

COASTAL AREA MANAGEMENT REPORT

FOR

THE DEPARTMENT OF PUBLIC WORKS

CAPPING OF FORMER LANDFILL

LANDSCAPE BERM

AT

AGGREGATE STORAGE AND PROCESSING YARD

TOWN OF FAIRFIELD

June 14, 2017

TAX ASSESSOR'S MAP: 183 PARCEL: 153

LOCATION:

900 RICHARD WHITE WAY
FAIRFIELD, CT

Prepared by Laura Pulie, P.E.
Town Of Fairfield
Engineering Department

Description:

The site is located at the westerly end of Richard White Way situated on approximately 8 acres of a 116 acres parcel owned by the Town Of Fairfield. This parcel contains the Public Works Operations Facility, Transfer Facility & Scale House, Board of Education Bus Depot, Water Pollution Control Facility, Animal Control Shelter, Conservation Workshop, Regional Fire Training Facility, and Wood & Yard Waste Facility. The location of the aggregate storage and processing yard is located adjacent to the Board of Education Bus Depot and Wood & Yard Waste Facility to the east and north, and bounded by the tidally influenced Pine Creek and a salt water lagoon to the south and west. The elevation of the current aggregate pile varies from elevation 25 to elevation 60 (based on NAVD 1988) above mean sea level (MSL). The aggregate pile is located over a former land fill and currently stores 100,000 CY of various aggregate materials. The US Army used the property from 1955 to 1961 for a Nike missile battery and control tower. The Town Of Fairfield obtained the property from the US Army in 1961, and the property has been used by the town since that time. The first usage was for municipal solid waste, at lower elevation near the high tide line. It continued to rise and later transitioned into a brush pile area, which was burned and covered with dirt. Since the mid-1980's it has been used for aggregate storage covered with soil, concrete and asphalt that was intended for reuse. The base was continually added to over the years with material from DPW projects over the ensuing years, with some reduction in size periodically occurring. Under this proposal, the landfill will be capped in accordance with CT Department of Energy and Environmental Protection's Regulations. In addition, material will be graded to provide both visual and sound protection between Public Works Operations and the residential Fairfield Beach Road Peninsula neighbors primarily to the south and southwest.

The project currently under way is to remove approximately 3,200 tons (or 2,300 C.Y.) of contaminated material that has been identified. A contractor (Connecticut Tank Removal) is performing this work with the oversight of a Licensed Environmental Professional (LEP). The remediation work is expected to conclude in early July 2017. Confirmation sampling, testing, and closeout are expected in August 2017.

The berm will be constructed around the southerly and westerly sides of the site. This includes both the aggregate pile area, and a portion of the current Wood & Yard Waste Facility. On the southeasterly side, the berm will eventually merge with an earthen berm at elevation 16 that is proposed for the hardening of the Waste Water Treatment Facility. The clean fill material currently at the site will be used to construct the berm using approximately 42,000CY. The material will be tested prior to placement for use in the berm. The top of the berm will be twelve feet in width and will be set to elevation 45. The majority of the side slopes are 2 on 1 creating an 80 foot wide base width. The remaining material (approximately 58,000 CY) will remain on the northern portion of the site, behind the newly constructed landscape berm and will be leveled to have a maximum height of elevation 44 ft above MSL. It will be used for future Town construction projects, such as the hardening project to construct the earthen dike

just to the east of this site. The excess material will be used, sold, or otherwise exported to create a capped level area behind the berm with elevations ranging between 30 and 34 ft. above MSL.

A gravel walking trail, twelve foot in width, will be constructed along the south side of the berm with grades varying from elevations 15 to 26. The walking trail will be accessible to the public and will provide an ideal location to view Pine Creek, the tidal marshes and the tidal lagoon, as well as Long Island Sound in the distance. Residents will have the opportunity to enjoy all the amenities that this coastal environment has to offer, such as hiking, bird watching and picnicking. The elevation of the trail is above the Special Flood Hazard Zone which is an added benefit of this location, while being located directly adjacent to tidal waters and marshes. This site is one of the few locations where the public has access to such an environment. The trail can eventually be linked to the Dr. Frank Rice, PhD, walking trails located in Salt Meadows Open Space.

