FINAL
Environmental Assessment
(24 CFR Part 58)

Project Identification:	Meriden Mills Apartments Disposition and Related Parcel Assembly Meriden, CT
Map/Lots:	0106-0029-0001-0003 0106-0029-0002-0000 0106-0029-001A-0000
Responsible Entity:	City of Meriden, CT
Month/Year:	March 2017

Environmental Assessment
Determinations and Compliance Findings for HUD-assisted Projects
24 CFR Part 58

Project Information

Responsible Entity: [24 CFR 58.2(a)(7)]	City of Meriden, CT
Certifying Officer: [24 CFR 58.2(a)(2)]	City Manager, Meriden, CT
Project Name:	Meriden Commons
Project Location:	144 Mills Street, 161 State Street, 177 State Street, 62 Cedar Street; Meriden CT**.**
Estimated total project cost:	TBD
Grant Recipient: [24 CFR 58.2(a)(5)]	Meriden Housing Authority, Meriden CT.
Recipient Address:	22 Church Street Meriden, CT 06451
Project Representative:	Robert Cappelletti
Telephone Number:	203-235-0157

Conditions for Approval: (List all mitigation measures adopted by the responsible entity to eliminate or minimize adverse environmental impacts. These conditions must be included in project contracts or other relevant documents as requirements). [24 CFR 58.40(d), 40 CFR 1505.2(c)]

The proposed action requires no mitigation measures.

FINDING: [58.40(g)]

__X__ Finding of No Significant Impact
(The project will not result in a significant impact on the quality of the human environment)

___ Finding of Significant Impact
(The project may significantly affect the quality of the human environment)

Preparer Signature: 4/10/2017
Name/Title/Agency: Deborah Howes AICP **Date**
Manager of Impact Assessment and Permitting, AECOM

4/11/2017
Recipient Signature:
Name/Title/Agency: **Date**
City Manager, City of Meriden

4/11/2017
Recipient Signature:
Name/Title/Agency: Robert Cappelletti **Date**
Executive Director, Meriden Housing Authority

RE Reviewing Official Signature
Name/Title/Agency:
Date

RE Approving Official Signature
Name/Title/Agency:
Date

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Statement of Purpose and Need for the Proposal: [40 CFR 1508.9(b)]

This Environmental Assessment (EA) is a revision of the Final EA for Meriden Mills Apartments Disposition and Related Parcel Assembly prepared for the City of Meriden ("the City") in October 2013. In accordance with 24 CFR Part 58, the Meriden Housing Authority (MHA) will redevelop three contiguous tax lots in downtown Meriden. This project will help MHA and the City attain objectives described in the Final EA, and in existing planning documents, including the City's HUD Choice Neighborhood Transformation Plan (HUD Choice Plan) and its Harbor Brook Flood Control Plan. These outcomes include replacement of substandard housing in a low-income minority neighborhood that is subject to repetitive loss from flooding with quality housing located outside the 100-year floodplain. This new housing will anchor a mixed-use, transit-oriented redevelopment.

MHA was established in 1943 to provide housing assistance for low-income families and individuals. The Mills Memorial Apartment federal family public housing development (Mills) is owned and managed by MHA and was built in 1961. Mills includes two seven-story high-rise buildings and three three-story low-rise buildings that house a total of 140 units.

Mills is subject to repetitive loss because of its location in the 100-year floodplain. Like the broader surrounding central business district, the development is characterized by distressed housing conditions and concentrated resident poverty and disenfranchisement. Innovative strategies are required to stem the tide of disinvestment in the city's housing stock and economy and to leverage Meriden's assets, which include its location, its downtown parkland, its train station, and its community health facility.

On the basis of a public planning process that included significant resident and stakeholder input, the City of Meriden defined demolition of Mills as a key housing plan objective. To minimize displacement of vulnerable residents, the City also stipulated that all 140 demolished housing units will be replaced by bedroom type with 140 quality units of public housing and/or project-based voucher (PBV) units. All lease-compliant Mills residents will have right of return to this new, improved housing, and will have ample choice in respect of housing type, location, and bedroom type. All newly created housing units will be located outside of the 100-year floodplain.

The 2013 EA addressed the demolition of two of the low-rise structures at Mills; transfer of the 144 Mills Street tax lot from MHA to the City; and disposition and assembly of the three contiguous tax parcels described above. These parcels currently contain surface parking lots, at 161 State Street and 177 State Street, and public open space, at 62 Cedar Street. HUD approved demolition of two low-rise structures and parking lots in 2015. These two low-rise buildings are vacant and tenants have been relocated.[1] The current revision to the EA describes the impacts of demolition of the remaining low-rise and two high rise structures, and new construction described above, at 161 State Street and 177 State Street. Successful implementation of this next project phase is essential to maintain the City's and MHA's momentum in catalyzing development of a diverse mixed-income community.

Redeveloping Mills and Meriden's central business district are critical transformation goals for the project. The project was conceived within the context of the current administration's proposed HUD Choice Plan, which is predicated upon a holistic approach to revitalizing communities through close connections among housing, educational opportunities, and wraparound services. The future development project would meet these HUD Choice Plan goals by providing community services for Meriden residents and expanding the supply and improving the quality of affordable housing in the City.

[1] http://www.meridenbiz.com/Customer-Content/www/CMS/files/Presentation_1-19-2016_144_Mills_remediation_FINAL3.pdf

Between 2010 and 2015, the population of Meriden decreased slightly from 60,868 to 59,988, a 1.4 percent decrease.[2] However, the City anticipates that its population will stabilize and then grow as a result of downtown redevelopment. The project described below therefore represents a strong initial step to meet the current and future housing needs of Meriden residents.

Description of the Proposal: Include all contemplated actions, which logically are either geographically, or functionally a composite part of the project, regardless of the source of funding. [24 CFR 58.32, 40 CFR 1508.25]

The proposed disposition, site assembly, demolition, and new construction activities described in this EA involve complete removal and partial replacement of Mills units. As described below, the City and MHA have a five-year plan to effect complete replacement of all Mills units. This plan has been informed by extensive resident and stakeholder input, and is designed to minimize displacement and to provide current Mills residents with high-quality housing options.

The four lots containing and adjacent to Mills are referred to as the "Mills Megablock." These lots include 144 Mills Street, where Mills is located, and which is owned by MHA; 161 State Street and 177 State Street, which are currently surface parking lots owned by the City; and 62 Cedar Street, which currently contains the municipal Cedar Park. The Megablock is bounded by Park Street to the north, State Street and Mills Street to the west, Cedar Street to the east, and Pratt Street to the south, as shown in **Figure 1**. As part of this action, MHA will transfer its ownership of 144 Mills Street to the City. The City will then completely demolish Mills, to enable flood control plan construction activities described in the Harbor Brook Flood Control Plan, including landscaping and daylighting of Harbor Brook through the Mills Megablock.

Demolition activities include the removal of one low-rise building and two high-rise structures located at Mills in addition to the previously approved demolition of two low-rise buildings there. Under the disposition and demolition actions, and pursuant to 24 CFR 970, Mills would be removed from the Federal public housing program. In sum, three low-rise structures, each containing 12 housing units (36 total units), and two high-rise structures, each containing 52 housing units (104 total units) would be removed from the HUD Declaration of Trust.

The action would also transfer ownership of the current municipal parking lots and of Cedar Park from the City to MHA, as described in the previous version of the EA. These disposition and parcel assembly activities will allow the Housing Authority to enter into a ground lease for 161 and 177 State Street with a Low Income Housing Tax Credit ("LIHTC") owner entity who will undertake site redevelopment.

The proposed new construction on State Street will be completed in two phases, the first of which will bring 75 housing units online. Of these units, 60 will be affordable, including 26 replacement PBVs. The new development will include ground floor rentable retail space and on-site parking. The replacement PBV units will primarily serve households below 30% AMI (<$26,250); the non-replacement affordable units will be predominantly LIHTC units serving households between 30-60% AMI ($26,250-$52,500); market rate units will target households above 60% AMI (>$52,500). This first construction phase was recently awarded a 9% LIHTC award from Connecticut Housing and Finance Agency. The second phase of the new construction will consist of 76 housing units, additional ground floor rentable retail space, and additional parking.

This new development will be wholly located outside of the 100-year floodplain. It will provide partial replacement of the affordable housing units that will be eliminated when Mills is demolished, as well as additional non-replacement affordable housing units. It is critical to note that the City has

[2] http://www.census.gov/quickfacts/table/PST045215/09,09009,0946450,00

committed to replace *all* 140 PBVs removed by the demolition of Mills by 2020. All units will be replaced by bedroom type, in accordance with the City's HUD Choice plan, which was developed on the basis of resident and stakeholder input. Two-thirds of the replacement units will be located within walking distance of the Mills Megablock site. Lease-compliant Mills residents will have right of return to newly created quality affordable housing, and will be offered choices based on their bedroom type, location, and housing type preferences.

This project phase is a component of a broad strategy to replace and remediate the City of Meriden's distressed housing stock. The City's overall housing strategy will employ a combination of new construction and rehabilitation of existing housing to provide 494 new housing units over a five-year period. This figure includes replacement of all 140 Mills units; provision of 241 additional non-replacement affordable units; and creation of 113 new market rate units.

Existing Conditions and Trends: Describe the existing conditions of the project area and its surroundings, and trends likely to continue in the absence of the project. [24 CFR 58.40(a)]

The City of Meriden is located within New Haven County, in south-central Connecticut. The city is roughly 20 miles north of New Haven, and 20 miles south of Hartford, the state's capital. According to 2015 Census Bureau Estimates, the city's population is 59,988.[3] Median household income in Meriden is $53,401, lower than both the County ($61,646) and statewide ($69,899) averages.[2] Poverty is highly concentrated and prevalent in the immediate project area: in the census blocks containing the Mills Megablock, the Census Bureau estimates that 36.5% of households live below the federal poverty line. Compared to the City at large, the average downtown resident is three times likelier to be unemployed.

In addition to the high- and low-rise buildings described above, the Mills Memorial Apartment complex contains a community center. The remainder of the site consists of asphalt parking, walkways and grassy landscaped areas. An open space resource is located in the northern portion of the block, and features both active and passive recreation areas. Driveway access to the site is obtained via Mill and Cedar Streets. Harbor Brook runs in an underground culvert beneath the central portion of the complex and continues southward through the "Meriden Green" (former HUB site) to Hanover Pond.

The surrounding area generally consists of residential uses, vacant land, commercial properties and parking lots. A downtown redevelopment site known as the Meriden Green, or Meriden HUB reuse project, is located south of the project site, across Mill Street. The Meriden Green is a 14-acre flood control/park and economic development project located in the heart of downtown Meriden. The project, completed in 2016, includes the restoration of Harbor Brook, and creation of a town green, economic development options, and transit-oriented development opportunities. A new intermodal transportation center is also planned to integrate planned commuter rail service with local and express bus service.

The blocks east of Cedar Street are characterized by additional low-rise multi-family residential buildings. These two-story brick buildings are set back from Cedar Street and include shared parking for building residents. Low-rise semi-attached residential structures are also found north of the project site, on both sides of Park Street. Further east, several detached residential buildings are located on the north side of Park Street, near Center Street.

The immediate area south of Pratt Street is also largely residential. Southwest of the project site on Pratt Street and Caitlin Street is a large five-story multi-family residential building with off-street

[3] http://www.census.gov/quickfacts/table/PST045215/09,09009,0946450,00

rear parking. To the east, both sides of Twiss Street contain single-family detached residences. A Meriden Public School career center is located on Pratt Street between Twiss Street and Center Street. A large U.S. Post Office and mail distribution center is located on the western block face of Center Street between Pratt and Miller Streets. This facility is located across Center Street from a large light industrial/manufacturing structure occupied by the Miller Company.

Northwest of the project site, State Street contains a variety of commercial and community facility uses. Located primarily in one- and two-story brick buildings, tenants include a rehabilitation agency, pharmacy and a community health clinic. A portion of State Street from Mills Street to East Main Street is currently closed for construction. One-half block west of State Street is the New Haven-Hartford-Springfield Railroad Line, which runs at-grade west of the project site.

The principal east-west highway in the City, U.S. I-691, runs several blocks north of the project site. I-691, which is classified by the Connecticut Department of Transportation as a Principal Arterial roadway, is a spur highway that links I-91 to I-84 in Cheshire. Pratt Street and State Street, which are southeast of the project site, are classified as Collector roadways. All other streets surrounding the project site are classified as local roadways. A roadway functional class map for the City of Meriden is shown in **Figure 2**.

