FD # 1

RECEIVED
AUG 19 2024
LAND USE DEPARTMENT

TOWN OF LEDYARD

APPLICATION FOR PLANNING & ZONING COMMISSION REVIEW

Application Number 24-11 Submission Date 8/19/24 Official Receipt Date 8/19/24

FEE: $260.00 DATE PAID 8/19/24 RECEIPT # 575054

Applicant/Agent FRANK C BORAWSKI PE LS
(Please Print Legibly)

Signature: [signature]

Address: 107 OLD WINDSOR Rd BLOOMFIELD CT Telephone 860-543-4692

E-Mail Address: FRANKB@PDSEC.COM

Owner Name (if different): JAMES ONORATO

Address of Owner: 109 MILITARY HIGHWAY Telephone 860-608-7668

Location of Work (Street Address) 109 MILITARY HIGHWAY

Tax Assessor's Map. _____ Block _____ Lot _____ Zone _____

Is this property within 500 feet of another municipality? Y (N) CAM Zone (Y) N

Existing Use RESIDENTIAL HOME CAM Exempt Y N

___ Special Permit ___ Site Plan Review ___ Regulation Change ___ Zone Map Change

___ CAM Review ___ Other: _____

Details: BANK STABILIZATION TO PREVENT PROPERTY LOSS.

Approved by _____ Date _____

Denied by _____ Date _____

COASTAL SITE PLAN APPLICATION

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LAND USE DEPARTMENT

1. Coastal Site Plan 109 MILITARY HIGHWAY, GALES FERRY

All coastal site plans shall include the location of coastal resources on and adjacent to the project site, in addition to other requirements of any applicable regulations.

2. Project Description: PROPOSED BANK STABLEZATION, THE EROSION ALONG THE BANK HAS ALREADY TAKEN OUT LARGE SHADE TREES AND IS THREATINING OTHERS, ALSO THE EXISTING SHED IS IN DANGER AS WELL AS THE DRIVEWAY,

Design: ADDITION OF STONE AND RIPRAP AS SHOWN ON PLANS TO PREVENT ADDITIONAL EROSION AND LOSE OF PROPERTY.

Timing: ONCE ALL PERMITS ARE IN PLACE WORK WILL BEGIN.

Methods of Construction: A LARGE EXTENSION EXCAVATOR WILL BE USED TO SET STONES & RIP RAP. ALL WORK TO BE CENTERED AROUND LOW TIDE.

3. Coastal Resources (on and adjacent to the site): FLOOD HAZARD AREA, ESTUARINE EMBAYMENT, TIDAL WETLANDS, SHORELANDS.

4. Applicable Coastal Resource Policies: SEE ATTACHED SHEETS

(attach additional sheets if necessary)

5. Applicable Coastal Use Policies: SEE ATTACHED SHEETS

6. Do you feel that this proposal is consistent with the Coastal policies identified above? YES Why?

THIS EXACT WORK WAS PERFORMED ON A SECTION OF THIS PROPERTY FOR HIS DOCK PERMIT, THIS AREA HAS REMAINED STABLE. THIS WORK WAS DONE IN ACCORDANCE OF THE POLICIES GOVERNING THIS AREA.

7. Impacts of the proposed activity on the condition, character, function and value of the coastal resources affected by the project (on and adjacent to site).

Beneficial	Adverse
SLOPE STABILIZATION	WORK IN TIDAL AREA
EVENTUAL NEW PLANT GROWTH (SEE PHOTOS)	

8. Describe measures proposed to lessen adverse impacts identified above.

ALL WORK WILL BE DONE AROUND THE MEAN LOW TIDE TO MINIMIZE IMPACT TO THE POND. THE FILL IS CONTROLED, AND THIS MAINTAINS ALL WORK WILL BE DONE PER THE OUTLINES OF THE PLANS.

9. Describe potential beneficial and adverse impacts on opportunities for future water dependent uses on and adjacent to the site.

Beneficial	Adverse
NONE	NONE

10. Describe measures proposed to lessen adverse impacts listed above.

N/A

11. Describe any adverse impacts that will remain after utilizing measures listed in 8 and 10 above.

NONE

12. Explain why these remaining impacts are reasonable.

N/A

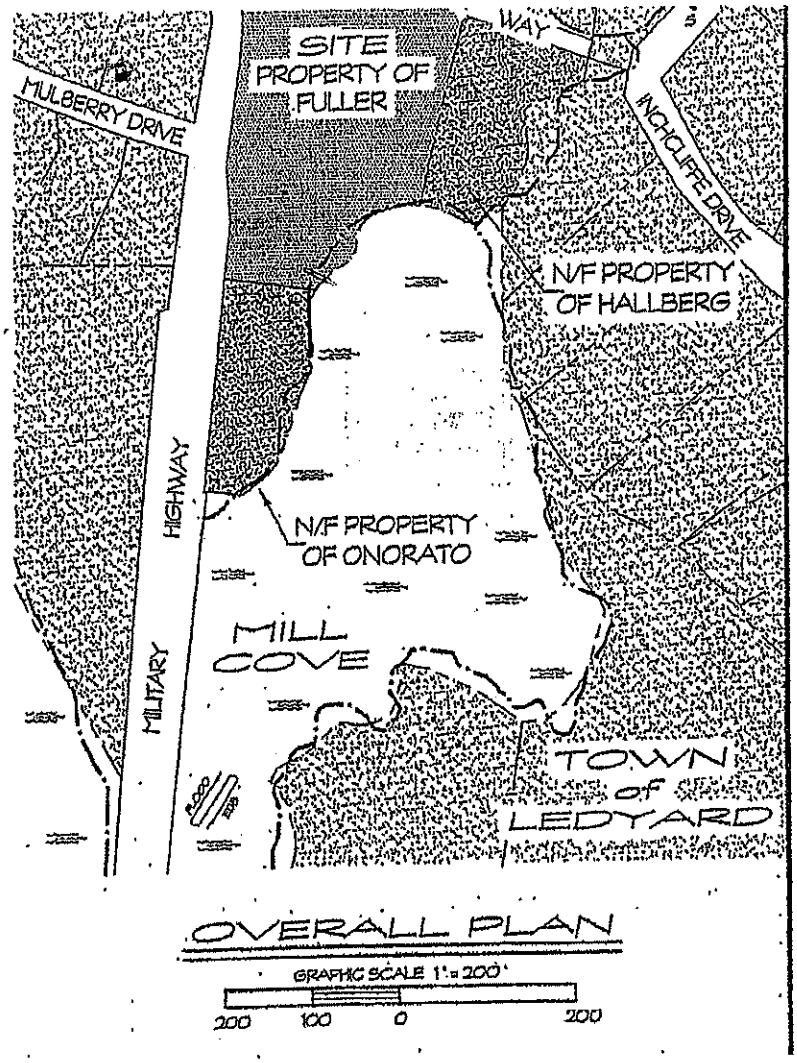
13. The requirements of items 1-12 above represent the minimum information necessary to fulfill the requirements of P. A. 79-535. In addition, as necessary, the Commission and/or the Zoning Official may require additional information, including but not limited to the following, to be submitted as part of the Coastal Site Plan Application:

a. For proposed filling, excavating, and dredging activities, the volume, origins and destinations of materials, chemical compositions, nature and type of material.
b. Description of the character and condition of all coastal resources on and adjacent to the site.
c. Description of significant natural features occurring on and adjacent to the site.
d. Lists of plant and animal species found on and adjacent to the site, including but not limited to dominant species and rare and endangered species.
e. Assessment of value and quality of biologic habitat.
f. Description of type, extent and condition of significant geologic and hydrologic features.
g. Description of significant historical and cultural features on and adjacent to the site.

BANK STABILIZATION PLAN
for
JAMES & SANDRA ONORATO

109 MILITARY HIGHWAY
GALES FERRY, CT. 06335

APPLICATION #

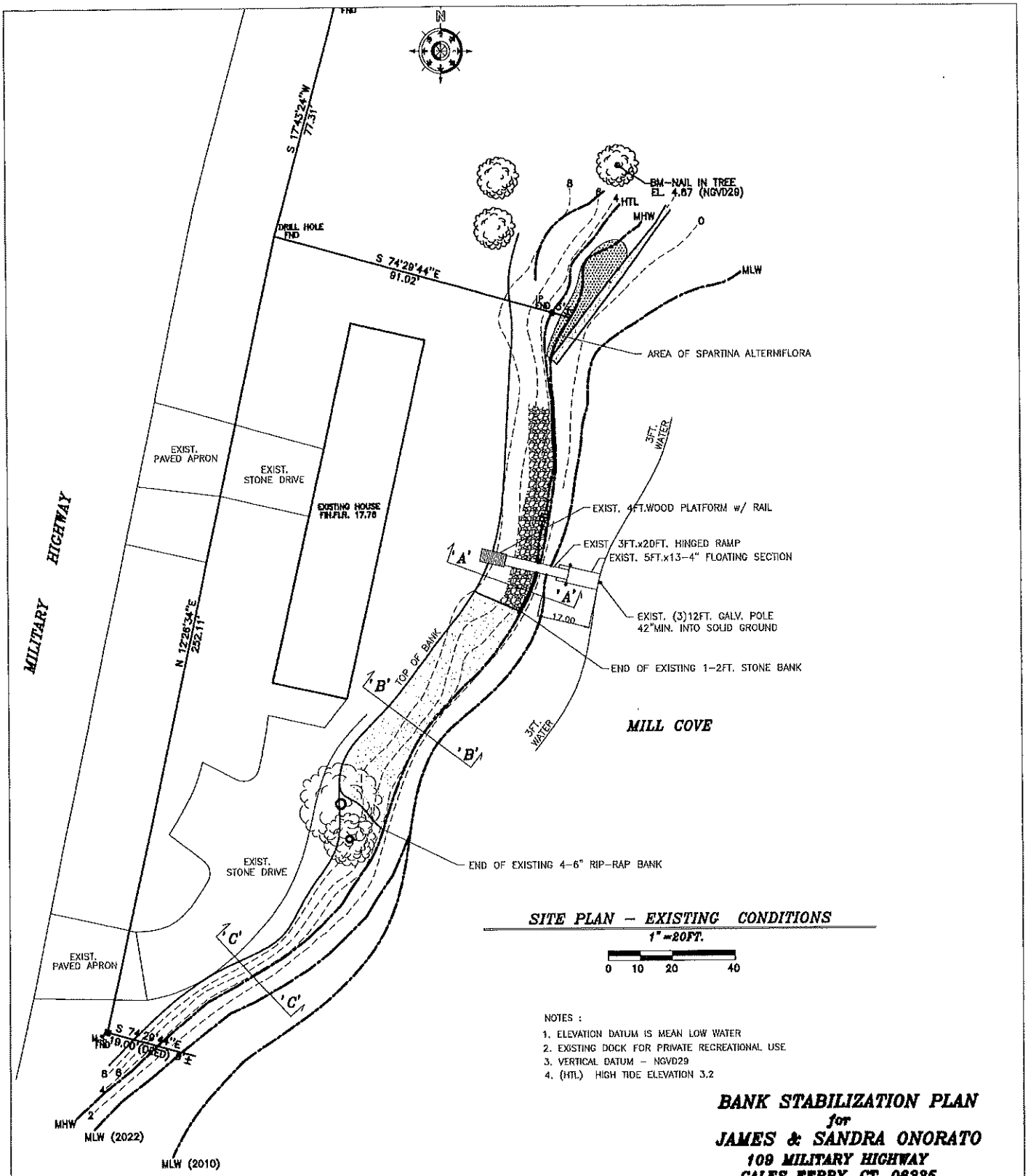


LIST OF DRAWINGS :

1 OF 3	*EXISTING CONDITIONS PLAN*
2 OF 3	*PROPOSED STABILIZATION PLAN*
3 OF 3	*EXISTING & PROPOSED SLOPE CROSS SECTIONS*

STATE OF CONNECTICUT
FRANK C. BORAWSKI
LICENSED
LAND SURVEYOR

STATE OF CONNECTICUT
FRANK C. BORAWSKI
13122
LICENSED
PROFESSIONAL ENGINEER



SITE PLAN – EXISTING CONDITIONS

1" = 20FT.