The berm will be capped with either low permeability soil or topsoil, dependent on the area of the site the berm is located. The berm that is located in Area B will be capped with the low permeability soil (clay and silt) which will be covered with topsoil and seeded with a coastal meadow mix. The berm in Area C (off site of the fill pile) will be covered with topsoil and seeded. *Sassafras Albidum* (sassafras) and *Juniperus virginiana* (Eastern red cedar) will be planted along the southerly slope as shown on the Landscape Plan. These trees will provide habitat for wildlife, while volunteer growth will eventually begin to populate the berm and provide additional naturally occurring plant life indigenous to this coastal environment. Also proposed to encourage and diversity the habitat for bird life is 26 perching poles with bird houses attached. These will be installed along the face of the berm.

Area A is located on the former landfill site and will be surrounded to the south and west with the earthen berm. This area, approximately 3 acres in size will be graded to elevation 34 at the perimeter and will be sloped to elevation 30 in the center of this yard area. The area will be capped with a 4 inch thick layer of asphalt millings and will drain towards a stormwater drainage system that will capture the Water Quality Volume (approximately 1" of rainwater). The stormwater drainage system consists of a series of catch basins with three-foot deep sumps and siphon hoods, storm water drainage pipes and a sedimentation basin. The catch basins will collect stormwater runoff and direct the runoff into a retention system in the form of an above-grade retention/sedimentation basin. Any excess runoff, greater than 1", will be discharged from the sedimentation basin into Pine Creek via an existing 24" diameter ADS storm drain, as shown on the site plan. The site, being greater than 5 acres will require a Stormwater Discharge Permit from the CT DEEP. Area B is the location of the proposed earthen berm to be constructed over the former landfill. This section of berm will be capped with low permeability material to prevent penetration of rainwater into the landfill. Area C is located east of the former landfill area and will see an earthen dike constructed in this location. This section of

earthen dike will be capped with topsoil, as there is no need for an impervious cap as it is not located over the former landfill.

Area A will continue to be used by the Department of Public Works Operations as a storage and processing yard. The final end use of this site will be to process public works projects materials, such as millings, street sweepings, catch basin cleaning, asphalt and concrete where this material will be crushed, stockpiled, processed and reused as fill material where needed on DPW projects. DPW will be the sole entity conducting these activities as discussed above. The site will be used solely to store and repurpose clean, excess fill material from Town operated projects. Stockpiles of the current clean material will be stored in Area A north of the berm, which is adjacent to the employee parking lot and Board of Education bus depot. The excess material (approximately 58,000 CY) will eventually be used to construct the earthen dike for the WWTP hardening project (scheduled to begin construction in the fall/winter of 2017) and to be mixed with excess DPW work material that is brought to the site for remixing and reuse. This material will be exported from the site to be used in an approved manner as clean fill material.

The impervious and low permeability material proposed to be used as cap material will prevent stormwater from infiltrating into the former landfill. The cap will prevent polluted leachate from flowing out of the landfill area and into Pine Creek and eventually the waters of Long Island Sound. As stated earlier, DPW will continue to operate in the normal manner and will now occupy this site to continue with the operations which have been ongoing for over 50 years.

Monitoring wells will be installed as shown on the plans to test and track ground water quality. At each location, a deep well and a shallow well will be installed. Water samples will be taken 4 times per year as per Connecticut DEEP Waste Engineering and Enforcement Division. Quarterly results will be submitted to CT DEEP. Annual reports will be filed as required.

Visual screening was never provided around this site to buffer the surrounding neighborhoods from the DPW yard, Board of Education Bus Depot and Wood & Yard Waste Facility. This proposal will provide a formidable vegetated earthen berm around the site set to elevation 45. In addition, a ten-foot high chain link fence woven with fabric will provide additional screening of the Public Works Operations Facility.