Several bus lines are found within close proximity to the project site. The "A", "B", "C" and "M" lines, operated by North East Transportation and Middletown Area Transit, run on State Street directly west of the project site. The "M" bus offers regional service to Middletown and Cromwell, while the other local lines operate within the City. Additional bus lines are operated throughout Meriden and the region.

Aside from the Meriden Green (HUB Reuse Project) located adjacent to the project site, no significant changes in the immediate vicinity of the proposed action are projected in the future.

If this project were not to progress, the City and MHA anticipate that downtown Meriden would experience continued disinvestment and dilapidation of its housing stock. The City's housing stock would continue to fail to meet the needs of its current low-income residents, and would continue to fail to provide attractive housing options for residents of all income levels. In the absence of this project, the City would lose significant momentum in its quest to leverage $125 million in recent public and private investment in downtown.

Statutory Checklist

[24CFR §58.5]

For each listed statute, executive order or regulation, record the determinations made. Note reviews and consultations completed as well as any applicable permits or approvals obtained. Attach evidence that all required actions have been taken. Record any conditions or mitigation measures required. Then, make a determination of compliance or consistency.

STATUTES, EXECUTIVE ORDERS, AND REGULATIONS LISTED AT 24 CFR 50.4 & 58.5

Compliance Factors: Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5	**Are formal compliance steps or mitigation required?**	**Compliance Determination**
Historic Preservation [36 CFR 800]	Yes ☐ No ☒	The project site is in a disturbed urban environment, and includes redevelopment of paved parking lots; a public park; and, three low-rise structures and two high-rise structures that were constructed around 1961 and that are not believed to be historically significant. The Connecticut State Historic Preservation Office has approved the activities described in this EA. Therefore, the proposed action would not violate 36 CFR 800.
Floodplain Management [24 CFR 55, Executive Order 11988]	Yes ☐ No ☒	A portion (2.2 acres) of the project site is located within a Special Flood Hazard Area (SFHA) Zone AE, which is subject to inundation by the 1 percent annual chance flood. This 100-year floodplain, also known as the base flood, is the flood that has a 1 percent chance of being equaled or exceeded in any given year. The base flood elevation is the water-surface elevation of the 1 percent annual chance flood. In Zone AE, which covers a portion of the project site, the base flood elevation is approximately 130 feet. The project actions described in this EA would remove all housing units from the 100-year floodplain, and would therefore minimize the risk of repetitive loss Executive Order 11988, as implemented by 24 CFR Part 55, Floodplain Management, does apply to the proposed action following the decision-making process in Section 55.20, the proposed action is demonstrated to comply with 24 CFR Part 55. Development within and adjacent to the floodplain would remain in its current state. There is no practicable design or modification to the proposed action that would minimize the potential adverse impacts within the floodplain or restore and preserve its natural and beneficial values. The proposed action would not result in flood hazards in the floodplain, aggravate the current hazards to other floodplains, or disrupt floodplain values. Therefore, the project would be in compliance with Executive Order 11988. See Figure 3: FEMA Floodplain Map (Panel #0166H) and Attachment A, "Determination of Applicability to 24 CFR 55."
Wetlands Protection [Executive Order 11990]	Yes ☐ No ☒	The project site is not located in, nor does it encroach upon, any federal wetlands. Therefore, the proposed action would not violate Executive Order 11990. See Figure 4: National Wetlands Inventory Map.
Coastal Zone Management Act [Sections 307(c),(d)]	Yes ☐ No ☒	The project site is not located within Connecticut's designated Coastal Boundary; therefore, the proposed action would not violate the Coastal Zone Management Act.
Sole Source Aquifers [40 CFR 149]	Yes ☐ No ☒	The proposed activities are not located above a designated sole source aquifer; therefore, the proposed action would not violate 40 CFR 149.

Compliance Factors: Statutes, Executive Orders, and Regulations listed at 24 CFR §58.5	**Are formal compliance steps or mitigation required?**	**Compliance Determination**
Endangered Species Act [50 CFR 402]	Yes ☐ No ☒	The project site is centrally located in Meriden, a highly developed urban area. According to information obtained through the Department of Energy and Environmental Protection (DEEP),[4] Federally listed endangered, threatened and special concern species are found in New Haven County. However, according to the Connecticut DEEP's Natural Diversity Data Base (NDDB)(dated June, 2016), there are no known occurrences of rare or state-listed animals or plants, significant natural communities, or other significant habitats, on or in the immediate vicinity of the site;[5] therefore, the proposed action would not violate the Endangered Species Act.
Wild and Scenic Rivers Act [Sections 7 (b), (c)]	Yes ☐ No ☒	There are no designated Wild or Scenic Rivers within or adjacent to the project site;[6] therefore, the project would not violate the Wild and Scenic Rivers Act.
Air Quality [Clean Air Act, Sections 176 (c) and (d), and 40 CFR 6, 51, 93]	Yes ☐ No ☒	The activities described in this EA, including proposed demolition and new building construction, require the performance of additional air quality analysis. 40 CFR 51 and 40 CFR 93 require quantification of construction and operational nonattainment pollutant emissions in the area where the project site is located. As described in additional detail in **Appendix A**, The City is currently designated as a moderate nonattainment area for 8-hour O_3, a maintenance area for $PM_{2.5}$, and an attainment area for the other criteria pollutants. Based on the anticipated extent and duration of the activities described in this EA, the total projected emissions indicated no exceedance of the applicable *de minimis* criteria of 100 tpy for NOx and $PM_{2.5}$ and 50 tpy of VOC. The proposed project action would therefore have minimal air quality impacts and would not require a formal conformity determination. The proposed action would conform with the State Implementation Plan (SIP).
Farmland Protection Policy Act [7 CFR 658]	Yes ☐ No ☒	The project would not involve the conversion of farmland to non-agricultural use and therefore would not violate the Farmland Protection Policy Act.
Environmental Justice [Executive Order 12898]	Yes ☐ No ☒	The proposed action would not result in a disproportionately high adverse human health impact or environmental impact on minority or low-income populations. Although the proposed action is located in a predominantly low-income area, the proposed action would not result in any unmitigated adverse environmental impacts.
Noise Abatement and Control [24 CFR 51 B]	Yes ☐ No ☒	As described more fully in **Appendix B**, the project area is within 50 feet of a major thoroughfare, and within 270 feet of an operating railway line. Based on analysis that utilized HUD's Day/Night Noise Level (DNL) Assessment Calculator, predicted DNL levels indicate that the project site is considered "Acceptable" for residential use. Noise attenuation and other mitigation measures will therefore not be necessary to effect this project. This analysis is also based on a conclusion that construction would not generate or reroute vehicular traffic, and that no new sensitive noise receptors or noise sources (including mobile and stationary sources) would be introduced as part of the proposed action.

[4] http://www.ct.gov/deep/lib/deep/endangered_species/species_listings/newhavenctyspecies.pdf
[5] ftp://ftp.state.ct.us/pub/dep/gis/endangeredspeciesmaps/nd080.pdf
[6] http://www.nps.gov/ncrc/programs/rtca/nri/states/ct.html

Toxic or Hazardous Substances and Radioactive Materials [HUD Notice 79-33]	Yes ☐ No ☒	A Phase II Environmental Site Investigation (ESI) was performed in December 2012, and a Phase III Environmental Site Assessment (ESA) was performed in March 2016 for the project site at 161 State Street. The Phase II and Phase III indicate that PAHs and metals are present in subsurface materials at the site at concentrations above the Residential Direct Exposure Criteria (RDEC), industrial/commercial direct exposure criteria (I/C DEC), and/or Ground Water Classification Pollutant Mobility Criteria (GB PMC) in soil samples. Arsenic and Phenanthrene were present above Surface Water Protection Criteria (SWPC) in groundwater. PAH and metal concentrations in soils and groundwater are likely associated with fill material underlying the site. Arsenic concentrations are likely due to silt content of samples and/or naturally occurring concentrations documented throughout the area. Contaminated soil remaining onsite will be rendered environmentally isolated and inaccessible beneath the proposed new construction building foundations and parking lot. Any soils to be removed from the site as part of redevelopment activities will be disposed of at a regulated landfill. A Phase I ESA for the project site at 144 Mills Memorial was performed in June 2012. This report identified several Recognized Environmental Conditions (RECs), including the historic presence of woodworking and painting operations dating to the 1890s and 1900s, and an automotive repair shop in the 1950s and 1960s. In addition, an inactive 10,000 gallon heating oil underground storage tank (UST) was identified south of the project site, in the high-rise building along Pratt Street. An oily pit with standing water was observed in the boiler room of this building, and is believed to be associated with this inactive UST. It is recommended that the fill material found on-site be evaluated prior to any construction activities as part of a soil management plan. Further, due to the presence of COCs and RECs at 144 Mills Memorial, a Phase II ESI has been recommended. The Hazardous Materials Building Assessment reports for residential structures located at The Mills (High Rise 1, High Rise 2, Low Rise 1, Low Rise 2 and Low Rise 3) were conducted in October 2015. The assessment reports indicates that the buildings material considered as asbestos containing material (ACM) and it is recommended to develop asbestos abatement work plan/specifications demonstrating removal of ACM. Lead and polychlorinated biphenyls (PCB) concentration were found below the regulatory standard. Phase I ESAs were also prepared for 177 State Street and 62 Cedar Street. The conclusions of these assessments were consistent with the findings of 144 Mills Memorial. The area surrounding these sites was historically developed for commercial and industrial purposes, which existed until the 1950s. Numerous listings for properties of concern surround the project site, several of which are hydrogeological upgradient of the site. The Phase III ESA was conducted for 177 State Street in March 2014 to characterize contaminants of concern at Areas of Concern (AOC). Report indicates that Arsenic and PAH exceeded I/C DEC, ETPH, PAH and lead exceeded RDEC and PAH exceeded BG PMC in AOC. Both ETPH and PAH were found in urban fill material. Antimony is present in urban fill material and in deep soils below the urban fill material. Phenanthrene, arsenic, lead and mercury are present in groundwater above SWPC. The City completed soil cleanup in 2017 in accordance with CTDEEP standards using CT Department of Economic and Community Development (DECD) brownfields grant. 177 State Street has undergone remediation using funds provided by a CT DECD brownfield grant. The site has been entered into the state Voluntary Remediation Program and cleanup has been conducted in accordance with the Remedial Action Plan completed by a Licensed

		remaining onsite will be rendered environmentally isolated and inaccessible beneath the proposed new construction building foundations and parking lot. Any soils to be removed from the site as part of redevelopment activities will be disposed of at a regulated landfill. Following completion of the new construction, a closure report will be prepared and submitted to the CTDEEP. The report will be accompanied by verification from the designated site LEP that all investigation and remediation activities are in compliance with the Remediation Standard Regulations (RSR) Criteria.
Explosive and Flammable Hazards [24 CFR 51 C]	Yes ☐ No ☒	The Phase I ESAs and Phase II ESI prepared for the project site revealed that there are no hazardous operations that pose a threat to the project site. A survey of the area revealed that there are 22 underground storage tanks (UST) present within approximately ¼ mile of the project site and no aboveground storage tanks (AST). The project site is located within a primarily residential area of Meriden. No hazardous operations, including industrial operations, fuel supply depots or private filling stations, are located within 1,000 feet of the project site; therefore, the proposed action is in compliance with 24 CFR 51 C. See related Phase I & Phase II documentation, attached.
Airport Clear Zones and Accident Potential Zones [24 CFR 51 D]	Yes ☐ No ☒	The project site is located more than one mile northeast of the Meriden-Markham Municipal Airport; therefore, no further assessment is warranted and no impacts would result.
List of Permits Obtained	Yes ☐ No ☒	No permits are required as part of the proposed action.
Public Outreach [24 CFR 50.23 and 58.43]	Yes ☐ No ☒	The Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) were made available for public comment for a 15-day period from September 7 to September 21, 2016. A notification of the FONSI and opportunity for public comment was published in the *Record-Journal* on September 7, 2016.
Cumulative Impacts Analysis [24 CFR 58.32]	Yes ☐ No ☒	No significant adverse impacts are anticipated as a result of the proposed action; therefore no cumulative impacts need to be assessed. The cumulative social impacts to public housing are being considered for the City of Meriden as part of the Choice Neighborhoods Initiative, which is part of a holistic approach to revitalizing communities through close connections among housing, educational opportunities, and wraparound services.