0 10 20 40

NOTES :

1. ELEVATION DATUM IS MEAN LOW WATER
2. EXISTING DOCK FOR PRIVATE RECREATIONAL USE
3. VERTICAL DATUM – NGVD29
4. (HTL) HIGH TIDE ELEVATION 3.2

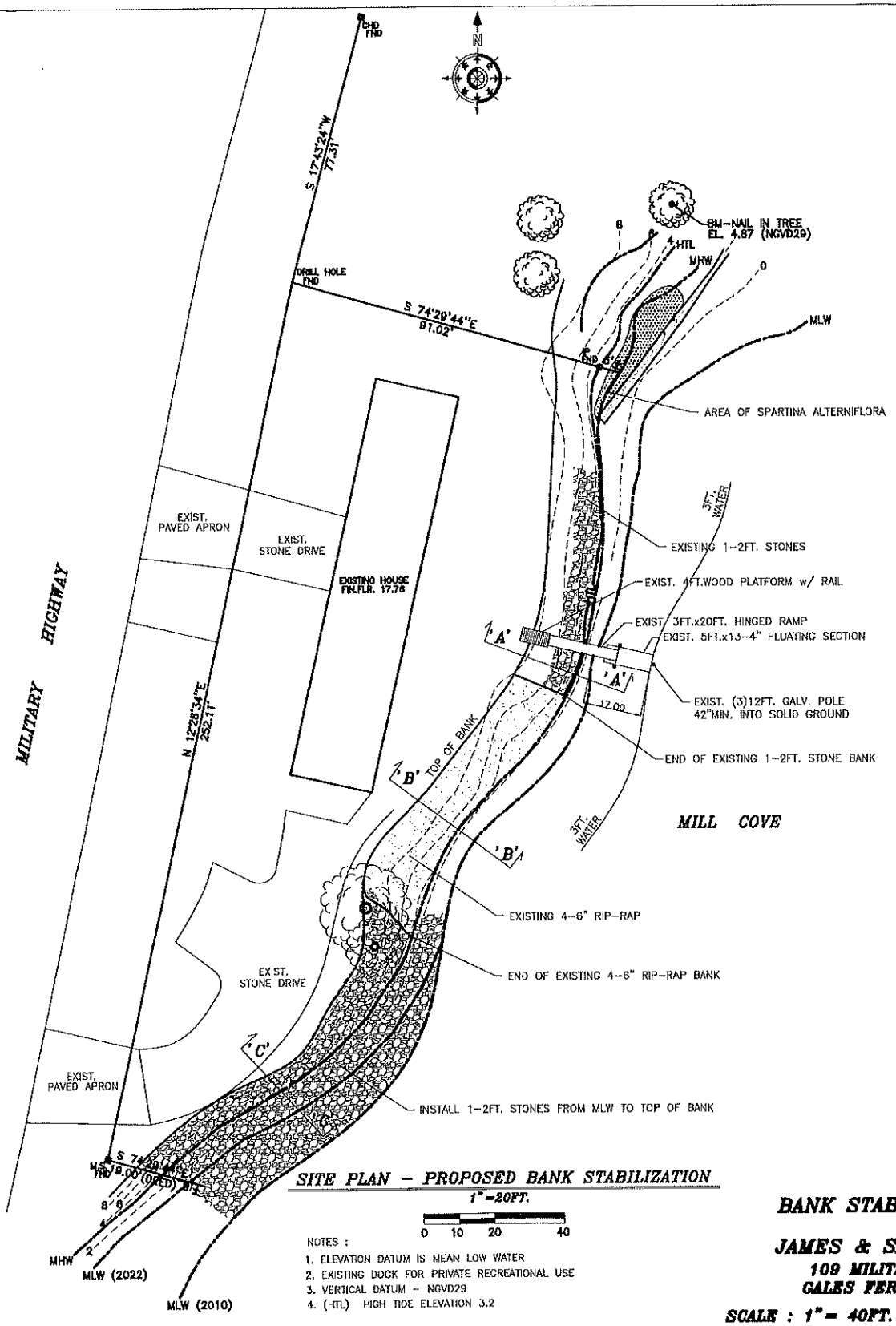
BANK STABILIZATION PLAN

for

JAMES & SANDRA ONORATO

109 MILITARY HIGHWAY
GALES FERRY, CT. 06335

SCALE : 1" = 40FT. **DATE : 5-19-2022**



SITE PLAN – PROPOSED BANK STABILIZATION

1"=20FT.

0 10 20 40

NOTES :

1. ELEVATION DATUM IS MEAN LOW WATER
2. EXISTING DOCK FOR PRIVATE RECREATIONAL USE
3. VERTICAL DATUM – NGVD29
4. (HTL) HIGH TIDE ELEVATION 3.2