The new walking trails provide public access to view and enjoy the estuarine embayment of Pine Creek as well as the tidal lagoon and tidal marshes where a variety of fish, fowl and fauna can be observed by all.

The project will be undertaken in two phases. Phase I will involve the installation of all sediment and erosion control devices, the construction of the sedimentation basin, construction of the earthen berm starting at the eastern most corner of the site located along

the southerly edge of the Wood and Yard Waste Facility. On-site aggregate material will be moved into place to construct and shape the earthen berm. Construction will continue from east to west. The remaining stormwater drainage system (catch basins, siphon hoods and pipes) will be installed in conjunction with berm construction, once aggregate material is relocated from this area. As the earthen berm is completed it will be capped with topsoil and seeded as discussed above. The catch basins will be protected with filter fabric until final site stabilization occurs. The aggregate piles not found in the footprint of the berm will be regraded and leveled to a maximum elevation 44. This phase also includes the planting of the trees, erection of bird houses, installation of three sets of monitoring wells and construction of the hiking trail. This phase is expected to start within one month of final approval and will continue for one year. Phase II will involve regrading and removing approximately 58,000 CY of aggregate piles and spreading of new the asphalt millings incrementally as the remaining material is removed, to create the impervious pad. This phase is expected to be completed within 5 year from the start of this project.

I COASTAL RESOURCES AT AND ADJACENT TO THE SITE

- A. General Resource – “Coastal Resources” means the coastal waters of the state, their natural resources, related marine and wildlife habitat and adjacent shorelands, both developed and undeveloped, that together form an integrated terrestrial and estuarine ecosystem.

(Source: P.A. 79-535, sec. 3(7))

The site is located directly adjacent to the coastal resources of Long Island Sound and falls within the Coastal Area Management Zone. The site is separated from Pine Creek which discharges into Long Island Sound, by shorelands that varies in width between 50 ft. to 150 ft. The elevation of the berm’s base (26 ft. above MSL) is well above the coastal resources found nearby. The densely vegetated shorelands buffer will not be disturbed. Where disturbance has occurred, the site will be planted with two varieties of shoreland trees as discussed above, with the long term goal of a diverse variety of naturally growing shoreland trees, having naturally seeded themselves. The site is upstream from nearshore coastal waters and tidal wetlands.

Heavy duty siltation fencing will be installed along the entire perimeter of the site as shown on the plans. Where the slope exceeds 2:1, the siltation fencing will be doubled. The fence will be checked daily and after heavy rain events to insure that silt is captured. When the level of silt reaches one-half the fence height, it will be removed from site. Stormwater runoff from the

upper area located to the north of the berm will be collected and directed to a sedimentation basin. The sedimentation basin will be inspected weekly and after heavy rain events exceeding ½". When the level of silt has accumulated to half the volume, it will be removed from the basin and mixed for reuse off site.

The hiking trail will provide passive recreational activities such as hiking, nature study, bird watching and picnicking. Visual access to the shoreline is provided as the hiking trail is set at an elevation where views of Long Island Sound and beyond can be seen. Vistas, both near and far can be enjoyed by all.

The work proposed, as described above, will alleviate and mitigate the effects that the aggregate processing facility has had on the surrounding neighborhoods. Visual screening will now be provided to the residents of the Fairfield Beach Peninsula and the shorelands resource will be enhanced and recaptured. The measures proposed will eliminate an unacceptable view they now have of this site. The berm will initially be planted with coastal meadow mix, sassafras and cedar trees that will provide a shorelands vista rather than the unpleasant aggregate processing vista and will provide a substantial buffer between the residential beach community and the operations conducted by the Department of Public Works.

The proposal is consistent with the policies set forth under this resource.