Environmental Assessment Checklist

[Environmental Review Guide HUD CPD 782, 24 CFR 58.40; Ref. 40 CFR 1508.8 &1508.27]

Evaluate the significance of the effects of the proposal on the character, features and resources of the project area. Enter relevant base data and verifiable source documentation to support the finding. Then enter the appropriate impact code from the following list to make a finding of impact. **Impact Codes**: (**1**) - No impact anticipated; (**2**) - Potentially beneficial; (**3**) - Potentially adverse; (**4**) - Requires mitigation; (**5**) - Requires project modification. Note names, dates of contact, telephone numbers and page references. Attach additional materials as needed.

Land Development	**Code**	**Source or Documentation**
Conformance with Comprehensive Plans and Zoning	1	The project site is located within a mapped Transit Oriented District (TOD) Zone and the parcels are in the TOD-Park Sub-district (adopted in 2013). As shown in Figure 5. Multi-family residences (up to 100 dwelling units per site) are permitted in this district, as are TOD mixed-income residences with up to 100 units per site. In a TOD-park district, maximum lot coverage of 75 percent is permitted for multi-family dwellings. Any future TOD mixed-income development on this site would be limited to eight stories in height under the existing zoning regulations. The proposed action, which includes land disposition, parcel assembly, new construction, and allocation of PBVs for future development only, would not result in a change to the site's existing zoning, and would conform to existing zoning regulations.
Compatibility and Urban Impact	1	Uses on the project site include two parking lots, public open space and three low-rise and two high-rise residential buildings with 140 total dwelling units. The proposed project activities would not significantly alter the land use conditions in the neighborhood. Although all residential buildings at Mills would be demolished, the subsequent project activities are key components of a broader municipal strategy to foster equitable and sustainable urban-scale transit-oriented development. The full redevelopment of the Mills Megablock will involve enhancement of natural and open space resources, as well as construction of contextually appropriate and quality housing and retail options.
Slope	1	The topography of the site is generally flat. No impacts to slope are anticipated. See Phase I ESA for 144 Pratt Street and 161 State Street.
Erosion	1	The topography of the site is generally flat. No erosion impact is anticipated. See Phase I ESA for 144 Pratt Street and 161 State Street.
Soil Suitability	1	The Phase II Subsurface Investigation Report determined that the project site is underlain by fill material followed by sand, asphalt, brick and concrete fragments. These materials commonly occur in the area and do not negatively impact the feasibility of redevelopment. See Phase II ESA Report, December 2012.
Hazards and Nuisances including Site Safety	1	There would be no significant hazards or nuisances associated with the proposed action. The proposed disposition, parcel assembly, new construction and PBV allocation would result in no increased emissions of air pollutants, exposure to heavy metals or other contaminants, attract vermin or pests, or create noise or odors. Therefore, no significant hazard or nuisance impacts are expected.

Energy Consumption	1	The proposed action involves parcel disposition, new construction, and transfer only, and would have no impact on energy generation or distribution.
Noise - Contribution to Community Noise Levels	1	The project site presently contains three low-rise residential buildings (with 12 occupied dwelling units and 24 vacant dwelling units), two high-rise residential buildings (with 116 occupied dwelling units), two surface parking lots and a publicly accessible open space. Many residents are believed to own vehicles, which contribute to the ambient noise profile of the area. During visual and auditory field inspection, the existing residential buildings' mechanical systems (i.e., heating, ventilation, and air conditioning systems) were observed to be operating within a normal decibel range. Additionally, users of the open space at 62 Cedar Street, which includes active recreation elements such as playground equipment, are considered an existing stationary noise source on the project site. Construction noise from Meriden Green (former HUB site) located at Pratt Street is considered a temporary noise source. Elevated community noise levels are not expected to result from the proposed action, and no impact is anticipated.
Air Quality Effects of Ambient Air Quality on Project and Contribution to Community Pollution Levels	1	To assess the effects of ambient air quality on the proposed action, a visual survey was conducted to determine whether there are any industrial emission sources in the area that could potentially affect existing residents and users of the project site. The result of the industrial source visual survey is that the potential for air toxic impacts on the project site is not significant. As a result of the proposed action, no new stationary or mobile emission sources would be introduced on or near the project site. Therefore, the proposed action would have no significant adverse impact on community pollution levels.
Environmental Design Visual Quality - Coherence, Diversity, Compatible Use and Scale	1	The proposed action would replace distressed public family housing units with quality construction of urban-scale mixed-use residential and commercial development. The new development would include ground floor rentable retail, and would be consistent with design standards for a dense, walkable central business district.
Demographic Character Changes	1	Under the disposition action, 140 units (24 vacant units and 116 occupied units) would be removed from the Federal public housing program. Current tenants would be allowed to fulfill their lease and may receive relocation vouchers following the disposition and demolition of Mill. Lease-compliant residents would be allowed right of return to replacement units located either directly on the project site or within walking distance of the project site. Some current residents may choose to relocate from the immediate project area. Nevertheless the planned replacement in kind of all PBVs, and the addition of new affordable and market rate residential housing units will minimize long-term residential displacement, and limit changes to the demographic character of the neighborhood. The project would not result in a significant adverse impact to the area's demographic character.

Socioeconomic	Code	Source or Documentation
Displacement	1	Under the disposition action, 140 units (24 vacant units and 116 occupied units) would be removed from the Federal public housing program. Current tenants would be allowed to fulfill their current lease terms. Assuming that tenants remaining lease-compliant for the duration of these terms, they would be guaranteed right of return to new quality housing located either directly at the project site, or within close proximity to the project site. Residents will be allowed to select housing based on bedroom type, housing type, and locational preference. While the project entails relocation of current Mills tenants, the City's HUD Choice Plan is designed to limit the temporal extent of displacement.
Employment and Income Patterns	1	The proposed action would therefore not result in significant adverse impacts associated with employment and income patterns.

Community Facilities and Services	Code	Source or Documentation
Educational Facilities	1	Under the disposition action, 140 units (24 vacant units and 116 occupied units) would be removed from the Federal public housing program. A small number of school-aged children may relocate out of the immediate area over several years; however, that would not cause a significant impact on educational facilities.
Commercial Facilities	1	The proposed action would not introduce new commercial uses or have an adverse effect on existing commercial uses in the area.
Health Care	1	As part of the disposition, the relocation of residents may occur in the long term. However, this is not expected to result in a noticeable change in the demand on local health care services, and a significant impact is not expected as a result.
Social Services	1	As part of the disposition, the relocation of residents may occur in the long term. However, this is not expected to result in a noticeable change in the demand on social services, and a significant impact is not expected as a result.
Solid Waste	1	As part of the disposition, the relocation of residents may occur in the long term. Reduction in solid waste generation would occur as a result of the proposed project. No significant impact is expected as a result of proposed action.
Waste Water	1	The proposed action would not adversely affect Meriden's waste water conveyance system or treatment facilities. Waste water would continue to be handled by the Water Pollution Control Facility Division. The proposed action would not result in increased demand for sewage disposal or treatment, and no impacts would occur.
Storm Water	1	The proposed action would not adversely affect Meriden's storm water system. No increase in the amount of impervious surface would occur on the project site as a result of the proposed action.
Water Supply	1	The proposed action would not adversely affect Meriden's water supply.
Public Safety - Police	1	There would be no impact on police services due to the proposed action. Police protection services are provided by the Meriden Police Department, and the station nearest to the project site is located at 50 West Main Street.

- Fire	1	There would be no impact on fire services due to the proposed action. Fire protection services are provided by the Meriden Fire Department, and the station nearest to the project site is located at 50 West Main Street.
- Emergency Medical	1	The proposed action would not result in increased demand on emergency medical services. The Midstate Medical Center provides emergency medical services and is located approximately one mile northwest of the project site.

Community Facilities and Services	**Code**	**Source or Documentation**
Open Space and Recreation - Open Space	1	The proposed action would not result in the removal of landscaped areas on the project site. Included as part of this proposal is the transfer of an open space resource by the City to the MHA to complete the parcel assembly. Featuring both active and passive recreation elements, Cedar Park is 1.6 acres of public open space. The change in land use at 62 Cedar Street from open space to development is allowed under the TOD zoning ordinance. However, under the current proposed action, this open space would remain in its current state and its use would not change. Meriden Green includes 11 acres of public open space that became available to the public starting on September 9, 2016. No new residents would be introduced as part of the proposed action and the relocation of residents may occur over a long period, therefore, utilization rates of the open space are not expected to change as a consequence. Therefore, the proposed action would not result in a significant adverse impact to any open space resource.
- Cultural Facilities	1	The proposed action would not adversely affect cultural facilities.
Transportation	1	As there may be a minor reduction in residents over time as a result of the proposed disposition, a slight decrease in traffic volumes, pedestrian volumes, transit ridership and parking demand may occur. However, significant impacts to any of these conditions would not occur. The project site is bound to the north by Park Street, to the west by State Street and Mill Street, to the east by Cedar Street, and to the south by Pratt Street. U.S. Interstate 691, which is classified by the Connecticut Department of Transportation as a Principal Arterial roadway, runs several blocks north of the project site. To the southeast of the project site, Pratt Street and State Street to the west of the project site are classified as Collector roadways. All other streets surrounding the project site are classified as local roadways. Several bus lines are found within close proximity to the project site. The "A", "B" and "C" lines, operated by North East Transportation and "M" line, operated by Middletown Area Transit, run on State Street directly west of the project site, with the "M" bus offering regional service to Middletown and Cromwell. CTtransit operates the "C" bus line along Broad Street, which runs north-south approximately ½-mile east of the project site. Additional bus lines are operated throughout Meriden and the region. Less than ¼ -mile southwest of the project site is the Meriden Amtrak Station. In addition ample on-street parking is found throughout the study area. As additional residents or employees would not be generated by the proposed action, increased parking demand is not projected to occur. Similarly, pedestrian elements such as sidewalks and crosswalks would not be altered under the proposed action.

Natural Features	Code	Source or Documentation
Water Resources	1	The proposed project would not result in a significant effect on water resources, including groundwater and surface water. A portion of the project site lies over Harbor Brook, which is a low gradient stream that flows through an underground culvert beneath a portion of the project site, but not the residential structures, at 144 Mills Memorial. In addition, a portion of the project site is located within a Special Flood Hazard Area (SFHA) Zone AE, which is subject to inundation by the 1 percent annual chance flood. Based on surface topography, groundwater flow is assumed in a southwesterly direction towards Hanover Pond (Figure 3). The proposed action involves property disposition, parcel assembly, new construction, and allocation of PBVs. Future related activities include demolition of the structures for the purposes of implementing the Harbor Brook Flood Control Plan and daylighting Harbor Brook at the site. There would be no impacts to water resources as a part of this proposed action.
Surface Water	1	The proposed project would not result in a significant effect on surface water resources. The nearest surface water body is Harbor Brook, which flows through an underground culvert beneath a portion of the project site and is classified by CTDEEP as "B" surface water. Based on CTDEEP Water Quality Standards, "B" surface water is designed for recreational use, fish and wildlife habitat, agricultural and industrial supply and other legitimate uses including navigation. Stormwater catch basins were observed in various areas throughout the exterior portions of the site. These catch basins are believed to discharge to Harbor Brook. Figure 6 shows the Water Quality Classification Map for City of Meriden. There would be no additional discharge to nearby surface water.
Unique Natural Features and Agricultural Lands	1	There are no unique natural features or agricultural lands near the project site. Therefore, the proposed action would have no impact on such resources.
Vegetation and Wildlife	1	The project site and its immediate surroundings are occupied by buildings, paved areas or landscaped areas. There are no significant plant or animal species, including any State or Federally listed threatened or endangered species, occupying the project site or the surrounding neighborhood. No significant impacts to vegetation or wildlife would result from the proposed action.

NOTE: The Responsible Entity must additionally document compliance with 24 CFR §58.6 in the ERR, particularly with the Flood Insurance requirements of the Flood Disaster Protection Act and the Buyer Disclosure requirements of the HUD Airport Runway Clear Zone/Clear Zone regulation at 24 CFR 51 Subpart D.

