

Environmental Assessment and Environmental Impact Evaluation

*Prepared pursuant to 42 U.S.C. 4321 et seq. and Regulations of
Connecticut State Agencies Section 22a-1a-1 to 12, inclusive*

New Terminal B Passenger Facility and Associated Improvements at Bradley International Airport Windsor Locks, Connecticut

State Project No. 165-393

Prepared for:

**Federal Aviation Administration
Connecticut Department of Transportation**

June 2012

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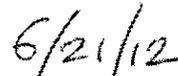
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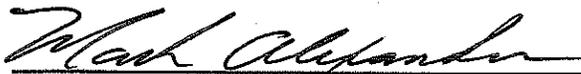
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Acronyms and Abbreviations

AMP	Airport Master Plan
AMPU	Airport Master Plan Update
ATCT	Air Traffic Control Tower
BDL	Bradley International Airport
CE	Categorical Exclusion
CEPA	Connecticut Environmental Policy Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CGS	Connecticut General Statutes
ConRAC	Consolidated Rent-A-Car
CTDEEP	Connecticut Department of Energy and Environmental Protection
CTDPH	Connecticut Department of Public Health
CTDOT	Connecticut Department of Transportation
CT NDDB	Connecticut Natural Diversity Database
CUP	Central Utility Plant
dB/dBa	Decibel/A-weighted decibel
DNL/LDN/Ldn	Day Night Average Sound Level
EA	Environmental Assessment
ECD	Environmental Classification Document
EIE	Environmental Impact Evaluation
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FIS	Federal Inspection Service
FONSI	Finding of No Significant Impact
GSF	Gross Square Feet
IAB	International Arrivals Building
LEQ/Leq	Equivalent Noise Level
LF	Linear feet
LOS	Level of Service
L RTP	Long Range Transportation Plan
MSATs	Mobile source air toxics
NAAQS	National Ambient Air Quality Standards
NATA	National Air Toxics Assessment

NAVAIDS	Navigational Aids
NCP	Noise Compatibility Program
NEPA	National Environmental Policy Act
RCSA	Regulations of Connecticut State Agencies
SF	Square Feet
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
STIP	Statewide Transportation Improvement Program
THPO	Tribal Historic Preservation Officer
TIP	Transportation Improvement Program
TSA	Transportation Security Administration
USACE	U.S. Army Corps of Engineers
USC	United States Code
US DOT	U.S. Department of Transportation
USFWS	United States Fish and Wildlife Service
USGS	United States Geologic Survey
VMT	vehicle miles traveled

Executive Summary

Introduction

The Connecticut Department of Transportation (CTDOT) proposes to construct a new passenger terminal in the area occupied by the existing Terminal B at Bradley International Airport (BDL) in Windsor Locks, Connecticut. The existing Terminal B complex would be demolished for construction of a new Terminal B and associated airside and landside improvements to provide airport facilities that would meet future air travel demand. Construction of the proposed improvements would occur in phases, with completion of the initial phase anticipated by 2018 and full-build anticipated by 2028. Key elements of the program include a new terminal building with concourses, a modified roadway system to access the terminal, new approach roadway alignments, a new parking garage and consolidated car rental facility, airside aircraft parking aprons and taxilanes, airside and landside utilities, and power generation to the new terminal.

The proposed project, hereafter referred to as the Proposed Action, would be financed with Federal and State funds. Federal funds have been obtained through the Federal Aviation Administration (FAA); therefore, the Proposed Action is subject to the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq.) and Section 106 of the National Historic Preservation Act. Under NEPA, the Proposed Action requires the preparation of an Environmental Assessment (EA) as outlined in the FAA Order 5050.4B, NEPA Implementing Instructions for Airport Actions.

The Proposed Action is also subject to the Connecticut Environmental Policy Act (CEPA) (Connecticut General Statutes [CGS] Sections 22a-1 through 22a-1h, inclusive, and, where applicable, CEPA regulations Sections 22a-1a-1 through 22a-1a-12, inclusive, of the Regulations of Connecticut State Agencies [RCSA]). The preparation of an Environmental Impact Evaluation (EIE) is required for the construction of new parking facilities that provide for an increase in capacity of 200 vehicles or more and that could have significant environmental impacts, as well as any other actions that may significantly affect the environment in an adverse manner, as identified in the CTDOT Environmental Classification Document (ECD). Therefore, this document is a joint Federal and State EA/EIE. FAA is the lead Federal agency under NEPA, and CTDOT is the lead State agency under CEPA and the project sponsor.