K. Shorelands – "Shorelands" means 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.

(Source: P.A. 79-535, sec. 3(7)(M))

While work proposed at this site is located adjacent to shorelands, any work proposed to construct the earthen berm and walking trail, will be upland of the shorelands. The vegetative buffer that currently exists will be protected. Siltation fencing will be installed along the base of the berm and no earth moving/ excavation work will extend beyond the site disturbance line. In areas where trees are proposed to be planted beyond the site disturbance line, the intent is to hand-dig all tree wells for minimal disturbance to the shorelands area. The berm will be planted with 78 Eastern red cedar trees and 123 Sassafras trees which will help to revegetate the shorelands environment. To encourage bird habitat back to the area, 26 perching poles with attached birdhouse will be erected as shown on the Site Plan. The amount of stormwater runoff will not be increased as any runoff generated from impervious surfaces will be collected and retained on site as required by the CT DEEP. The quality of the groundwater should improve due to the impervious cap that is proposed to be installed over the site that will prevent rainwater from percolating into the former landfill, flowing through the shorelands, and eventually flowing into Pine Creek.

This proposal is consistent with the policies set forth under this resource.

O. Estuarine Embayment – “Estuarine Embayment” means a protected coastal body of water with an open connection to the sea in which saline seawater is measurable diluted by fresh water including tidal rivers, bays, lagoons and coves.

(Source: P.A. 79-535, sec. 3(7)(G))

The site can be found adjacent to the estuarine embayment of Pine Creek, south of the site and a tidal lagoon, west of the site. Heavy duty siltation fencing is proposed for around the perimeter of the site that will contain silty runoff and restrict it from entering Pine Creek or the tidal lagoon during construction. In addition, stormwater runoff from the upper level of the site will be captured and the water quality volume, which is the first 1 “of stormwater runoff, will be retained on site. Any additional stormwater flows will be detained in a sedimentation basin and discharged into Pine Creek. A Stormwater Discharge Permit is required to be obtained from the CT DEEP, as the site exceeds 5 acres. In addition, an impervious cap comprised of asphalt millings and low permeability soils will be used to restrict percolation of stormwater runoff into what was originally a landfill. This action alone will help to improve the water quality of Pine Creek, as leachates from this site will be greatly reduced, if not eliminated from Pine Creek, as a result of this proposal.

II COASTAL RESOURCES NOT IMMEDIATELY ADJACENT TO THE SITE

A. General Resource - “General Resource” means the coastal waters of the state, their natural resources, related marine and wildlife habitat and adjacent shorelands, both developed and undeveloped, that together form an integrated terrestrial and estuarine ecosystem.

(Source: P.A. 79-535, sec. 3(7))

Not immediately adjacent to the site but downstream of the site are the waters of Long Island Sound. Upstream of the site, via tidally influenced Pine Creek, are tidal wetlands. As discussed above in Section I A, all soil and erosion control devices will be used as necessary to preserve and protect all marine and wildlife habitats. In addition stormwater runoff is now being captured and treated prior to discharge into Pine Creek, which flows both into the tidal wetlands as well as Long Island Sound.

This proposal is therefore consistent with the policies set forth in this resource.

E. Intertidal Flats – “Intertidal Flats” means very gently sloping or flat areas located between high and low tides composed of muddy, silty and fine sandy sediments and generally devoid of vegetation.

(Source: P.A. 79-535, sec. 3(7)(D))

While not adjacent to the site, intertidal flats can be found downstream in Pine Creek and upstream from the site surrounded by tidal wetlands. All measures will be taken to insure that there are no negative impacts on the intertidal flats. The use of sediment and erosion controls will insure that any silty runoff that is generated from this site during construction is captured prior to these flows entering Pine Creek. In addition, catch basins with deep sumps and siphon hoods and a sedimentation basin is proposed to capture runoff during construction as well as post construction. The slopes of the site will be stabilized with coastal meadow mix and trees which will also contribute to the reduction of silt laden stormwater from entering Pine Creek. Overall this proposal will greatly improve stormwater runoff generated from this site and thus will improve the water quality that the intertidal flats are subject to on a daily basis.

The proposal is consistent with the policies set forth in this resource.