Summary of Findings and Conclusions

The proposed action is part of Meriden Housing Authority's initiative to take advantage of development opportunities on vacant and underutilized land, as these properties provide significant opportunities to create new affordable housing and other amenities that can benefit Meriden residents. The proposed action includes the property disposition, parcel assembly, new construction, and allocation of 26 Project Based Vouchers for future development of the site.

The future plans for the project site would include demolition of five residential buildings to facilitate construction of a flood control plan (at 144 Mills Memorial) and development of the Meriden Green (former HUB Site) and the Mills Megablock site (located at 161-177 State Street and 62 Cedar Street). The project was conceived within the context of the current administration's proposed Choice

Neighborhoods Initiative (CNI), which is predicated upon a holistic approach to revitalizing communities through close connections among housing, educational opportunities, and wraparound services.

The proposed action would not adversely affect the character, features and resources of the surrounding area, and would not result in a significant impact on the quality of the human environment. No potential adverse impacts are expected as a result of this project. Mitigation as part of the proposed action would therefore not be required through the Request for Release of Funds.

ALTERNATIVES TO THE PROPOSED ACTION

Alternatives and Project Modifications Considered [24 CFR 58.40(e), Ref. 40 CFR 1508.9]

(Identify other reasonable courses of action that were considered and not selected, such as other sites, design modifications, or other uses of the subject site. Describe the benefits and adverse impacts to the human environment of each alternative and the reasons for rejecting it.)

No other reasonable alternatives were considered or selected for the proposed action. Upon successful disposition and parcel acquisition, additional discretionary actions will be pursued that will involve demolition and/or construction on the project site as part of Meriden HUD Choice Plan. Several other development alternatives were considered, but ultimately not selected by the community and development team because of an inability in these scenarios to mitigate flooding caused by Harbor Brook that runs directly under Mills, high cost of modernization of the existing units and lack of suitable sites with access to services/transit.[7]

No Action Alternative [24 CFR 58.40(e)]

(Discuss the benefits and adverse impacts to the human environment of not implementing the preferred alternative).

Under the No Action Alternative, the proposed disposition of Mills would not be pursued. The one low-rise and two high-rise residential structures at the Mills Memorial Housing complex would remain within the Federal public housing program. Additionally, the City would not transfer to the MHA the parcels at 62 Cedar Street and 177 State Street to complete the parcel assembly necessary for redevelopment. In the absence of these actions, it is assumed that the project site would remain in its current state, which includes 140 federal family public housing units that are currently in poor condition and that are considered to be obsolete in terms of their design. The no action alternative would also retain a City owned parking lot at 177 State Street, as well as an open space at 62 Cedar Street. The ownership and management of the parcels would remain the same.

While there would be no adverse impacts to human health and the environment under the No Action Alternative, the City would forego an opportunity to replace distressed housing with more contextually appropriate mixed-use development that included quality affordable housing. The concurrent disposition of municipal land to facilitate parcel assembly by MHA would also not be achievable in this scenario, and the project purpose and need would not be achieved. No action means that all existing units remain within a 100-year floodplain that has a history of frequent flooding or negative impact on the households and housing due to mildew and soil erosion risks.

Mitigation Measures Recommended [24 CFR 58.40(d), 40 CFR 1508.20]

(Recommend feasible ways in which the proposal or external factors relating to the proposal should be modified in order to eliminate or minimize adverse environmental impacts.)

Disposition, parcel assembly, new construction and the allocation of 26 PBVs will results in no adverse environmental impacts. Therefore, no mitigation measures are required to ensure there are no significant impacts, and none is recommended in the assessment.

[7] http://www.meriden2020.com/Customer-Content/www/CMS/files/Exhibitsfile.pdf

Additional Studies Performed

Phase I Environmental Site Assessment (ESA), 62 Cedar Street, Meriden CT, Tighe & Bond, April 2012.

Phase I Environmental Site Assessment (ESA), 177 State Street, Meriden CT, AECOM, November 2015.

Phase I Environmental Site Assessment (ESA), 144 Pratt Street, Meriden CT, Tighe & Bond, June 2012.

Phase I Environmental Site Assessment (ESA), 161 State Street, Meriden CT, Tighe & Bond, April 2012.

Phase II Environmental Site Assessment (ESA), 161 State Street, Meriden CT, Tighe & Bond, December 2012.

Phase III Environmental Site Assessment (ESA), 161 State Street, Meriden CT, AECOM, March 2016.

Phase III Environmental Site Assessment (ESA), 177 State Street, Meriden CT, AECOM, March 2014.

Hazardous Materials Building Assessment High Rise 1, AECOM, October 2015.

Hazardous Materials Building Assessment High Rise 2, AECOM, October 2015.

Hazardous Materials Building Assessment Low Rise 1, AECOM, October 2015.

Hazardous Materials Building Assessment Low Rise 2, AECOM, October 2015.

Hazardous Materials Building Assessment Low Rise 3, AECOM, October 2015.

List of Sources, Agencies and Persons Consulted [40 CFR 1508.9(b)]

HUD Exchange "Environmental Assessment Determinations and Compliance Findings for HUD-assisted Projects 24 CFR Part 58". https://www.hudexchange.info/resource/3140/part-58-environmental-assessment-form/. Accessed July 26, 2016

HUD Exchange "Additional Factors to Consider for Environmental Assessments". https://www.hudexchange.info/resource/3895/additional-factors-to-consider-in-an-environmental-assessment/. Accessed July 26, 2016.

United States Census Factfinder. http://www.census.gov/quickfacts/table/PST045215/09,09009,0946450,00. Accessed August 3, 2016.

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A County Report of Connecticut's Endangered, Threatened and Special Concern. http://www.ct.gov/deep/lib/deep/endangered_species/species_listings/newhavenctyspecies.pdf. Accessed August, 3 2016.

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City of Meriden, Zoning Map. http://gis.meridenct.gov/website/StaticMaps/ZoningMap.pdf. Accessed August 3, 2016.

Meriden Biz, City of Meriden Economic Development, Presentation "Demolition and Remediation of 144 Mills Memorial, Meriden, CT, January 2016". http://www.meridenbiz.com/Customer-Content/www/CMS/files/Presentation_1-19-2016_144_Mills_remediation_FINAL3.pdf. Accessed August 1, 2016

Meriden Biz, City of Meriden Economic Development, http://www.meriden2020.com/Customer-Content/www/CMS/files/Exhibitsfile.pdf. Accessed August 3, 2016

Meriden Biz, City of Meriden Economic Development, http://www.meriden2020.com/Customer-Content/www/CMS/files/MeridenChoice_102015_transformation_plan_final_2.pdf. Accessed August 4, 2016

Meriden Biz, City of Meriden Economic Development,http://www.meriden2020.com/Downtown-Development/The-Meriden-HUB-Park-and-Flood-Control-Project/. Accessed on August 9, 2016

HUD Exchange "Floodplain Management and Protection of Wetlands" https://www.hudexchange.info/resource/3769/24-cfr-part-55-floodplain-management-and-protection-of-wetlands/. Accessed August 4, 2016

Harbor Brook Flood Control and Linear Trail Project Master Plan for Meriden, Ct. Prepared by GZA GeoEnvironmental, Inc. November, 2011.

Phase I Environmental Site Assessment (ESA), 62 Cedar Street, Meriden CT, Tighe & Bond, April 2012.

Phase I Environmental Site Assessment (ESA), 177 State Street, Meriden CT, AECOM, November 2015.
Phase I Environmental Site Assessment (ESA), 144 Pratt Street, Meriden CT, Tighe & Bond, June 2012.

Phase I Environmental Site Assessment (ESA), 161 State Street, Meriden CT, Tighe & Bond, April 2012.

Phase II Environmental Site Assessment (ESA), 161 State Street, Meriden CT, Tighe & Bond, December 2012.

Phase III Environmental Site Assessment (ESA), 161 State Street, Meriden CT, AECOM, March 2016.

Phase III Environmental Site Assessment (ESA), 177 State Street, Meriden CT, AECOM, March 2014.

Hazardous Materials Building Assessment High Rise 1, AECOM, October 2015.

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Hazardous Materials Building Assessment Low Rise 1, AECOM, October 2015.

Hazardous Materials Building Assessment Low Rise 2, AECOM, October 2015.

Hazardous Materials Building Assessment Low Rise 3, AECOM, October 2015.

Other Requirements (Section 58.6) Checklist

PROJECT NAME **Meriden Mills Apartments Disposition and Related Parcel Assembly, Meriden CT**

In addition to the duties under the laws and authorities specified in 58.5 for assumption by Responsible Entities (REs) under the laws cited in 58.1(b), REs must comply with the following requirements. Applicability of the following requirements does not trigger the certification and release of funds procedure under this Part or preclude exemption of an activity under 58.34 (a) (12) and/or the applicability of 58.35(b). However, the RE remains responsible for addressing the following requirements in its Environmental Review Record (ERR) under 58.38 and meeting these requirements, where applicable, regardless of whether the activity is exempt under 58.34 or Categorically Excluded under 58.35 (a) or (b).

(a) Federal Flood Insurance Purchase Requirements (do not apply to funds from Federal formula grants made to a State).

(1) Does the project involve acquisition or construction (including rehabilitation) in a community identified by the Federal Emergency Management Agency (FEMA) as having special flood hazard areas (100 year and 500 year floodplains)? Yes **X** No If "Yes," go to (a)(2). If "No," go to Question (b).

(2) Is the project located in 100 year flood plain (500 year floodplain for "critical" actions*)? Yes **X** No _If "Yes," go to (a) (3). If "No," go to Question (b).

(3) Is the community in which the project is located (**X**) participating in the National Flood Insurance Program or, ( ) has less than a year passed since FEMA notified the community concerning such hazards. (Please check one of the above depending on the situation) Yes **X** No ___. If "Yes," attach a statement concerning how you will assure that flood insurance will be maintained in accordance with the "Flood Insurance Protection" guidance sheet attached to this Checklist and go to Question (b). The implementation of this project consistent with your statement must be made a condition on the environmental findings and recommendations for the project. If "No," project cannot be funded.

* As defined in the U.S. Water Resources Council's Floodplain Management Guidelines for Implementing Executive Order 11988.

See Attached Standard Flood Hazard Determination indicating that Federal Flood Insurance is available as part of the Regular Program.

(b) Coastal Barriers Resources

Is the project to be undertaken located in the Coastal Barrier Resources System, as amended by the Coastal Barrier Improvement Act of 1990 (16 U.S.C. 3501)?
Yes ___ No **__X_**. If "Yes," Federal financial assistance may not be provided. If "No," then go to Question (c).

(c) Projects located in Close Proximity to Airports Contained on the HUD list of 24 CFR Part 51D Covered Airports.

Does the project involve assistance, subsidy, or insurance for the purchase or sale of an existing property in a Runway Clear Zone or Clear Zone as defined in 24 CFR Part 51D? Yes ___ No **__X_** If "Yes," the buyer must be advised that the property is in a runway Clear Zone or Clear Zone, what the implications of such a location are, and then there is a possibility that the property may, at a later date, be acquired by the airport operator. The buyer must sign a statement acknowledging receipt of this information. The implementation of this requirement

must be made a condition in the environmental review findings and recommendations for this project.

Although Federal financial assistance would be used for acquisition of land within an area identified by the Federal Emergency Management Agency (FEMA) as having special flood hazards, financial assistance would not be provided to property owners under the proposed action (existing public housing units would be removed from the Federal public housing program and no new units would be constructed under the proposed action). The future action includes redevelopment of Mills Megablock. Under selected alternative Mills Megablock would be constructed outside the flood zone. For such a development, flood insurance protection funding would not be required.

Preparer Signature: Deborah Howes 4/11/17

Name/Title/Agency: Deborah Howes, AICP
Director of Community Planning, AECOM

Date

Attachment A

Determination of Applicability to 24 CFR 55: Floodplain Management and Protection of Wetlands

24 CFR Part 55, Floodplain Management, covers the proposed acquisition, construction, improvement, disposition, financing and use of properties located in a floodplain for which approval is required either from HUD under any applicable HUD program or from a grant recipient subject to 24 CFR part 58. The determination of applicability of the proposed action (Meriden Mills Apartments Disposition and Related Parcel Assembly) to the regulations is based on the following understanding:

- The proposed action includes proposed HUD financial assistance for acquisition purposes in an area having special flood hazards (i.e., 100-year floodplain, Zone AE).
- The action would not be located in a floodway or coastal high hazard area.
- The proposed action is not a "critical action" (i.e., activity for which even a slight chance of flooding might result in loss of life, injury to persons, or damage to property).
- The proposed action does not involve "substantial improvement" as defined in Part 55.2(b)(8).
- The community, the City of Meriden, does participate in the National Flood Insurance Program.