Project Background

Located approximately 12 miles north of Hartford, Connecticut and 16 miles south of Springfield, Massachusetts, the approximately 2,356-acre Bradley International Airport is located within the towns of Windsor Locks, Windsor, Suffield, and East Granby, Connecticut. In 2009, a total of 5,334,322 passengers passed through BDL and a total of 124,739 commercial, general aviation, military, and local aircraft operations¹ occurred (Urban Engineers

¹Total operations consist of 94,194 commercial, 17,379 general aviation, 3,637 military, and 5,529 local aircraft operations (Urban Engineers and STV Inc., 2010).

and STV Inc., 2010). As of June 2010, there were 100 daily departures to 29 destinations provided (BDL, 2010) by 13 regional/commuter and national airlines – Air Canada, American Airlines, American Eagle, Continental Airlines, Continental Express, Delta, Frontier Airlines, Jet Blue, Southwest Airlines, United Airlines, United Express, USAirways, and USAirways Express (BDL, 2011).

A 20-year Airport Master Plan (AMP) for BDL was completed in 1993 (HNTB, 1993). The AMP recognized the need for expansion of terminal and parking facilities to both improve passenger service and accommodate increased passenger volume and aviation activity forecast to occur through 2010. The expansion of Terminal A and construction of the East Concourse and associated parking, roadway, and airside improvements were the first phase of a larger terminal expansion project. That first phase was the subject of a joint Federal Environmental Assessment/Finding of No Significant Impact (EA/FONSI) under NEPA and a State FONSI under CEPA (FAA and CTDOT, 2000). At full-build out, the project was envisioned as including demolition of Terminal B and the IAB, the construction of a new concourse and the expansion of terminal facilities, and possibly hotel space, at the site of the existing Terminal B (FAA and CTDOT, 2000). Although the impacts associated with the Terminal B demolition were included in the previous EA/FONSI, the demolition activities were deferred while the Terminal A expansion was carried forward.

Demolition of Terminal B was addressed in the 2000 EA/FONSI. Consequently, a NEPA review and Federal approval has already occurred for that action. However, as described in Order 1050.1E (Section 402b(2)), if a proposed action is to be implemented in stages, a written re-evaluation of the continued adequacy, accuracy, and validity of the EA will be made at each major approval point that will occur more than three years after the issuance of the FONSI. Given that approximately 11 years have passed since the issuance of the 2000 EA/FONSI, the potential impacts associated with the demolition of Terminal B are re-evaluated in this document. The demolition of the Terminal B complex is addressed as part of the No Action alternative since the demolition will proceed regardless of the status of the new terminal construction.

An Airport Master Plan Update (AMPU) was completed in 2005. The document provided an inventory of existing conditions, an update of activity forecasts, a review of demand and capacity and facility requirements, the identification and evaluation of development alternatives for a 20-year time span and a review of financial plans, airport plans, and environmental constraints at BDL (PB Aviation, 2005). The AMPU identifies several specific airside and landside projects to meet the anticipated needs of BDL over a 20-year planning horizon. The expansion of passenger terminal facilities is among the projects, along with related projects such as improved access and an expanded parking garage. The AMPU identifies the area currently occupied by Terminal B as a preferred location based on its operational efficiency, proximity to the FIS facility, aircraft taxi distance, and compatibility with existing land use and development options beyond the 20-year AMPU timeframe (PB Aviation, 2005).

Purpose and Need

The need for renovated and expanded passenger terminal facilities and associated projects to support the terminal development was identified nearly 20 years ago in the 1993 Bradley International Airport Master Plan. At that time, the need for expanded terminal facilities was due to both the aged infrastructure of the older portions of the terminal complex and the inability of the terminal to provide an adequate level of passenger service for current and projected levels of activity (HNTB, 1993). In a subsequent evaluation of terminal facilities in 1997, Terminal B was found to have significant deficiencies with its mechanical and electrical systems, as well as building code requirements, due to its age.