F. Tidal Wetlands - “Tidal Wetlands” means “wetland” as defined by CGS Section 22a – 29.

(Source: P.A. 79-535, sec. 4(7)(E))

Located both upstream and downstream from the site are tidal wetlands containing spartina patens and spartina alterniflora. In addition the tidal wetlands provide habitats for shorebirds as well as a nursery for larval and juvenile forms of finfish and shellfish of Long Island Sound. The preservation of the tidal wetlands will provide recreational opportunities for fishing, shell fishing, wildlife observations, bird viewing, and hunting. The work proposed will not create a negative impact on tidal wetlands. As discussed earlier, proper erosion and sediment control devices are proposed to be utilized during the construction period and will help to enhance the water quality that is required to maintain a pristine tidal wetland environment. Wildlife management will be enhanced by the addition of perching poles and bird houses. Trees such as the sassafras and cedar that are proposed will provide nesting areas for a variety of shoreline birds as well as protection. The hiking trail will provide the public with access to view the tidal wetland environment from a perched elevation.

The proposed activity is consistent with the policies discussed in this resource.

K. Shorelands – “Shorelands” means 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.

(Source: P.A. 79-535, sec. 3(7)(M))

Located upstream and to west and northwest not immediately adjacent to this site are shorelands. The site in under review is located in an area that will not have an adverse impact on shorelands as stormwater runoff will not enter into these shorelands. Stormwater runoff will flow into Pine Creek and eventually southwest into the waters of Long Island Sound. Improvements to the vegetation at this site will help to improve the wildlife habitat that can only enhance surrounding shoreline wildlife communities. The use of sediment and erosion control devices during both construction and post-construction will help to protect the vegetative buffer and not create a detriment to the wildlife habitats found in the adjacent shorelands, and thus preserve the integrity of the wildlife habitats for the distant shorelands.

This proposal is therefore consistent with the policies set forth in this resource.

L. Shellfish Concentration Areas – Hard Clam - “Shellfish Concentration Areas” means actual, potential or historic areas in coastal waters, in which one or more species of shellfish aggregate.

(Source: P.A. 79-535, sec. 3(7)(N))

Not adjacent to the site but located approximately 7000 feet west of the site are hard clam beds. The concern is to protect the shellfish beds from receiving silt laden waters that can be harmful to this environment. The site where the work is proposed will be surrounded entirely with sediment and erosion control devices. The siltation fencing will be inspected daily to insure proper function and after rain events. A sedimentation basin will also capture stormwater runoff where silt and settlement can be captured and contained prior to discharge to Pine Creek. Pine Creek discharges into Long Island Sound and from the point of entry into the Sound the shellfish beds are approximately 2100 feet west of this point. The water quality will be maintained and should not present any adverse effects on the hard clam beds that could restrict harvesting of the shellfish in this location.

This proposal is therefore consistent with the policies set forth in this resource.

M. Nearshore Coastal Waters – “Nearshore Coastal Waters” means the area comprised of those waters and their substrates lying seaward of a depth approximated by the ten meter contour.

(Source: P.A. 79-535, sec. 3(7)(G))

The Nearshore Coastal Waters of Long Island Sound can be found approximately 4320 feet downstream of the site through the ebb of Pine Creek. It is imperative that all erosion be controlled both during construction and post construction as silt and sediment leaving this site can create an adverse impact on Long Island Sound and Pine Creek. The excavation, placement of fill material to construct the earthen berm and regrading of this site will be conducted above elevation 20, well above the tidal waters, generally found at elevation 5.2 and below. During construction the site will be surrounded with siltation fencing. The site will be stabilized with coastal meadow mix and trees that will help to reduce velocities of stormwater runoff leaving the site. In addition, all material known to be contaminated will have been removed from this site. The site, historically used as a landfill, will be formally closed and capped with impervious material or low permeability material where plant growth is proposed. The site will continue to be utilized as an aggregate processing yard that will be conducted on an impervious pad, some three acres in size. The water quality volume generated from this activity will be retained as required by CT DEEP and excess stormwater runoff will be collected via catch basins with 3-ft. deep sumps and will be directed into the proposed sedimentation basin where silt and other suspended solids can be trapped and retained on-site. Any stormwater runoff discharging into Pine Creek and ultimately Long Island Sound will not degrade the water quality. Long Island Sound is used for recreational activities such as fin and shell fishing, swimming, boating and water skiing. The methods proposed to insure that sediment is contained on-site (catch basin with deep sumps, siphon hoods and a sedimentation basin) will help to improve the water quality of Long Island Sound and the recreational activities associated with this resource.

