Positions >>

Norwalk River at South Wilton-

Events Analyzed		Ordered Events			
Day Mon Year	FLOW CFS	Rank	Water Year	FLOW CFS	Median Plot Pos
16 Oct 1955	12,000.0	1	1956	12,000.0*	1.04
06 Mar 1963	715.0	2	2007	3,490.0	2.60
25 Jan 1964	715.0	3	2011	2,440.0	4.23
08 Feb 1965	470.0	4	2006	2,340.0	5.86
01 Mar 1966	350.0	5	1980	2,300.0	7.49
07 Mar 1967	365.0	6	1979	1,940.0	9.12
29 May 1968	1,020.0	7	2021	1,870.0	10.76
25 Mar 1969	1,100.0	8	2010	1,830.0	12.39
02 Apr 1970	1,660.0	9	1989	1,800.0	14.02
14 Sep 1971	1,360.0	10	1999	1,720.0	15.65
19 Jun 1972	1,690.0	11	1987	1,710.0	17.28
03 Feb 1973	1,610.0	12	1984	1,690.0	18.92

21 Dec 1973	1,540.0	13	1972	1,690.0	20.55	
27 Sep 1975	1,220.0	14	1970	1,660.0	22.18	
28 Jan 1976	1,290.0	15	1973	1,610.0	23.81	
22 Mar 1977	1,440.0	16	2022	1,540.0	25.45	
26 Jan 1978	1,480.0	17	1974	1,540.0	27.08	
21 Jan 1979	1,940.0	18	1996	1,510.0	28.71	
10 Apr 1980	2,300.0	19	1983	1,480.0	30.34	
20 Feb 1981	560.0	20	1978	1,480.0	31.97	
05 Jun 1982	1,400.0	21	1977	1,440.0	33.61	
10 Apr 1983	1,480.0	22	1997	1,400.0	35.24	
05 Apr 1984	1,690.0	23	1982	1,400.0	36.87	
27 Sep 1985	969.0	24	1991	1,360.0	38.50	
26 Jan 1986	962.0	25	1971	1,360.0	40.13	
04 Apr 1987	1,710.0	26	2004	1,340.0	41.77	
20 Feb 1988	400.0	27	2008	1,320.0	43.40	
16 May 1989	1,800.0	28	1976	1,290.0	45.03	
20 Oct 1989	1,010.0	29	2014	1,280.0	46.66	
24 Oct 1990	1,360.0	30	2019	1,270.0	48.29	
18 Aug 1992	612.0	31	2009	1,230.0	49.93	
23 Nov 1992	672.0	32	1975	1,220.0	51.56	
28 Jan 1994	1,090.0	33	2020	1,200.0	53.19	
20 Jan 1995	313.0	34	2018	1,190.0	54.82	
27 Jan 1996	1,510.0	35	1969	1,100.0	56.45	
02 Dec 1996	1,400.0	36	1994	1,090.0	58.09	
24 Jan 1998	523.0	37	1968	1,020.0	59.72	
17 Sep 1999	1,720.0	38	1990	1,010.0	61.35	
07 Jun 2000	495.0	39	1985	969.0	62.98	
30 Mar 2001	655.0	40	1986	962.0	64.61	
14 May 2002	556.0	41	2005	892.0	66.25	
02 Jan 2003	586.0	42	2015	831.0	67.88	
18 Sep 2004	1,340.0	43	1964	715.0	69.51	
03 Apr 2005	892.0	44	1963	715.0	71.14	
23 Apr 2006	2,340.0	45	2012	707.0	72.77	
16 Apr 2007	3,490.0	46	1993	672.0	74.41	
07 Sep 2008	1,320.0	47	2001	655.0	76.04	
12 Dec 2008	1,230.0	48	2013	618.0	77.67	
14 Mar 2010	1,830.0	49	1992	612.0	79.30	
07 Mar 2011	2,440.0	50	2003	586.0	80.93	
08 Dec 2011	707.0	51	1981	560.0	82.57	
12 Mar 2013	618.0	52	2002	556.0	84.20	
01 May 2014	1,280.0	53	1998	523.0	85.83	
09 Dec 2014	831.0	54	2017	517.0	87.46	
16 Feb 2016	477.0	55	2000	495.0	89.09	
04 Apr 2017	517.0	56	2016	477.0	90.73	
16 Apr 2018	1,190.0	57	1965	470.0	92.36	
24 Jan 2019	1,270.0	58	1988	400.0	93.99	
13 Apr 2020	1,200.0	59	1967	365.0	95.62	
01 Sep 2021	1,870.0	60	1966	350.0	97.26	
26 Oct 2021	1,540.0	61	1995	313.0	98.89	

Note: Plotting positions based on historic period (H) = 67
Number of historic events plus high outliers (Z) = 1
Weighting factor for systematic events (W) = 1.1

* Outlier

<< Skew Weighting >>

Based on 61 events, mean-square error of station skew = 0.124
Mean-square error of regional skew = -?

<< Frequency Curve >>

Making Sustainability Happen