To summarize, the need for a new passenger terminal facility is a result of:

- Forecast growth in passenger activity and aircraft operations, which will require a total of up to 31 gates by 2028. By 2028, Terminal A will only have 20 gates, requiring construction of up to an additional 11 gates to maintain acceptable levels of service at BDL.
- Age and current condition of the existing Terminal B (the Murphy Terminal) which makes renovation impracticable.

Parking, roadway and other infrastructure improvements/developments are needed to support the new passenger terminal development, provide necessary resources to airport tenants, and continue to provide acceptable levels of passenger service as annual passenger traffic increases.

The purpose of the Terminal B replacement is to meet the needs identified for BDL passenger handling and infrastructure over the next 20 years in order to maintain acceptable demand/capacity levels and continue to provide acceptable levels of passenger service. The purpose of the parking garage/ConRAC is to both meet the demand that has existed for at least a decade for ready/return and Quick Turnaround (QTA) in close proximity to the terminal complex and to provide public parking to replace spaces in Lot B that would be lost due to the parking garage/ConRAC facility construction. Construction of the facility also allows for additional public parking to be added to the airport to accommodate the demand as annual numbers of passengers rise over the next 20 years. Similarly, the purpose of the other elements of the Proposed Action is to support the terminal development by providing adequate airside and landside infrastructure.

Description of Proposed Action

The Proposed Action is the construction of a new passenger terminal in the area occupied by the existing Terminal B at Bradley International Airport (BDL) in Windsor Locks, Connecticut. A new Terminal B and associated airside and landside improvements would be constructed following demolition of the existing Terminal B complex. The proposed terminal, landside, and airside program includes the following major elements, which are shown schematically in Figure ES-1 and Figure ES-2 (Urban Engineers and STV Inc., 2011):

Construction of a New Terminal B

The proposed new Terminal B is located in the vicinity of the existing Terminal B complex to the east of the Sheraton Hotel and Terminal A at BDL. The new Terminal B is designed as a north/south oriented 'U'-shaped structure, consisting of a multi-level landside headhouse and dual gate concourses to the west and to the east. The concourses are designed with 19 gates to accommodate variable-sized aircraft; including two international widebody gates.

The schematic design for the new terminal building includes a new Federal Inspection Services (FIS) facility located within the new terminal. The new FIS facility would service international flights associated with both Terminal A and Terminal B.

Landside Utility Modification and Relocation

The proposed project would require extensive modification and relocation of landside utilities including sanitary sewer, water, stormwater, glycol collection system, electric, gas, and communications.

Construction of a New Central Utility Plant

A new Central Utility Plant (CUP) would be constructed west of the terminal building to service the new Terminal B complex. The CUP is sized to meet the anticipated power and heating/cooling demands of the terminal complex at full-buildout.

Roadway and Viaduct Relocation/Construction

The project includes the construction of a multi-level roadway network that would deliver vehicles to the new terminal's arrival and departure functions, as well as to a terminal loading dock. The roadway network for Terminal B would be an extension of the existing upper (Departures) and lower (Arrivals) level network in place at Terminal A. The existing Departures viaduct would be extended to service the new terminal while maintaining the arrival roadway under the viaduct, and Schoephoester Road would be realigned to the south to allow for a proposed at-grade intersection. The exit toll plaza for the existing public parking garage adjacent to Terminal A would be reconfigured. No work is proposed on the roadway network beyond the locations east of the Sheraton Hotel in front of Terminal A, or on Schoephoester Road beyond the western edge of the existing public parking garage.

Construction of a New Parking Garage and Consolidated Car Rental Facility

The project includes the construction of a new combined public parking garage and consolidated Rent-A-Car (ConRAC) facility within a single multi-level structure with up to seven levels and 2,600 public parking spaces. The parking garage/ConRAC facility is receiving no Federal funding and would be constructed regardless of any new terminal construction, but is included in this joint CEPA/NEPA document since evaluation of the action is required under CEPA. Although the development of the parking garage/ConRAC facility would proceed regardless of any new terminal construction, for purposes of efficiency in the CEPA process, the projects are being evaluated in a single document.