As defined in 24 CFR Part 55, Subpart B, Application of Executive Order on Floodplain Management, Executive Order 11988 does apply to the proposed action. The proposed action is a non-critical action that is not excluded under Section 55.12 (b) or (c) and a portion of the action would be located within a 100-year floodplain outside the high hazard area (see Table 1 in Section 55.11). Therefore, the decision-making process in Section 55.20 must be followed for the proposed action to be allowed. Per Section 55.12(a), since the proposed action is a HUD action involving disposition of HUD-acquired multifamily housing projects in a community that is in the Regular Program of the National Flood Insurance Program and in good standing, the decision-making steps 2, 3 and 7 do not apply. These involve notification of the public at the time the proposal is considered, identification and evaluation of practicable alternatives to locating the proposed action in a floodplain, and publication of a final, detailed notice of the proposal.

Following the decision-making process in Section 55.20, the proposed action does comply with 24 CFR Part 55.

- Step 1: The proposed action is located in a 100-year floodplain.
- Step 2: Not applicable
- Step 3: Not applicable
- Step 4: There would be no potential direct and indirect impacts associated with the occupancy of the floodplain under the proposed action since there would be no demolition, construction or soil disturbance on the project site. Development within and adjacent to the floodplain would remain in its current state.
- Step 5: There is no practicable design or modification to the proposed action that would minimize the potential adverse impacts within the floodplain or restore and preserve its natural and beneficial values. There are no adverse impacts within the floodplain as a result of the proposed action; therefore, no modification is necessary.
- Step 6: Reevaluation of the proposed action determined that the proposed action is still practicable since it would not result in flood hazards in the floodplain, aggravate the current hazards to other floodplains, or disrupt floodplain values.
- Step 7: Not applicable
- Step 8: Decision-making is complete and the proposed action may be implemented, with no mitigating measures required.

FIGURES

FIGURE 1: PROJECT LOCATION

LEGEND

Parcel Boundaries

Stream Edge

N

0 50 100 150

Feet

NOTE: Aerial image dated 2016 (CTECO)

AECOM

Figure 1

PROJECT LOCATION
ENVIRONMENTAL PLANNING
ASSESSMENT

DRAWN BY:	REVIEWED BY:	APPROVED BY:	REVISION NUMBER:
HARED1			REV. 0

MERIDEN

DATE:	DEPT:
4/4/2017	BASEMAP FOR MERIDEN MEGA-BLOCK

FIGURE 2: MERIDEN ROADWAY FUNCTIONAL CLASS MAP

Ref: http://www.ct.gov/dot/lib/dot/documents/dpolicy/policymaps/fcl/pdf/079fcl.pdf

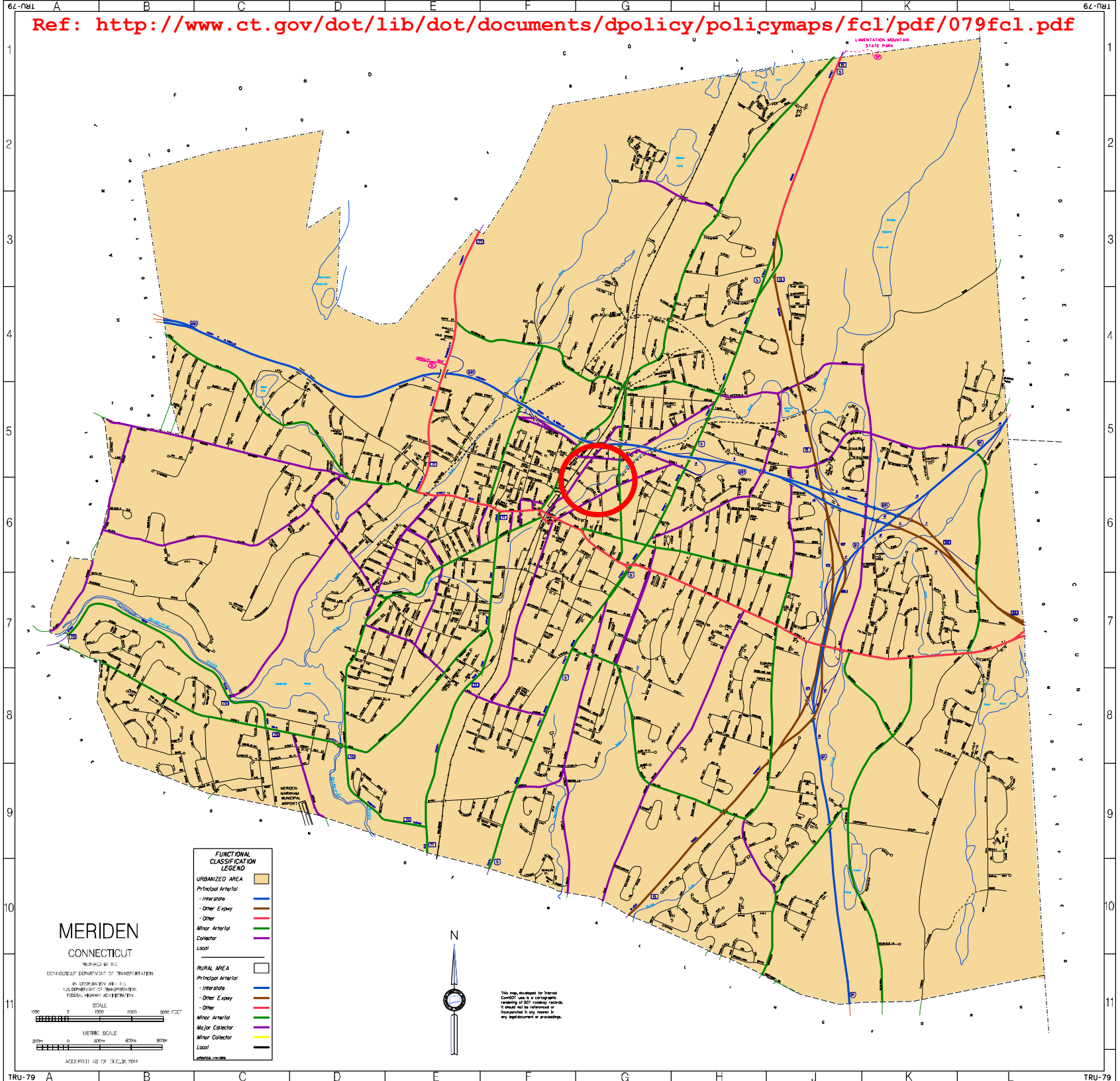
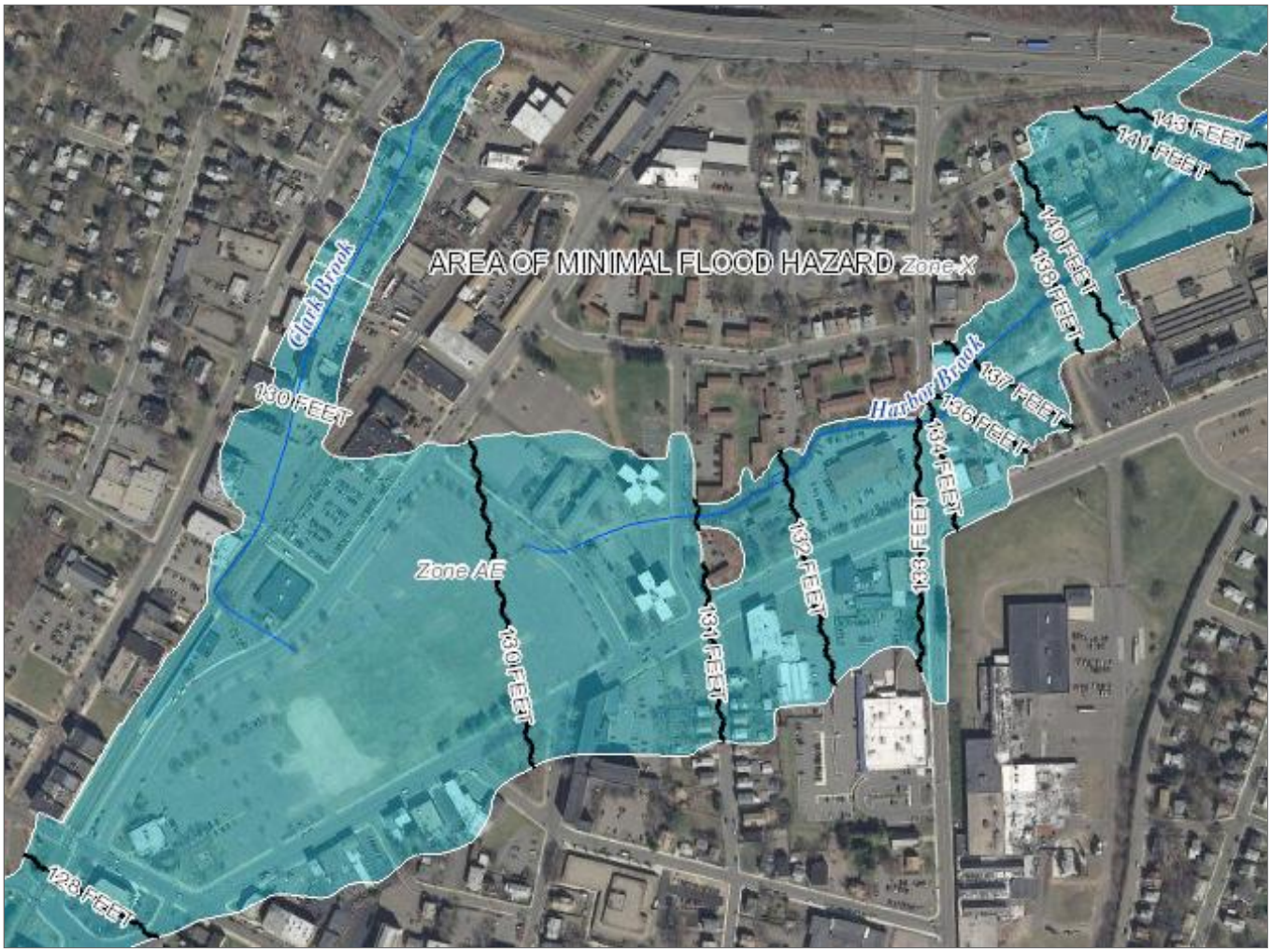


FIGURE 3: FEMA FLOOD INSURANCE RATE MAP

FEMA's National Flood Hazard Layer (Official)

Data from Flood Insurance Rate Maps (FIRMs) where available digitally. New NFHL FIRMette Print app available: http://tinyurl.com/j4xwp5e



National Geospatial-Intelligence Agency (NGA); Delta State University; Esri | scott.mcafee@fema.dhs.gov