The proposal is therefore consistent with the policies set forth in this resource.

O. Estuarine Embayment – “Estuarine Embayment” – means 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.

(Source: P.A. 79-535, sec. 3(7)(G))

Located both upstream and downstream from this site is the estuarine embayment of Pine Creek and a tidal lagoon. Pine Creek as well as the tidal lagoon are teeming with a variety of

plant and animal life. Measures outlined in previous resources under Section I, O, such as siltation fencing and the reforestation and site stabilization, will help to eliminate adverse long term effects on Pine Creek and the tidal lagoon. Stormwater runoff, as discussed earlier, will be treated prior to discharge into Pine Creek. The ebb and flow of these embayments carries stormwater runoff both upstream and downstream, effecting distant estuarine embayments. These measures taken will insure the discharge waters are treated and the water quality of Pine Creek will not be diminished from this proposal.

The proposed activity is consistent with the policies set forth in this resource.

III COASTAL POLICIES APPLICABLE TO THE USE

- A. General Development - This activity and 8 acre site located within the 116 acre parcel is within the Public Works Operations Facility. Recently it has been operated privately as an aggregate processing facility. The use is allowed and the intent is to continue this operation as it is essential to the workings of the Department of Public Works Operations Facility. The site will once again be operated by Town Of Fairfield DPW employees. This proposal will resolve conflicts that may have occurred adjacent to shorelands and tidal waters. The site will be improved to provide a definitive berm, a stormwater collection and drainage system and improvements to the vistas by way of vegetating the earthen berm. In addition visual screening of this processing activity is now proposed. The public will also have the ability to enjoy the proposed hiking trail, where access to this section of Pine Creek and tidal lagoon is currently prohibited.

The proposal is consistent with the policies set forth under General Development.

- B. Sewer and Water Lines – sewer and water lines do not exist and will not be extended to this site.
- C. Water Dependent Uses - this proposed activity is located at the Town Of Fairfield's Public Works Operations Facility. While the activity is not a water dependent use, location of the large scale DPW Operations Facility, existing in this location since the mid 1900's is the logical location for this activity. Recreational water dependent use, such as bird watching and enjoyment of the coastal and tidal estuarine environment will now be accessible to the public with the construction of the hiking trail.

- D. Fisheries – Fisheries can be considered to be found in the tidal wetlands, tidal lagoon, and nearshore waters of Long Island Sound and Pine Creek. This proposal will not have an adverse impact on fisheries as all work proposed will be conducted within the confines of sediment and erosion control devices that surround the site.
- E. Boating - Boating is a recreational activity available to the public occurring adjacent to this site in the waters of Pine Creek and Long Island Sound. This proposal will not impede or prevent boaters from continuing to utilize the coastal resources. Views from boaters will be improved as the operations and actions conducted at this site will now be visually screened. In fact, the site will be enhanced by the planting of ground cover and a variety of trees that will eliminate potential aggregate particles from becoming airborne, as well as insure that stormwater runoff is managed in a responsible, regulated manner. These actions will help to improve the quality of air and tidal waters for the boating community.

In summary the proposal discussed at length above, which involves removing contaminated material, removal of aggregate material, capping the landfill, constructing a vegetated earthen berm, installing impervious/low permeability surfaces, responsible storage and processing of aggregate material by DPW personnel, and constructing a publicly accessible hiking trail, will contribute to a more productive and amicable site where the surrounding coastal environment and public will benefit and not be impacted in any negative ways. Stormwater and groundwater quality will also be improved as proper controls are proposed. The Public Works Operations Facility will be screened from view from those residents living to the south of this site and the permanent removal of large volumes of aggregate material will commence and will be greatly reduced in size and utilized either for earthen berms, future processing or removed entirely from the site.