BANK STABILIZATION PLAN

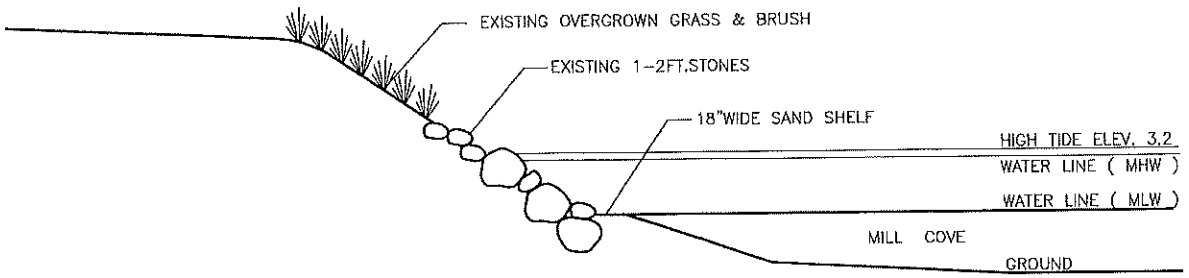
for

JAMES & SANDRA ONORATO

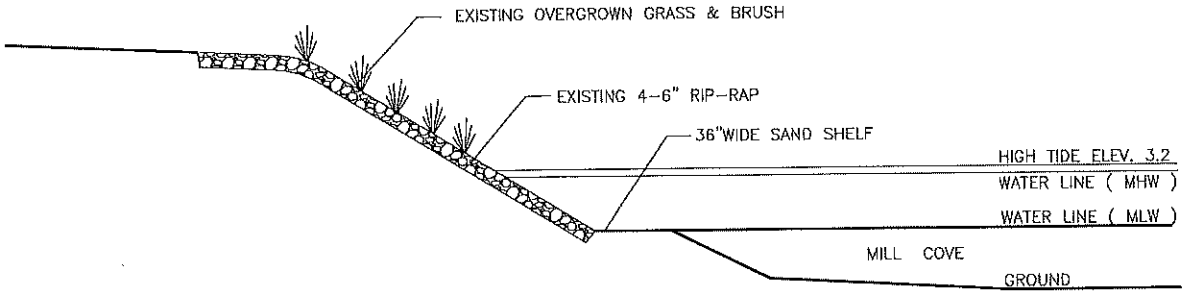
109 MILITARY HIGHWAY

GALES FERRY, CT. 06335

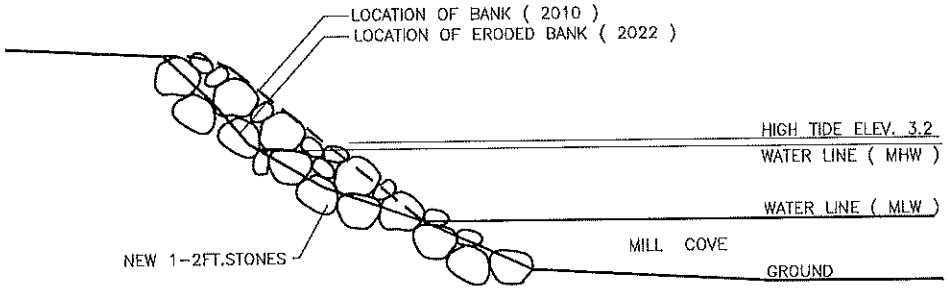
SCALE : 1"= 40FT. **DATE : 6-19-2022**



EXISTING SECTION @ STONE BANK "A-A"
1/8"=1'-0"



EXISTING SECTION @ RIP-RAP BANK "B-B"
1/8"=1'-0"



PROPOSED ERODED BANK REPAIR SECTION "C-C"
1/8"=1'-0"

BANK STABILIZATION PLAN
for
JAMES & SANDRA ONORATO
109 MILITARY HIGHWAY
GALES FERRY, CT. 06335

SCALE : 1/8=1'-0" ***DATE : 5-19-2022***

SHEET 3 of 3

RECEIVED
AUG 19 2024
LAND USE DEPARTMENT

REMA

• Soil & Wetland Studies
• Ecology • Application Reviews
• Listed Species Surveys • GPS
• Environmental Planning & Management
• Ecological Restoration & Habitat Mitigation
• Expert Testimony • Permitting

July 23, 2024

VIA E-MAIL

Mr. and Mrs. James & Sandra Onorato
109 Military Highway
Gales Ferry, CT 06335

RE: REVIEW OF BANK STABILIZATION PLAN
109 Military Highway, Gales Ferry, CT

REMA Job No.: 24-2724-LED7

Dear Mr. and Mrs. Onorato:

At your request, on July 19th, 2024, REMA ECOLOGICAL SERVICES, LLC (REMA), conducted a site investigations at the above-referenced single-family residential property, for the purpose of obtaining baseline data, and reviewing a "Bank Stabilization Plan" (4 sheets) prepared to address the ongoing bank erosion along the banks of Mill Cove, an embayment of the Thames River (see Figure 1, and Photos 1 to 2, attached).

Based both on the on-site investigation, as well as review of secondary-sources, such as the Connecticut Environmental Conditions Online (CTECO) GIS-based mapping, the regulated resource associated with the subject property is tidal, which includes narrow stands of *Spartina alterniflora* (smooth cordgrass). According to the National Wetlands Inventory (NWI), Mill Cove and associated wetlands are classified as *estuarine, subtidal, unconsolidated bottom, mixohaline/mixosaline* (brackish) (E1UBL3) system.

The plan proposes to armor a roughly 100-foot long section of eroding and unstable steep bank from mean low water (MLW) to the top of bank with 1 to 2 foot stone. This steep bank, with erodible, sandy glaciofluvial (i.e., stratified sand and gravel) soils (see attached CT Web Soil Survey), has been experiencing slumping and erosion, particularly in the intertidal zone, resulting in exposure of root systems and toppling over of trees into the tidal system. If not

stabilized, slope failure is highly likely, not only adversely impacting the regulated waters, but also causing significant property damage.

It is our professional opinion that the mitigative strategies proposed and shown on the "Bank Stabilization Plan," dated 5-19-2022, can be accomplished without any significant impacts to the regulated resources, and avert a future significant impact upon them.

Please feel free to contact us if you have any questions.

Respectfully submitted,

REMA ECOLOGICAL SERVICES, LLC

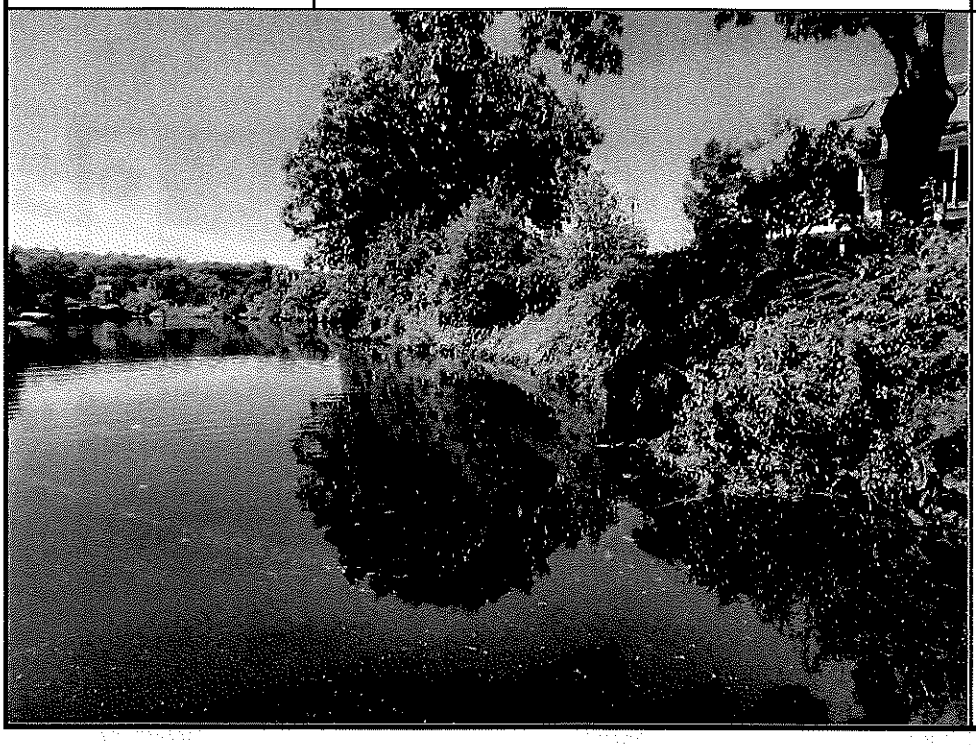
George T. Logan

George T. Logan, MS, PWS, CSE
Certified Professional Wetland Scientist
Registered Soil Scientist, Certified Senior Ecologist