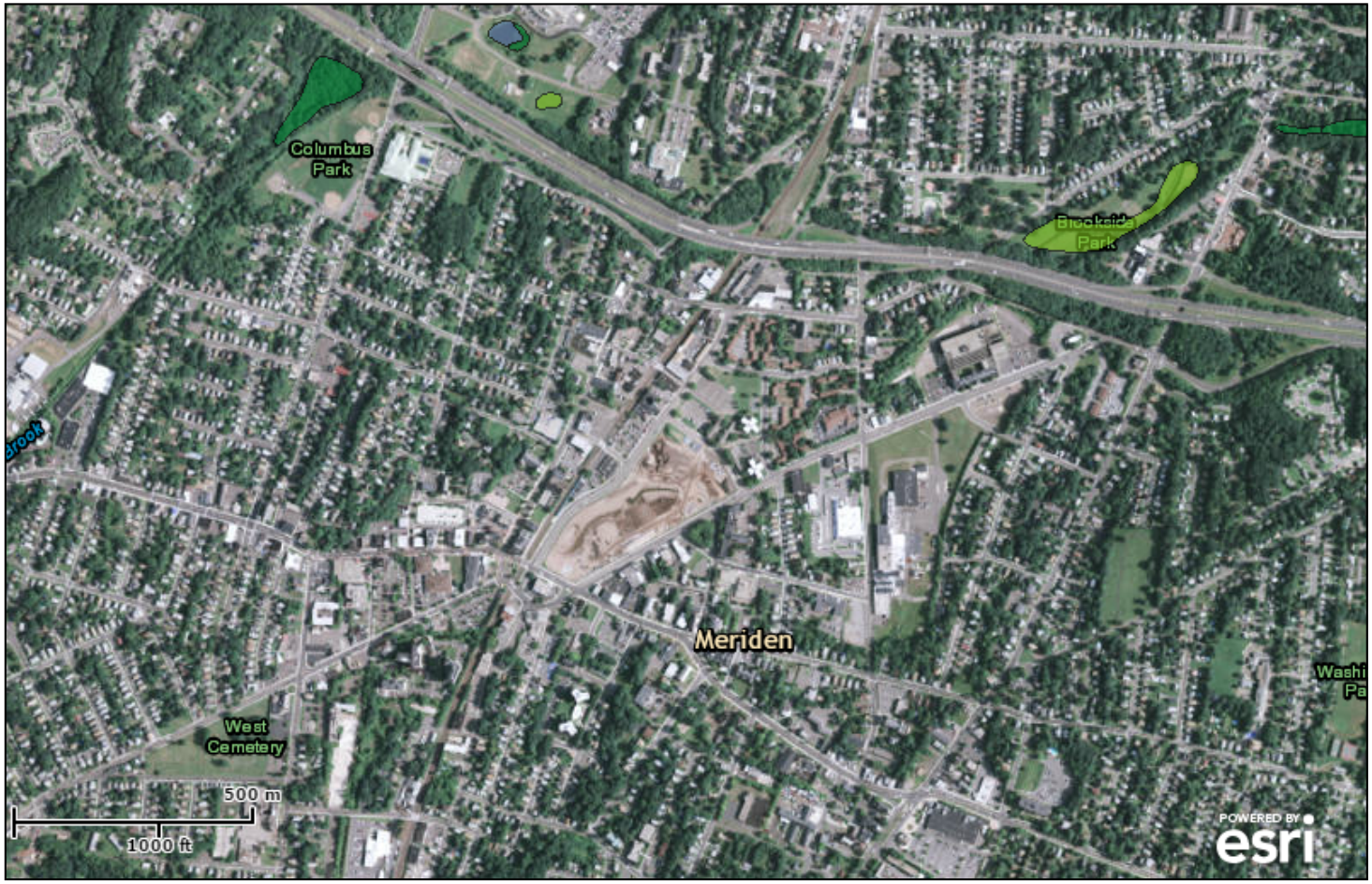
FIGURE 4: NATIONAL WETLANDS INVENTORY MAP

U.S. Fish and Wildlife Service

National Wetlands Inventory

Wetland Map

Jul 28, 2016



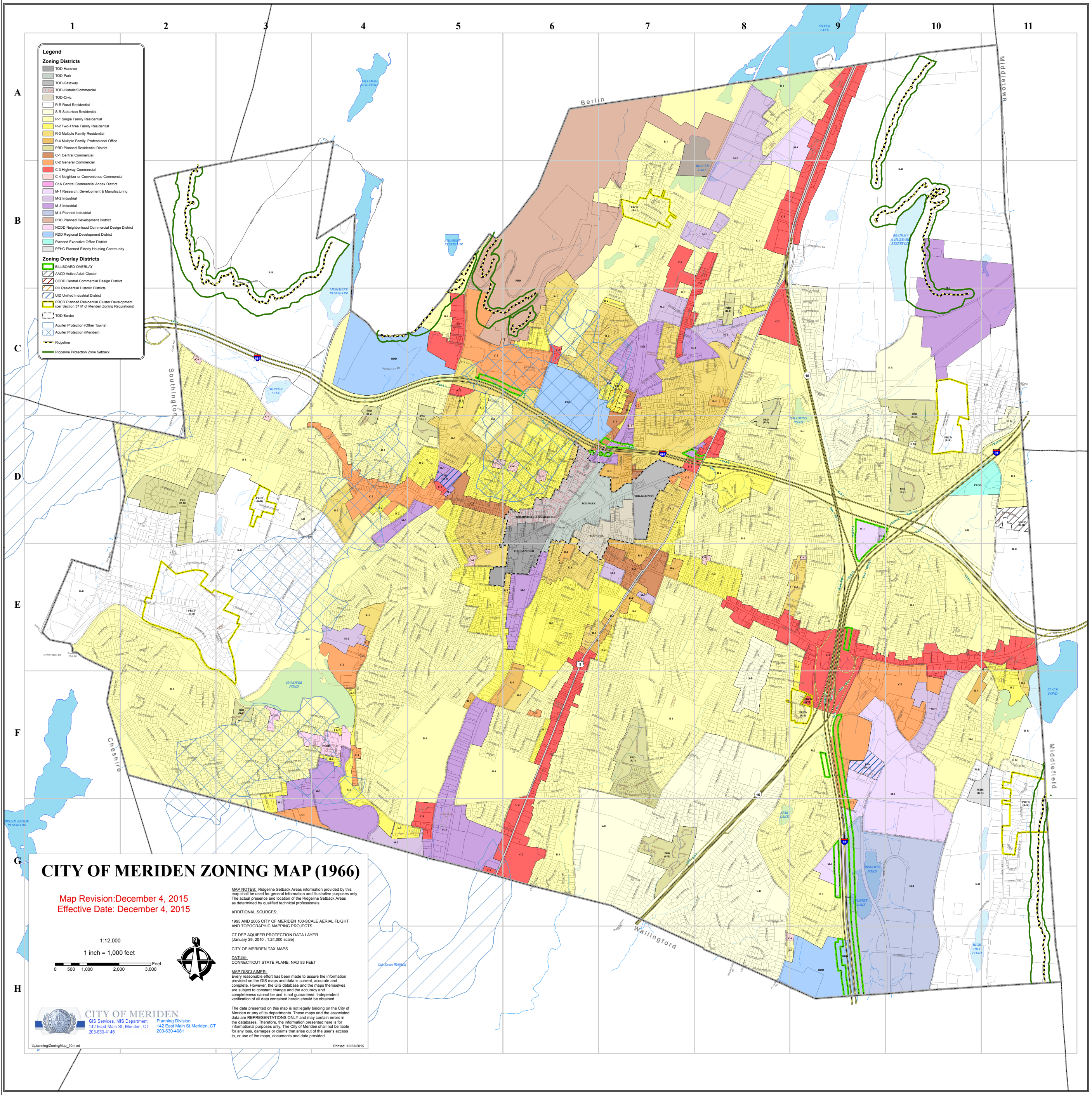
Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

FIGURE 5: CITY OF MERIDEN ZONING MAP



CITY OF MERIDEN ZONING MAP (1966)

Map Revision:December 4, 2015
Effective Date: December 4, 2015

MAP NOTES: Ridgeline Setback Areas information provided by this map shall be used for general information and illustrative purposes only. The actual presence and location of the Ridgeline Setback Areas as determined by qualified technical professionals.

ADDITIONAL SOURCES:

1995 AND 2005 CITY OF MERIDEN 100-SCALE AERIAL FLIGHT AND TOPOGRAPHIC MAPPING PROJECTS

CT DEP AQUIFER PROTECTION DATA LAYER (January 29, 2010 , 1:24,000 scale)

CITY OF MERIDEN TAX MAPS

DATUM:
CONNECTICUT STATE PLANE, NAD 83 FEET

MAP DISCLAIMER:
Every reasonable effort has been made to assure the information provided on the GIS maps and data is current, accurate and complete. However, the GIS database and the maps themselves are subject to constant change and the accuracy and completeness cannot be and is not guaranteed. Independent verification of all data contained herein should be obtained.

The data presented on this map is not legally binding on the City of Meriden or any of its departments. These maps and the associated data are REPRESENTATIONS ONLY and may contain errors in the databases. Therefore, the information presented here is for informational purposes only. The City of Meriden shall not be liable for any loss, damages or claims that arise out of the user's access to, or use of the maps, documents and data provided.

CITY OF MERIDEN, CONNECTICUT

FIGURE 6: CITY OF MERIDEN WATER QUALITY CLASSIFICATION MAP

WATER QUALITY CLASSIFICATIONS
MERIDEN, CT

SURFACE WATER QUALITY CLASSES

A	A
AA	AA
B, B*	B, B*
SA	SA
SB	SB

NOTES:
Surface Water Classifications beginning with S refer to Coastal and Marine Surface Water.
B* is a subset of Class B where no direct wastewater discharges are allowed other than those consistent with Class AA, A and SA surface waters.

GROUND WATER QUALITY CLASSES

GA (white background)
GAA, GAAs
GA, GAA may not meet current standards
GB
GC

Area of Contribution to Public Supply Well

Final Aquifer Protection Area (Level A)
Major Basin Boundary

EXPLANATION

WATER QUALITY CLASSIFICATIONS (WQC) MAPS are one of the elements of the Water Quality Standards (WQS) for the State of Connecticut. The WQS are a part of Connecticut's clean water program and are essential for protecting and improving water quality. The WQS follow the principles of Connecticut's Clean Water Act which is in Chapter 446K of the Connecticut General Statutes. The WQS provide policy guidance in many areas, for example decisions on acceptable discharges to water resources, siting of landfills, remediation or prioritization of municipal sewerage system projects. The first two elements of the WQS are the Standards, which set an overall policy for management of water quality, and the Criteria, which are descriptive and numerical standards that describe the allowable parameters and goals for various water quality classifications. A discussion of these two elements is found in the Water Quality Standards document available on the CT DEEP website. The third element is the Classifications and the Water Quality Classification Maps which show the Classification assigned to each surface and groundwater resource throughout the State. The WQS are adopted using a public participation process. The WQC maps are also adopted using a public participation process but go through hearings separately from the Standards and Criteria hearings. Revision and adoption of the WQC data occurs in accordance with the public participation procedures contained in Section 22a-426 of the Connecticut General Statutes. Ground WQC is subject to Connecticut regulation and changes must be reviewed and adopted. All changes to the Surface WQC require an adoption process which is subject to federal review and approval in addition to CT regulation. The adoption dates for the WQC by major drainage basin are: Housatonic River, Hudson River and Southwest Coastal Basins - March 1999; Connecticut River and South Central Coastal Basins - February 1993; Thames River, Pawcatuck River and Southeast Coastal Basins - December 1986. Surface Water Classifications do not change after the adoption date until the next major revision. Ground Water Classifications may change after the adoption date under specific circumstances. The map may have more than one WQC adoption date because a town may be in more than one major drainage basin.

SURFACE WATERS in Connecticut are divided into freshwater classified as AA, A, B or B* and saline waters classified as SA or SB. Class AA designated uses are existing or proposed drinking water supplies; habitat for fish and other aquatic life and wildlife; recreation; and water supply for industry and agriculture. Class A designated uses are habitat for fish and other aquatic life and wildlife; potential drinking water supplies; recreation; navigation; and water supply for industry and agriculture. Class SA designated uses are habitat for marine fish, other aquatic life and wildlife; shellfish harvesting for direct human consumption; recreation; industrial water supply; and navigation. Class B designated uses are habitat for fish and aquatic life and wildlife; recreation; navigation; and industrial and agricultural water supply. Class B*, applicable to Candlewood Lake, is a subset of Class B and is identical in all ways to the designated uses, criteria and standards for Class B waters except for the restriction on direct discharges. Class SB designated uses are habitat for marine fish and aquatic life and wildlife; commercial shellfish harvesting; recreation; industrial water supply; and navigation.

Surface waters which are not specifically classified shall be considered as Class A or Class AA. Surface waters in GA ground water areas are assumed Class A or Class SA unless otherwise indicated. Surface waters in GAA ground water areas are assumed Class AA unless otherwise indicated.

On the WQC map a surface water quality goal of A is represented by blue colored water bodies. Surface water quality goal of AA is represented by purple colored water bodies. Surface water quality goal of B is represented by gold colored water bodies.

GROUND WATERS in Connecticut are classified as GAA, GA, GB and GC. Class GAA designated uses are existing or potential public supply of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies. The Class GAAs is a subclass of GAA for ground water that is tributary to a public water supply reservoir. The area of contribution to a public water supply well is represented by a 500-foot radius around the well and is assumed to be Class GAA unless otherwise classified. Class GA designated uses are existing private and potential public or private supplies of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies. All ground waters not specifically classified are considered as Class GA. Class GB designated uses are industrial process water and cooling waters and baseflow for hydraulically-connected water bodies and is presumed not suitable for human consumption without treatment. Class GC designated uses are assimilation of discharges authorized by the Commissioner pursuant to Section 22a-430 of the General Statutes.