Attachments: Figure 1; Photos 1 to 1; CT Web Soil Survey

REMA	SITE/LOCATION: 109 Military Highway Gales Ferry, CT	REMA JOB NO.: 24-2724-LED7	ANNOTATED PHOTO LOG
	INVESTIGATOR(S): George T. Logan, MS, PWS, CSE		

DATE: July 19, 2024	FACING: SOUTHWESTERLY	PHOTO NO.: 1



Comments: *View of slope down to the Mill Pond tidal system*

DATE: July 19, 2024	FACING: NORTHWESTERLY	PHOTO NO.: 2

Comments: *Example of bank erosion and toppling over of trees, within the section to be stabilized.*

CT Environmental Conditions Online

FIGURE 1: 109 Military Highway, Gales Ferry, Connecticut
as seen on a 2016 aerial photo with 2016 State topography

Legend

- Federal Open Space
- DEEP Property
  - State Forest
  - State Park
  - State Park Scenic Reserve
  - State Park Trail
  - Natural Area Preserve
  - Historic Preserve
  - Wildlife Area
  - Wildlife Sanctuary
  - DEP Owned Waterbody
  - Water Access
  - Flood Control
  - Fish Hatchery
  - Other
- Parcels for Protected Open Sp
- Light Gray Canvas Base

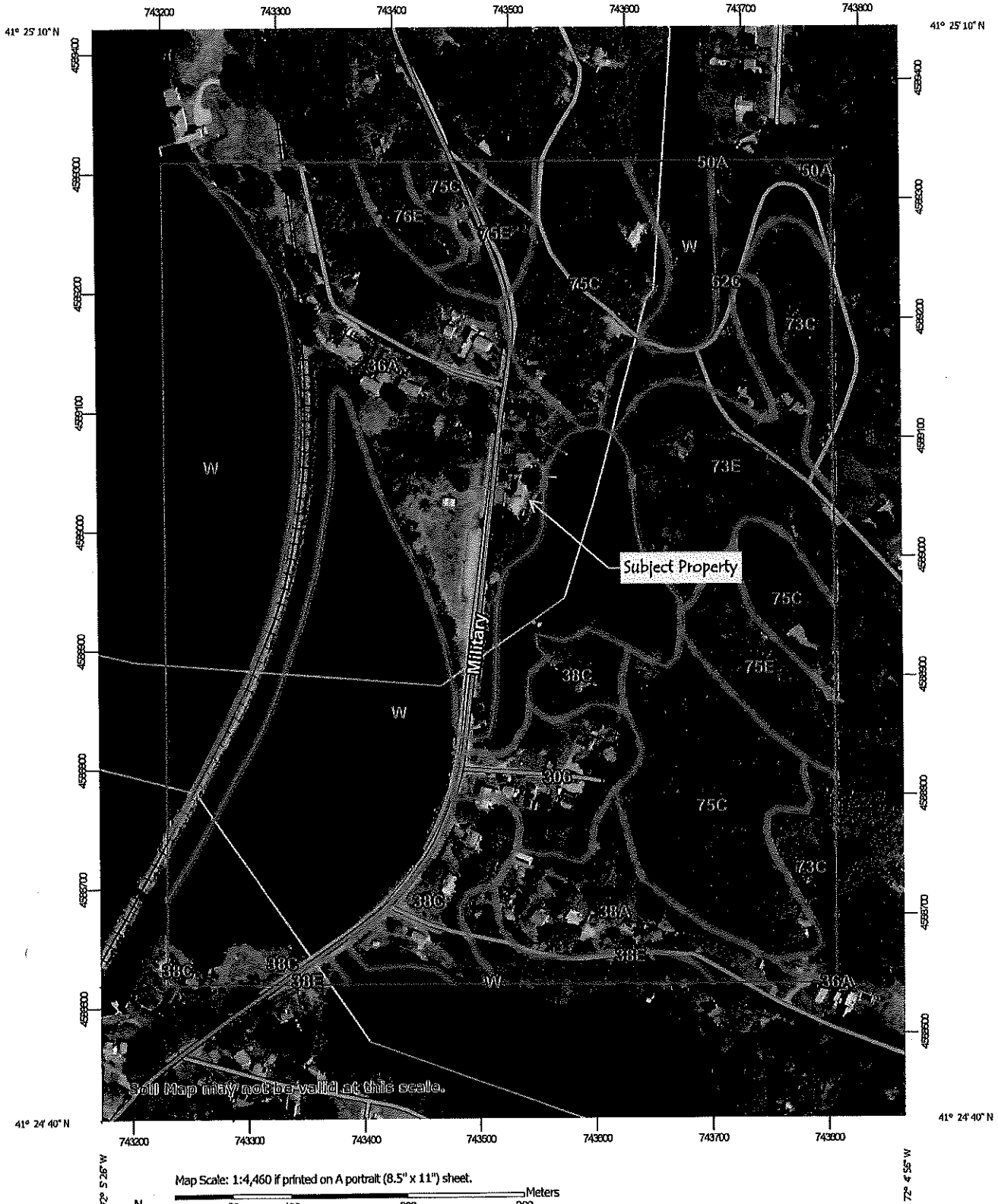
Notes

0.0 0 0.02 0.0 Miles

THIS MAP IS NOT TO BE USED FOR NAVIGATION

This map is intended for general planning, management, education, and research purposes only. Data shown on this map may not be complete or current. The data shown may have been compiled at different times and at different map scales, which may not match the scale at which the data is shown on this map.

Soil Map—State of Connecticut, Eastern Part
(109 Military Highway, Gales Ferry, CT)



Map Scale: 1:4,460 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: State of Connecticut, Eastern Part
Survey Area Data: Version 1, Sep 15, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
36A	Windsor loamy sand, 0 to 3 percent slopes	17.6	17.9%
38A	Hinckley loamy sand, 0 to 3 percent slopes	3.9	4.0%
38C	Hinckley loamy sand, 3 to 15 percent slopes	4.5	4.6%
38E	Hinckley loamy sand, 15 to 45 percent slopes	1.6	1.6%
50A	Sutton fine sandy loam, 0 to 3 percent slopes	0.1	0.1%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	3.3	3.4%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	3.8	3.8%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	6.3	6.4%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	14.9	15.1%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	4.2	4.2%
76E	Rock outcrop-Hollis complex, 3 to 45 percent slopes	1.0	1.1%
306	Udorthents-Urban land complex	3.1	3.1%
W	Water	34.2	34.7%
Totals for Area of Interest		**98.6**	**100.0%**

REMA

• Soil & Wetland Studies
• Ecology • Application Reviews
• Listed Species Surveys • GPS
• Environmental Planning & Management
• Ecological Restoration & Habitat Mitigation
• Expert Testimony • Permitting

August 1, 2024

VIA E-MAIL

Mr. and Mrs. James & Sandra Onorato
109 Military Highway
Gales Ferry, CT 06335

RE: **REVIEW OF BANK STABILIZATION PLAN - *SUPPLEMENTAL***
109 Military Highway, Gales Ferry, CT

REMA Job No.: 24-2724-LED7

Dear Mr. and Mrs. Onorato:

At your request, I am providing herein a further clarification regarding regulated wetlands at the above-reference property. All of the wetland and open water resources are tidal. There are no inland wetlands (i.e., freshwater, non-tidal) associated with the subject site.

Please feel free to contact us if you have any questions.

Respectfully submitted,

REMA ECOLOGICAL SERVICES, LLC

George T. Logan

George T. Logan, MS, PWS, CSE
Certified Professional Wetland Scientist
Registered Soil Scientist, Certified Senior Ecologist

Office of Long Island Sound Programs
Fact Sheet
for
COASTAL HAZARD AREAS

What are Coastal Hazard Areas?

Coastal hazard areas are statutorily defined as those land areas inundated during coastal storm events or subject to erosion induced by such events, including flood hazard areas as defined and determined by the National Flood Insurance Act and all erosion hazard areas as determined by the Commissioner [Connecticut General Statutes (CGS) section 22a-93(7)(H)]. In general, coastal flood hazard areas include all areas designated as within A-zone and V-zones by the Federal Emergency Management Agency (FEMA). A-zones are subject to still-water flooding during so called "100-year" flood events. During 100-year flood events, V-zones are subject to direct action by waves three feet or more in height.

Why are they valuable?

Coastal hazard areas encompass most other important coastal resources, can serve as flood storage areas, and provide numerous open space and recreational opportunities. They are, by their nature, hazardous areas for structural development, especially residential-type uses.

What are the statutory policies that apply?

To manage coastal hazard areas so as to insure that development proceeds in such a manner that hazards to life and property are minimized and to promote nonstructural solutions to flood and erosion problems except in those instances where structural alternatives prove unavoidable and necessary to protect existing inhabited structures, infrastructural facilities or water-dependent uses [CGS section 22a-92(b)(2)(F)]. An "existing inhabited structure" is a building which was constructed and inhabited prior to authorization of the CCMA on January 1, 1980 and is still in residential use.

To maintain the natural relationship between eroding and depositional coastal landforms; to minimize the adverse impacts of erosion and sedimentation on coastal land uses through the promotion of nonstructural mitigation measures. Structural solutions are permissible when necessary and unavoidable for the protection of infrastructural facilities, water-dependent uses, or existing inhabited structures, and where there is no feasible, less environmentally damaging alternative and where all reasonable mitigation measures and techniques have been provided to minimize adverse environmental impacts [CGS section 22a-92(b)(2)(J)].

> To maintain, enhance, or, where feasible, restore natural patterns of water circulation and fresh and saltwater exchange in the placement or replacement of culverts, tide gates or other drainage or flood control structures [CGS section 22a-92(c)(2)(B)].

In addition, the Connecticut Coastal Management Act defines as an adverse impact:

> Increasing the hazard of coastal flooding through significant alteration of shoreline configurations or bathymetry, particularly within high velocity flood zones [CGS section 22a-3(15)(B)].

During the coastal site plan review process, a determination must be made that adverse impacts have been avoided and unavoidable adverse impacts have been minimized in order to lawfully approve the application. See the coastal site plan review and adverse impacts fact sheets for further information.

What can a municipality do to minimize impacts to these sensitive coastal resources?

N Update municipal Plan of Conservation and Development, Municipal Coastal Program, if applicable, and zoning regulations and subdivision regulations to better manage development in coastal hazard areas by incorporating language that reflects the following guidance.

N Apply the National Flood Insurance Program flood plain management requirements [24 Code of Federal Regulations (CFR) 60.3] to: 1) all activities in designated A-zones and floodways; and 2) to all new construction or substantial improvements in designated coastal high hazard zones (V-zones).

N Prevent development of high-density residential-type uses (e.g., condominium complexes, elderly housing, hospitals, assisted living facilities, hotels/motels, etc.) in V-zones. Allow such uses in A-zones only if access to the site is not flood prone and the applicant can demonstrate the project has been designed so that risks to life and property are not increased.

N Site all facilities that have the potential to cause pollution or hazardous conditions as a result of flooding or erosion, such as energy or oil and chemical handling facilities, outside of coastal hazard areas (A and V zones). If a facility, because of its water-dependent nature, cannot be located outside of a coastal flood hazard area, incorporate flood-proofing measures in the design of the facility to protect against flooding including extreme conditions (generally a 500-year frequency flood event or greater).

N Site all new or substantially improved buildings, dwellings and non-water-dependent structures out of the designated coastal high hazard area (V-Zone).

Office of Long Island Sound Programs
Fact Sheet
for
COASTAL WATERS AND ESTUARINE EMBAYMENTS

What are Coastal Waters and Estuarine Embayments?

Coastal waters are those waters of Long Island Sound and its harbors, embayments, tidal rivers, streams and creeks, which contain a salinity concentration of at least five hundred parts per million under the low flow stream conditions as established by the commissioner [Connecticut General Statutes (CGS) section 22a-93(5)].

Coastal waters can be separated into "nearshore waters," "offshore waters" and "estuarine embayments."

> *Nearshore Waters* are those waters and their substrates lying between mean high water and a depth approximated by the ten meter contour [CGS section 22a-93(7)(K)].
>
> *Offshore Waters* means the area comprised of those waters and their substrates lying seaward of a depth approximated by the ten meter contour [CGS section 22a-93(7)(L)].
>
> *Estuarine Embayments* are a protected coastal body of water with an open connection to the sea in which saline sea water is measurably diluted by fresh water including tidal rivers, bays, lagoons and coves [CGS section 22a-93(7)(G)].

Why are they valuable?