On the WQC map GA is represented by white colored land areas. Class GAA and class GAAs are represented by blue colored land areas. The area of contribution to a public water supply well is shown by a blue cross-hatch overprint. A notation of GAA followed by a state abbreviation indicates a watershed that contributes to the public water supply for a state other than Connecticut. Class GA or Class GAA areas that currently may not be meeting the GA or GAA standards are represented on the WQC maps by tan colored land areas. Class GB is represented by green colored land areas. Class GC is represented by magenta colored land areas.

FINAL AQUIFER PROTECTION AREAS (Level A) are included on the WQC maps for informational purposes. These areas are anticipated to be reclassified GAA during the next major basin updates, subject to public participation. The Aquifer Protection Program helps protect Connecticut's public drinking water resources by delineating aquifer protection areas (also called wellhead protection areas) for public supply wells and establishing land use regulations within these areas. These areas represent the land area contributing ground water to active public water supply wells or well fields that serve more than 1000 people and are set in sand and gravel aquifers (stratified drift deposits).

DATA SOURCES

WATER QUALITY CLASSIFICATIONS DATA – Water quality classifications shown on this map are based on information from the following digital spatial datasets that are typically shown together – Ground Water Quality Classifications Poly, Surface Water Quality Classifications Line, and Surface Water Quality Classifications Poly. The map legend above reflects the content of these three data sources. These WQC data were initially compiled on 1:24,000-scale 7.5 minute USGS topographic quadrangle maps and later digitized at 1:24,000 scale. For example, the Surface Water Quality Classifications Line and Surface Water Quality Classifications Poly digital data assigns surface water quality classifications to water bodies such as rivers, streams, reservoirs, lakes, ponds and coves found in 1:24,000-scale hydrography data available from CT DEEP. The hydrography may not include all the waterbodies in Connecticut. The Ground Water Quality Classifications Poly data assigns ground water quality classifications, at 1:24,000 scale, to the remaining land areas in Connecticut.

AQUIFER PROTECTION AREA DATA – Aquifer Protection Areas shown on this map are from the Aquifer Protection Area digital dataset which contains polygon data intended to be used at 1:24,000 scale. The dataset contains regulated areas classified as Level A Aquifer Protection Area (Final) and Level B Aquifer Protection Area (Preliminary). The Level B areas are not shown on the WQC maps. The data was collected from 1991 to the present and is actively updated as Final area mapping replaces earlier Preliminary areas. The Aquifer Protection Areas are delineated by the individual water companies owning the well fields and submitted to the CT DEEP for approval. Preliminary mapping provides a general estimate of the area contributing ground water to the well field. Final mapping is based on extensive, site-specific, detailed modeling of the ground water flow system. CT DEEP may adjust Final area boundaries to be consistent with 1:24,000 scale topography and base map data where appropriate during the approval process.

MAJOR DRAINAGE BASIN DATA – Major drainage basins shown on this map are from Major Basin 1:24,000 data developed by CT DEEP and intended to be used at 1:24,000 scale.

BASE MAP DATA - Based on data originally from 1:24,000-scale USGS 7.5 minute topographic quadrangle maps published between 1969 and 1992. It includes political boundaries, railroads, airports, hydrography, geographic names and geographic places. Streets and street names are from Tele Atlas® copyrighted data. Base map information is neither current nor complete.

RELATED INFORMATION
This map is intended to be printed at its original dimensions in order to maintain the 1:24,000 scale (1 inch = 2000 feet).
WATER QUALITY STANDARDS - Go to the CT DEEP website for a summary and the full text of the "Water Quality Standards" and for other information on water quality.
AQUIFER PROTECTION AREAS - Go to the CT DEEP website for more information.

ADOPTED DATES

Water Quality Standards
February 25, 2011

Thames River, Pawcatuck River and Southeast Coastal Basins: December 1986

Connecticut River and South Central Coastal Basins: February 1993

Housatonic River, Hudson River and Southwest Coastal Basins: March 1999

MAJOR BASINS
1 Pawcatuck
2 Southeast Coast
3 Thames
4 Connecticut
5 South Central Coast
6 Housatonic
7 Southwest Coast
8 Hudson

State Plane Coordinate System of 1983, Zone 3526
Lambert Conformal Conic Projection
North American Datum of 1983

SCALE 1:24,000 (1 inch = 2000 feet) when map is printed at original size

STATE OF CONNECTICUT
DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION
79 Elm Street
Hartford, CT 06106-5127

Map created by CT DEEP
November 2015

Map is not colorfast
Protect from light and moisture

ROCKY HILL
CROMWELL
BERLIN
SOUTHINGTON
MIDDLETOWN
MERIDEN
MIDDLEFIELD
CHESHIRE
WALLINGFORD
DURHAM
HAMDEN

Appendix A

GENERAL CONFORMITY RULE APPLICABILITY ANALYSIS

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Clean Air Conformity

The 1990 amendments to the Clean Air Act (CAA) require federal agencies to ensure that their actions conform to the appropriate State Implementation Plan (SIP) in a nonattainment area. The SIP provides for implementation, maintenance, and enforcement of the National Ambient Air Quality Standards (NAAQS); it includes emission limitations and control measures to attain and maintain the NAAQS. Conformity to a SIP, as defined in the CAA, means conformity to a SIP's purpose of reducing the severity and number of violations of the NAAQS to achieve attainment of the standards. The federal agency responsible for a proposed action is required to determine if its proposed action conforms to the applicable SIP.

The US Environmental Protection Agency (USEPA) has developed two sets of conformity regulations; federal actions are differentiated into transportation projects and non-transportation-related projects:

- Transportation projects, which are governed by the "transportation conformity" regulations (40 CFR Parts 51 and 93), effective on December 27, 1993 and revised on August 15, 1997.

- Non-transportation projects, which are governed by the "general conformity" regulations (40 CFR Parts 6, 51 and 93) described in the final rule for *Determining Conformity of General Federal Actions to State or Federal Implementation Plans* published in the *Federal Register* on November 30, 1993. The general conformity rule became effective January 31, 1994 and was revised on March 24, 2010.

This general conformity applicability analysis is prepared as an appendix to the environmental assessment (EA) for the Meriden Mills housing development in the City of Meriden, which is located in New Haven County, Connecticut. Since the proposed action requires funding and approval from US Department of Housing and Urban Development (HUD) and is a non-transportation project, only the general conformity rule applies.

General Conformity

Attainment and Nonattainment Areas

The general conformity rule applies to federal actions occurring in air basins designated as nonattainment for the NAAQS or in attainment areas subject to maintenance plans (maintenance areas). Federal actions occurring in air basins that are in attainment with the NAAQS are not subject to the conformity rule.

A criterion pollutant is a pollutant for which an ambient air quality standard has been established under the CAA. The designation of nonattainment is based on the exceedances or violations of the air quality standard. A maintenance plan establishes measures to control emissions to ensure the air quality standard is maintained in areas that have been re-designated as attainment from a previous nonattainment status.

Under the requirements of the 1970 Clean Air Act (CAA), as amended in 1977 and 1990, the USEPA established NAAQS for six criteria pollutants: carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), inhalable particulate matter (PM_{10} and $PM_{2.5}$), and lead (Pb).

Areas that meet the NAAQS for a criterion pollutant are designated as being in "attainment"; an area where a pollutant level exceeds the corresponding NAAQS is designated as being in "nonattainment." O_3 nonattainment areas are subcategorized based on the severity of their pollution problem (marginal, moderate, serious, severe, or extreme). PM_{10} and CO nonattainment areas are classified as moderate or

serious. When insufficient data exist to determine an area's attainment status, it is designated unclassifiable (or in attainment).

The Meriden Mills housing development project would take place within the City of Meriden, Connecticut. The City is currently designated as a moderate nonattainment area for 8-hour O_3, a maintenance area for $PM_{2.5}$, and an attainment area for the other criteria pollutants. O_3 is principally formed from nitrogen oxides (NO_x) and volatile organic compounds (VOC) through chemical reactions in the atmosphere.

De Minimis *Emissions Levels*

To focus general conformity requirements on those federal actions with the potential to have significant air quality impacts, threshold (*de minimis*) rates of emissions were established in the final rule. A formal conformity determination is required when the annual net total of direct and indirect emissions from a federal action occurring in a nonattainment or maintenance area for a criterion pollutant would equal or exceed the annual *de minimis* level for that pollutant. Table 1 lists the *de minimis* levels for each pollutant.

For O_3 nonattainment areas, USEPA's conformity rules establish *de minimis* emission levels for both O_3 precursors, VOC and NO_x, on the presumption that VOC and NO_x reductions will contribute to reductions in O_3 formation. Since the project site is located in an O_3 moderate nonattainment area in an O_3 transport region and a maintenance area for $PM_{2.5}$, the *de minimis* levels of 100 tons per year (tpy) of NO_x and $PM_{2.5}$, and 50 tpy of VOC apply.

Table 1
***De Minimis* Emission Levels for Criteria Air Pollutants**

Pollutant	Nonattainment Designation	Tons/Year
Ozone*	Serious	50
	Severe	25
	Extreme	10
	Other nonattainment or maintenance areas outside ozone transport region	100
	Marginal and moderate nonattainment areas inside ozone transport region	50/100**
Carbon Monoxide	All	100
Sulfur Dioxide	All	100
Lead	All	25
Nitrogen Dioxide	All	100
Particulate Matter ≤ 10 microns	Moderate	100
	Serious	70
Particulate Matter ≤ 2.5 microns***	All	100

Notes:
* Applies to ozone precursors – volatile organic compounds (VOC) and nitrogen oxides (NO_x).
** VOC/NO_x; *** Applies to PM2.5 and its precursors.

Analysis

This CAA General Conformity Rule (GCR) analysis was conducted according to the guidance provided by *40 CFR Parts 6, 51, and 93. Determining Conformity of Federal Actions to State or Federal Implementation Plans,* (USEPA, November 30, 1993 and March 24, 2010).

The analysis was performed to determine whether a formal conformity analysis would be required for the proposed action. Pursuant to the GCR, all reasonably foreseeable emissions (both direct and indirect) associated with the project implementation were quantified and compared to the applicable annual *de minimis* levels to determine potential air quality impacts.

The conformity analysis for a federal action examines the impacts of the direct and indirect net emissions from mobile and stationary sources. Direct emissions are emissions of a criterion pollutant or its precursors that are caused or initiated by a federal action and occur at the same time and place as the action. Indirect emissions, occurring later in time and/or further removed in distance from the action itself, must be included in the determination if both of the following apply:

- The federal agency can practicably control the emissions and has continuing program responsibility to maintain control.

- The emissions caused by the federal action are reasonably foreseeable.

Increased direct and indirect NO_x, VOC, and $PM_{2.5}$ would result from the following potential demolition and construction activities:

- Use of diesel and gas-powered demolition and construction equipment.
- Movement of trucks containing construction and removal materials.
- Commuting of construction workers.

Emissions Determination

The GCR requires that potential emissions generated by any project-related activity and/or increased operational activities be determined on an annual basis and compared to the annual *de minimis* levels for those pollutants (or their precursors) for which the area is classified as nonattainment or maintenance. Emissions attributable to activities related to the proposed action were analyzed for NO_x, VOC, and $PM_{2.5}$ based on the construction activity data and emission estimate tools discussed below.

Proposed Activities Resource Data Estimates

Estimates as to construction crew and equipment requirements and productivity are based on data presented in:

- "2003 RSMeans Facilities Construction Cost Data", R.S. Means Co., Inc., 2002
- "2011 RSMeans Facilities Construction Cost Data", R.S. Means Co., Inc., 2010

Based both on the size of the 3- and 7-story buildings to be demolished and the proposed mixed-use development to be constructed in their place, the below major building elements associated with the proposed action were correlated to R.S. Means handbook-defined activity items and considered in determining demolition and construction equipment and crew activity data:

- Existing building demolition.

- Construction of a proposed building foundation that is assumed to be a reinforced slab foundation with pile-supported grade beams running along the exterior edges of the slab to support the masonry and steel-frame exterior walls.

- Construction of proposed building superstructure such as wall, roof, etc.