Coastal waters are areas of high primary and secondary productivity. Coastal waters provide habitat for a variety of marine organisms (shellfish, finfish, crustaceans and benthic organisms); support many diverse floral and faunal species; provide spawning and breeding areas for many species; and are an important contributor to the productivity of contiguous ocean waters. Coastal waters are critical to the assimilation of industrial, commercial and residential wastes; support commercial and recreational fisheries; are important to marine transportation and navigation; and provide recreational opportunities for boating, swimming, fishing, diving and vistas.

Estuarine embayments are semi-enclosed bodies of coastal waters, such as tidal rivers or coves, which are measurably diluted by freshwater inputs. As such they have high biological productivity; provide significant habitat for shellfish, finfish and waterfowl; serve as spawning and feeding grounds for commercially important finfish; are essential biological corridors for spawning anadromous and catadramous fish; exhibit unique circulation patterns (estuarine circulation) which influence nutrient distribution, control salinity, mix the water column and work and redistribute sediments; supply sheltered areas for the development of eelgrass flats or beds of other submerged aquatic vegetation which are highly productive; provide nursery grounds, shelter and refuge for various aquatic species; are a vital food source for marine organisms, support an important biomass of epiphytic plants (plants that grow on other plants or objects upon which they depend for mechanical support but not as sources of nutrients); and transfer nutrients from sediments into

the water column. Estuarine embayments also provide protected locations for activities such as boating, swimming, fishing and other passive recreational activities and protected areas for deep water access and navigational corridors for commercial and industrial waterfront uses; are areas of unique scientific and educational value, and some embayments contain eelgrass flats which reduce current velocities, control erosion by trapping and binding sediments and provide essential aquatic habitat.

What are the statutory policies that apply?

> To manage estuarine embayments so as to insure that coastal uses proceed in a manner that assures sustained biological productivity, the maintenance of healthy marine populations and the maintenance of essential patterns of circulation, drainage and basin configuration; to protect, enhance and allow natural restoration of eelgrass flats except in special limited cases, notably shellfish management, where the benefits accrued through alteration of the flat may outweigh the long-term benefits to marine biota, waterfowl, and commercial and recreational finfisheries [CGS section 22a-92(c)(2)(A)].
>
> It is found and declared that the pollution of the waters of the state is inimical to the public health, safety and welfare of the inhabitants of the state, is a public nuisance and is harmful to wildlife, fish and aquatic life and impairs domestic, agricultural, industrial, and recreational and other legitimate beneficial uses of water, and that the use of public funds and the granting of tax exemptions for the purpose of controlling and eliminating such pollution is a public use and purpose for which moneys may be expended and tax exemptions granted, and the necessity and public interest for the enactment of this chapter and the elimination of pollution is hereby declared as a matter of legislative determination [CGS section 22a-422, as referenced by CGS section 22a-92(a)(2)].

In addition, the Connecticut Coastal Management Act defines as an adverse impact:

> Degrading water quality through the significant introduction into either coastal waters or groundwater supplies of suspended solids, nutrients, toxics, heavy metals or pathogens, or through the significant alteration of temperature, pH, dissolved oxygen or salinity [CGS section 22a-93(15)(A)].

During the coastal site plan review process, a determination must be made that adverse impacts have been avoided and unavoidable adverse impacts have been minimized in order to lawfully approve the application. (See the *Coastal Site Plan Review* and *Adverse Impacts* fact sheets for additional information.)

Finally, the state statutes regarding planning and zoning contain specific requirements for zoning regulations and Plans of Development that relate to the restoration and protection of coastal resources. These are:

> In any municipality that is contiguous to Long Island Sound the regulations adopted under this section shall be made with reasonable consideration for restoration and protection of the ecosystem and habitat of Long Island Sound and shall be designed to reduce hypoxia, pathogens, toxic contaminants and floatable debris in Long Island Sound. Such regulations shall provide that the commission consider the environmental impact on Long Island Sound of any proposal for development [CGS section 8-2(b)].
>
> The plan adopted under this section for any municipality that is contiguous to Long Island Sound shall be made with reasonable consideration for restoration and protection of the

ecosystem and habitat of Long Island Sound and shall be designed to reduce hypoxia, pathogens, toxic contaminants and floatable debris in Long Island Sound [excerpt from CGS section 8-23].

What can a municipality do to minimize impacts to these sensitive coastal resources?

* Maintain the continued biological productivity and viability of Long Island Sound as a resource capable of supporting: 1) healthy marine and finfish resources; 2) a broad spectrum of safe and healthy recreational opportunities; and 3) an efficient system of marine transportation and navigation through the protection of coastal water quality. The most direct approach is to adopt and implement a stormwater management ordinance, either as an amendment to the municipal zoning regulations or as a "stand-alone" ordinance. In either case, it should require that the volume of runoff generated by the first one-inch of rainfall is retained on-site and the post-development runoff rates and volumes should not exceed the pre-development runoff rates and volumes. (See *Stormwater Management* fact sheet for additional information.)

* Review the existing zoning regulations regarding the maximum impervious cover allowed. Reduce this wherever possible, especially adjacent to coastal waters and other sensitive coastal resources. This will aid in protecting coastal water quality by minimizing stormwater discharges.

* Require regularly scheduled street sweeping and catch basin clean-outs to minimize the amount of sediment, contaminants and floatable debris entering coastal waters through the municipal stormwater management system.

* Identify outfalls from the municipal stormwater systems and opportunities for retrofits to treat stormwater, especially from roads, prior to discharge.

* Prohibit the dumping of sand, snow and demolition debris into any waterbodies.

* Consider coordination with neighboring municipalities on watershed management planning.

* Update the municipal Plan of Conservation and Development, Municipal Coastal Program, if applicable, and zoning and subdivision regulations to better protect coastal waters and estuarine embayments by increasing buffers between development and these coastal resources, with the possible exception of developed shorefront where water-dependent development is suitable and to improve stormwater management. (See fact sheets regarding *Vegetated Buffers*, *Stormwater Management* and *Adverse Impacts* for more information).

* Maintain and improve water quality in accordance with the highest standards set by federal, state or local authorities by: 1) preserving and maintaining those waters with existing quality better than established standards; 2) restoring the surface waters of the municipality to a quality consistent with its use for the protection and propagation of fish, shellfish and wildlife including breeding, feeding and nursery grounds and with its use for recreation in and on the water; and 3) restoring all water to the maximum extent possible, at least to a

Office of Long Island Sound Programs
Fact Sheet
for
TIDAL WETLANDS

What are Tidal Wetlands?

Tidal wetlands are "those areas which border on or lie beneath tidal waters, such as, but not limited to banks, bogs, salt marshes, swamps, meadows, flats, or other low lands subject to tidal action, including those areas now or formerly connected to tidal waters, and whose surface is at or below an elevation of one foot above local extreme high water; and upon which may grow or be capable of growing some, but not necessarily all, of [a list of specific plant species - see Connecticut General Statutes (CGS) section 22a-29(2) for complete list of species]" [CGS section 22a-29, as referenced by CGS section 22a-93(7)(E)]. In general, tidal wetlands form in "low energy" environments protected from direct wave action. They are flooded by tidal waters twice a day and support a diverse ecosystem of vegetation and wildlife.

Why are they valuable?

Tidal wetlands are areas of high nutrient and biological productivity that provide detrital products forming the base of the food web in Long Island Sound. Tidal wetlands provide habitat, nesting, feeding, and refuge areas for shorebirds; serve as a nursery ground for larval and juvenile forms of many of the organisms of Long Island Sound and of many estuarine-dependent oceanic species; and provide significant habitat for shellfish. Tidal wetlands also improve water quality by trapping sediments, reducing turbidity, restricting the passage of toxics and heavy metals, decreasing biological oxygen demand (BOD), trapping nutrients, and buffering storm and wave energy. Tidal wetland vegetation stabilizes shorelines and buffers erosion. Tidal wetlands provide recreational opportunities for fishing, wildlife observation and hunting; are important to commercial and recreational shell- and finfisheries; and are areas of scientific and educational value. Tidal wetlands are a major source of coastal open space.

What are the statutory policies that apply?

It is declared that much of the wetlands of this state have been lost or despoiled by unregulated dredging, dumping, filling and like activities and despoiled by these and other activities, that such loss or despoliation will adversely affect, if not entirely eliminate, the value of such wetlands as sources of nutrients to finfish, crustacea and shellfish of significant economic value; that such loss or despoliation will destroy such wetlands as habitats for plants and animals of significant economic value and will eliminate or substantially reduce marine commerce, recreation and aesthetic enjoyment and that such loss of despoliation will, in most cases, disturb the natural ability of tidal wetlands to reduce flood damage and adversely affect the public health and welfare; that

such loss or despoliation will substantially reduce the capacity of such wetlands to absorb silt and will thus result in the increased silting of channels and harbor areas to the detriment of free navigation. Therefore, it is declared to be the public policy of this state to preserve the wetlands and to prevent the despoliation and destruction thereof [CGS section 22a-28 as referenced by CGS section 22a-92(a)(2)].

To preserve tidal wetlands and to prevent the despoliation and destruction thereof in order to maintain their vital natural functions; to encourage the rehabilitation and restoration of degraded tidal wetlands; and where feasible and environmentally acceptable, to encourage the creation of wetlands for the purpose of shellfish and finfish management, habitat creation and dredge spoil disposal [CGS section 22a-92(b)(2)(E)].

To disallow any filling of tidal wetlands and nearshore, offshore, and intertidal waters for the purpose of creating new land from existing wetlands and coastal waters which would otherwise be undevelopable, unless it is found that the adverse impacts on coastal resources are minimal [CGS section 22a-92(c)(1)(B)].

To disapprove extension of sewer and water services into developed and undeveloped beaches, barrier beaches and tidal wetlands except that, when necessary to abate existing sources of pollution, sewers that will accommodate existing sues with limited excess capacity may be used [excerpt from CGS section 22a-92(b)(1)(B)].

In addition, the Connecticut Coastal Management Act defines as an adverse impact:

Degrading tidal wetlands, beaches and dunes, rocky shorefronts, and bluffs and escarpments through significant alteration of their natural characteristics or functions [CGS section 22a-93(15)(H)]

Degrading or destroying essential wildlife, finfish or shellfish habitat through significant alteration of the composition, migration patterns, distribution, breeding or other population characteristics of the natural species or significant alterations of the natural components of the habitat [CGS section 22a-93(15)(G)].

During the coastal site plan review process, a determination must be made that adverse impacts have been avoided and unavoidable adverse impacts have been minimized in order to lawfully approve the application. See the *Coastal Site Plan Review* and *Adverse Impacts* fact sheets for additional information.

What can a municipality do to minimize impacts to these sensitive coastal resources?

- Update the municipal Plan of Conservation and Development, Municipal Coastal Program, if applicable, and zoning and subdivision regulations to better protect tidal wetlands by providing development setbacks and vegetated buffers from the upland edge of tidal wetlands which are adequate to protect the wetlands from

Office of Long Island Sound Programs
Fact Sheet
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SHORELANDS

What are Shorelands?

Shorelands are those land areas within the coastal boundary exclusive of coastal hazard areas, which are not subject to dynamic coastal processes and which are comprised of typical upland features such as bedrock hills, till hills, and drumlins [Connecticut General Statutes (CGS) section 22a-93(7)(M)]. In general, shorelands are not located within coastal flood or erosion hazard areas (V-zones and A-zones as defined by the Federal Emergency Management Agency) and contain no tidal wetlands, beaches and dunes or other sensitive resources.

Why are they important?

Shorelands function as immediate sources of upland runoff contributing to coastal drainage, serve as immediate sources of upland sediments, provide scenic vistas, and have high development and redevelopment potential.

What are the statutory policies that apply?

> To regulate shoreland use and development in a manner which minimizes adverse impacts upon adjacent coastal systems and resources [CGS section 22a-92(b)(2)(I)].

The statutes regarding planning and zoning also contain specific requirements for zoning regulations and Plans of Conservation and Development that relate to the restoration and protection of coastal resources. These are:

> In any municipality that is contiguous to Long Island Sound the regulations adopted under this section shall be made with reasonable consideration for restoration and protection of the ecosystem and habitat of Long Island Sound and shall be designed to reduce hypoxia, pathogens, toxic contaminants and floatable debris in Long Island Sound. Such regulations shall provide that the commission consider the environmental impact on Long Island Sound of any proposal for development [CGS section 8-2(b)].
>
> The plan adopted under this section for any municipality that is contiguous to Long Island Sound shall be made with reasonable consideration for restoration and protection of the ecosystem and habitat of Long Island Sound and shall be designed to reduce hypoxia, pathogens, toxic contaminants and floatable debris in Long Island Sound [excerpt from CGS section 8-23].