- Proposed building interior fit-out activities such as mechanical system, utility installation, etc.

Equipment Operations and Emissions

The quantity and type of equipment necessary were determined based on the activities necessary to implement the proposed action as described above. All equipment was assumed to be diesel-powered unless otherwise noted. Pieces of equipment to be used include, but are not limited to:

- Compressor.
- Crane.
- Dozer.
- Front end loader.
- Gas engine vibrator.
- Grader.
- Concrete pump.
- Roller.
- Construction trucks.

Estimates of equipment emissions were based on the estimated hours of usage and emission factors for each motorized piece of equipment to be utilized for the project. Emission factors for each pollutant related to heavy-duty diesel equipment were obtained from the U.S. EPA's Motor Vehicle Emission Simulator (MOVES) 2014a emission factor model (U.S. EPA, 2015).

The U.S. EPA recommends the following formula to calculate hourly emissions for the "ith" pollutant from non-road engine sources, including tractors:

$$M_i = N \times HP \times EF_i$$

where:

M_i = mass of emissions of ith pollutants during inventory period;
N = source population (units);
HP = average rated horsepower; and
EF_i = average emissions of ith pollutant per unit of use (e.g., grams per horsepower-hour).

Estimated emissions from operation of nonroad equipment are presented in Table 2.

Table 2
Demolition and Construction Equipment Emissions

Equipment Type	Days	Hours	Horsepower (hp)	Emission Factor (grams/hp-hour)			Emission Rate (tons)		
				VOC	NOx	$PM_{2.5}$	VOC	NOx	$PM_{2.5}$
Compressor, 250 cfm	250	2000	85	0.28	2.60	0.22	0.05	0.49	0.04
Concrete pump, small	55	440	60	0.49	4.65	0.38	0.01	0.14	0.01
Crane, 90-ton	30	240	250	0.19	1.67	0.07	0.01	0.11	0.00
Crane, hydraulic, 33 ton	115	920	152	0.20	1.82	0.12	0.03	0.28	0.02
Crane, SP, 5 ton	35	280	42	0.19	3.45	0.09	0.00	0.04	0.00
Dozer, 300 HP	20	160	300	0.18	1.93	0.11	0.01	0.10	0.01
Front end loader, 1.5 cy, crl	20	160	90	0.84	3.94	0.68	0.01	0.06	0.01
Front end loader, TM, 2.5cy	114	912	149	0.63	3.66	0.42	0.09	0.55	0.06
Gas engine vibrator	32	256	9	0.67	4.58	0.41	0.00	0.01	0.00
Gas welding machine	146	1168	23	1.23	5.33	0.68	0.04	0.16	0.02
Grader, 30,000 lb	20	160	215	0.18	1.25	0.07	0.01	0.05	0.00
Roller, vibratory	20	160	33	0.19	3.41	0.08	0.00	0.02	0.00
Tractor truck, 240 HP	20	160	240	0.56	3.45	0.32	0.02	0.15	0.01
Total Emissions							0.30	2.15	0.19

Construction Vehicle Operations and Emissions

Truck and commuting vehicle operations would result in indirect emissions. It is assumed each truck or commuting vehicle trip would take a 20-mile round trip to and from the site. USEPA's Motor Vehicle Emission Simulator (MOVES) program was used to predict truck and commuter vehicle running emission factors for NOx, VOC and $PM_{2.5}$. The national default input parameters applicable for the New Haven area, where the project site is located, were used in emissions factor modeling. Estimated emissions from operation of trucks and commuting vehicles are presented in Table 3.

Table 3
Demolition and Construction Period Vehicle Emissions

Vehicle Type	Total Trips	Miles per Trip	Emission Factor (lb/mi)			Emission Factor (tons)		
			VOC	NO_X	$PM_{2.5}$	VOC	NO_X	$PM_{2.5}$
Trucks	1742	20	0.00	0.01	0.00	0.02	0.13	0.01
Cars	7884	20	0.00	0.00	0.00	0.01	0.03	0.00
Total motor vehicle emissions						0.03	0.16	0.01

Compliance Analysis

Based on this analysis of NO_x, VOC and $PM_{2.5}$ emissions performed in conjunction with the Final Rule of *Determining Conformity of Federal Actions to State or Federal Implementation Plans* (USEPA, November 30, 1993) and *Revisions to the General Conformity Regulations* (USEPA, March 24, 2010),

the proposed project would not require a formal conformity determination. The conservative results, assuming the total emissions predicted from demolition and construction activities would occur within one year, and presented in Table 4, show no exceedance of the applicable *de minimis* criteria of 100 tpy for NO_x and $PM_{2.5}$ and 50 tpy of VOC. Therefore, the proposed project action would have minimal air quality impacts and would not require a formal conformity determination.

Table 4
Total Demolition and Construction Emissions

Activity	VOC (ton)	NOx (ton)	$PM_{2.5}$ (ton)
Non-Road Construction Equipment Emission	0.30	2.15	0.19
On-Road Vehicle Emission	0.03	0.16	0.01
Total Emission	0.33	2.31	0.20
De minimis Threshold	*50*	*100*	*100*

References

R.S. Means Co., 2002. *2003 RSMeans Facilities Construction Cost Data*.

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Appendix B

NOISE ASSESSMENT

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INTRODUCTION

Noise pollution comes from numerous sources. Some noise is caused by activities essential to the health, safety, and welfare of the community's inhabitants, such as emergency vehicle sirens, garbage collection operations, and construction and maintenance equipment. Other sources of noise, such as traffic and aircraft, stem from the movement of people and goods, activities that are essential to the viability of a community as a place to live and do business. Although these and other noise-producing activities are necessary to modern life, the noise they produce is sometimes undesirable and may detract from the quality of the living environment.

A number of factors affect sound as it is perceived by the human ear. These include the actual level of the sound (or noise), the frequencies involved, the period of exposure to the noise, and changes or fluctuations in the noise levels during exposure. Levels of noise are measured in units called decibels (dB). Since the human ear cannot perceive all pitches or frequencies equally well, these measures are adjusted or weighted to compensate for the human lack of sensitivity to low-pitched and high-pitched sounds. This adjusted unit is known as the A-weighted decibel, or dBA. The A-weighted network de-emphasizes both very low- and very high-pitched sounds, so the measured levels correlate well with the human perception of loudness.

Human response to changes in noise levels depends on a number of factors, including the quality of the sound, the magnitude of the changes, the time of day at which the changes take place, whether the noise is continuous or intermittent, and the individual's ability to perceive the changes. Human ability to perceive changes in noise levels varies widely with the individual, as does response to the perceived changes. Generally, changes in noise levels less than three dBA will barely be perceptible to most listeners, whereas a ten dBA change normally is perceived as a doubling (or halving) of noise levels. These guidelines permit direct estimation of an individual's probable perception of changes in noise levels.

Since the dBA noise metric describes a noise level at just one moment, and very few noises are constant, other ways of describing noise over extended periods are needed. One way of describing fluctuating sound is to describe the fluctuating noise heard over a specific time period, as if it had been a steady, unchanging sound. For this condition, a descriptor called the equivalent sound level, L_{eq}, can be computed. The L_{eq} descriptor is the constant sound level that, in a given situation and time period (e.g., one-hour L_{eq}, or 24-hour L_{eq}), conveys the same sound energy as the actual time-varying sound.

Alternatively, it is often useful to account for the difference in response of people in residential areas to noises that occur during sleeping hours as compared to waking hours. A descriptor, the day-night noise level (DNL), is defined as the A-weighted average sound level in decibels during a 24-hour period with a 10-dBA penalty weighting applied to nighttime (10pm – 7am next day) sound levels. It is a widely-used indicator for such evaluations. The 10-dBA weighting accounts for the fact that noises at night sound louder because there are usually fewer noises occurring at night. The DNL descriptor has been adopted by the Department of Housing and Urban Development (HUD), the EPA, the Federal Aviation Administration (FAA), the Department of Defense (DoD) and other organizations as one of the most appropriate metric for estimating the degree of nuisance or annoyance that increased noise levels would cause in residential neighborhoods. Therefore DNL is the appropriate noise descriptor for describing the affected noise environment for the proposed housing project that requires HUD funding and approval.

HUD NOISE CONTROL CRITERIA AND STANDARDS

HUD has adopted noise standards, criteria, and guidelines for determining acceptability of federally-assisted projects and has proposed mitigation measures to ensure that activities assisted by HUD will achieve the goal of a suitable living environment. However, these guideline values are strictly advisory.

HUD assistance for the construction of new noise-sensitive land uses is generally prohibited for projects with Unacceptable noise exposure and is discouraged for projects with Normally Unacceptable (as defined in Table 1) noise exposure without suitable mitigating measures. This policy applies to all HUD programs for residential housing, college housing, mobile home parks, nursing homes, and hospitals. It also applies to HUD projects for land development, new communities, redevelopment, or any other provision of facilities and services that is directed toward making land available for housing or noise-sensitive development.

Table 1: HUD Outdoor Site Acceptability Standards

Noise Zone	Day-night Sound Level (DNL)
Acceptable	Not exceeding 65 dB
Normally Unacceptable	Above 65 dB but not exceeding 75 dB
Unacceptable	Above 75 dB
Source: 24 CFR Part 51, Subpart B.	

Sites falling within the Normally Unacceptable zone require implementation of additional sound attenuation or reduction or other mitigation measures: five dB if the DNL is greater than 65 dB but does not exceed 70 dB and 10 dB if the DNL is greater than 70 dB but does not exceed 75 dB. If the DNL exceeds 75 dB, the site is considered Unacceptable for residential use.

Additionally, HUD considers 45 dB as the maximum indoor noise limit per 24 CFR Part 51.101(a)(9). This indoor level assumes that an indoor level will be 45 dB or less with a common building structure that is correlated to an outdoor noise level of 65 dB or less under "Acceptable" condition ((24 CFR Part 51.103(c)(2)).

NOISE ANALYSIS METHODOLOGIES

The HUD-developed Day/Night Noise Level Assessment Calculator, an electronic assessment tool that calculates the DNL contributed from roadway and railway traffic. This tool was utilized to analyze the existing DNL levels at the proposed housing site along State Street.

DNL Contributions from Roadway

According to the tool User Guide, all major roads within 1000 feet of the study site should be considered in the assessment. The project site is located immediately adjacent to State Street, a local arterial road as shown in Figure 1. This road is the only major road within the 1000-ft radius of the site and the DNL at the project site contributed from this road was predicted with the following inputs:

Figure 1 – Proposed Housing Site

- Distance of 45 feet from centerline to the closest building façade.
- Average travel speed of 25 miles per hour (mph) based on the speed limit posted.
- 2010 Average daily traffic (ADT) of 4,300 published by Connecticut Department of Transportation and the night traffic fraction of approximately 9 percent based on CTDOT-recorded data along State Street in 2007.
- Truck fractions of approximately 2.5 percent medium truck and 1.2 percent heavy truck, respectively derived based on the field data collected between 9 and 11 AM on April 6, 2017.

DNL Contributions from Railway

Per the tool User Guide, all railways within 3000 feet of the site should be assessed. New Haven-Hartford- Springfield railroad as shown in **Figure 1** above is approximately 270 feet from its centerline to the proposed building façade.

Other input parameters to the calculation include:

- Average train travel speed of 25 mph.
- One engine per train for commuter train and two engines per train for freight train.
- Each commuter train consists of an average of 8 cars and each freight train consists of an average of 80 cars.

- Per train schedule, a total of 12 commuter train and 8 freight train two-way trips including 2 nighttime freight train trips during nighttime hours (10PM to 7AM next day morning) are operating along the New Haven-Hartford-Springfield corridor.

- No horn is allowed in the City of Meriden.

DNL Contributions from Airport Noise

Meriden Markham Municipal Airport is located approximately 2.5 miles southwest of the project site. Given the type of aircraft (general aviation) and the limited traffic from the airport, 65 DNL contours are typically within the airport. Therefore, aircraft noise from the airport is anticipated to contribute negligible DNL levels at the proposed site.

DNL RESULTS

Based on the calculated DNL level using the HUD-developed tool, it was found that the DNL is dominated by adjacent roadway traffic at the project site as shown below:

- 62.8 dBA from road only.
- 59.9 dBA from rail only.
- 64.6 dBA from road and rail contributions combined.

The predicted DNL level indicates that the project site is considered "Acceptable" for residential use per the HUD guideline.

REFERENCES

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