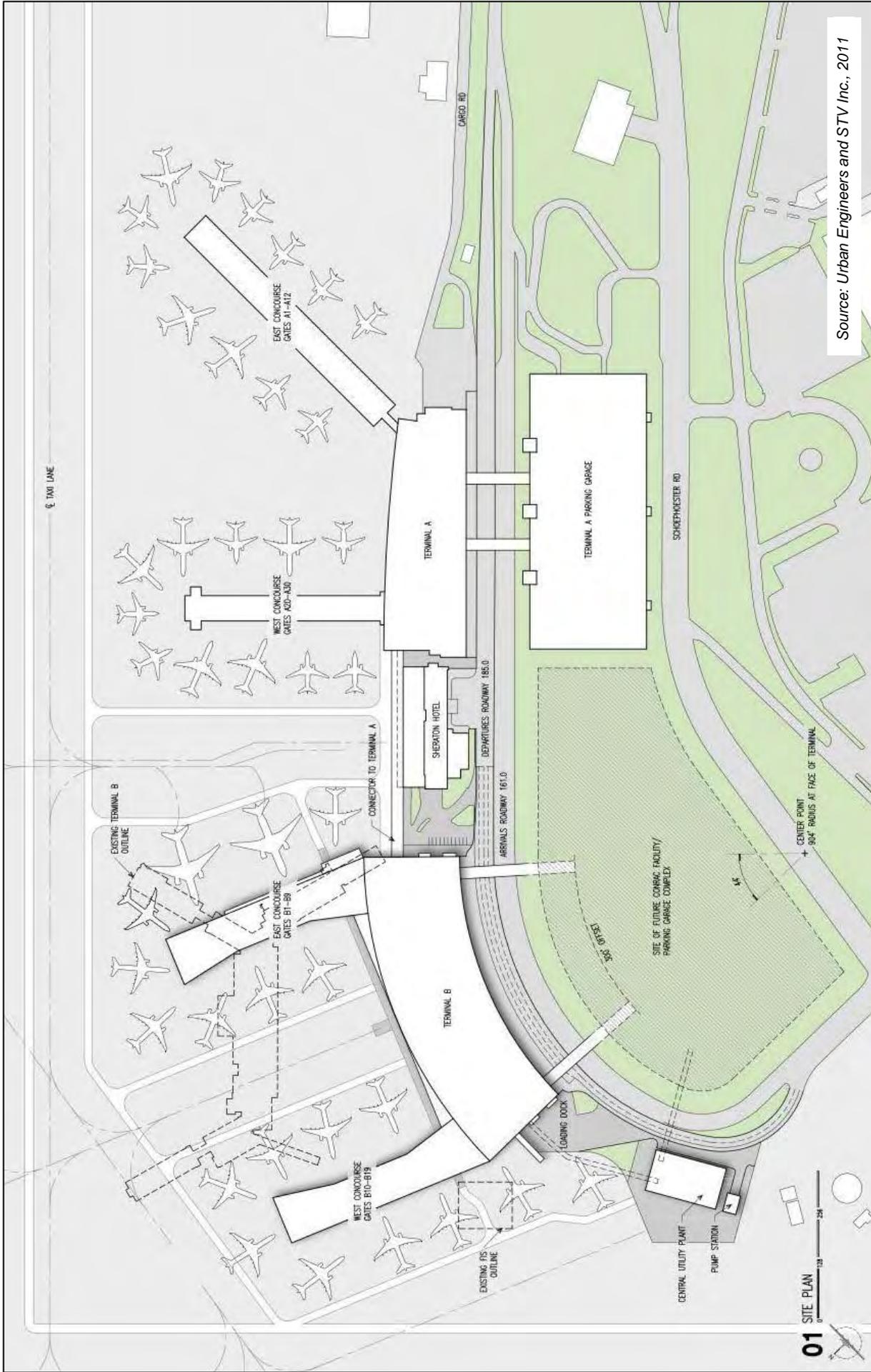


Figure ES-1. Proposed Action – Terminal, Landside, and Airside Facilities

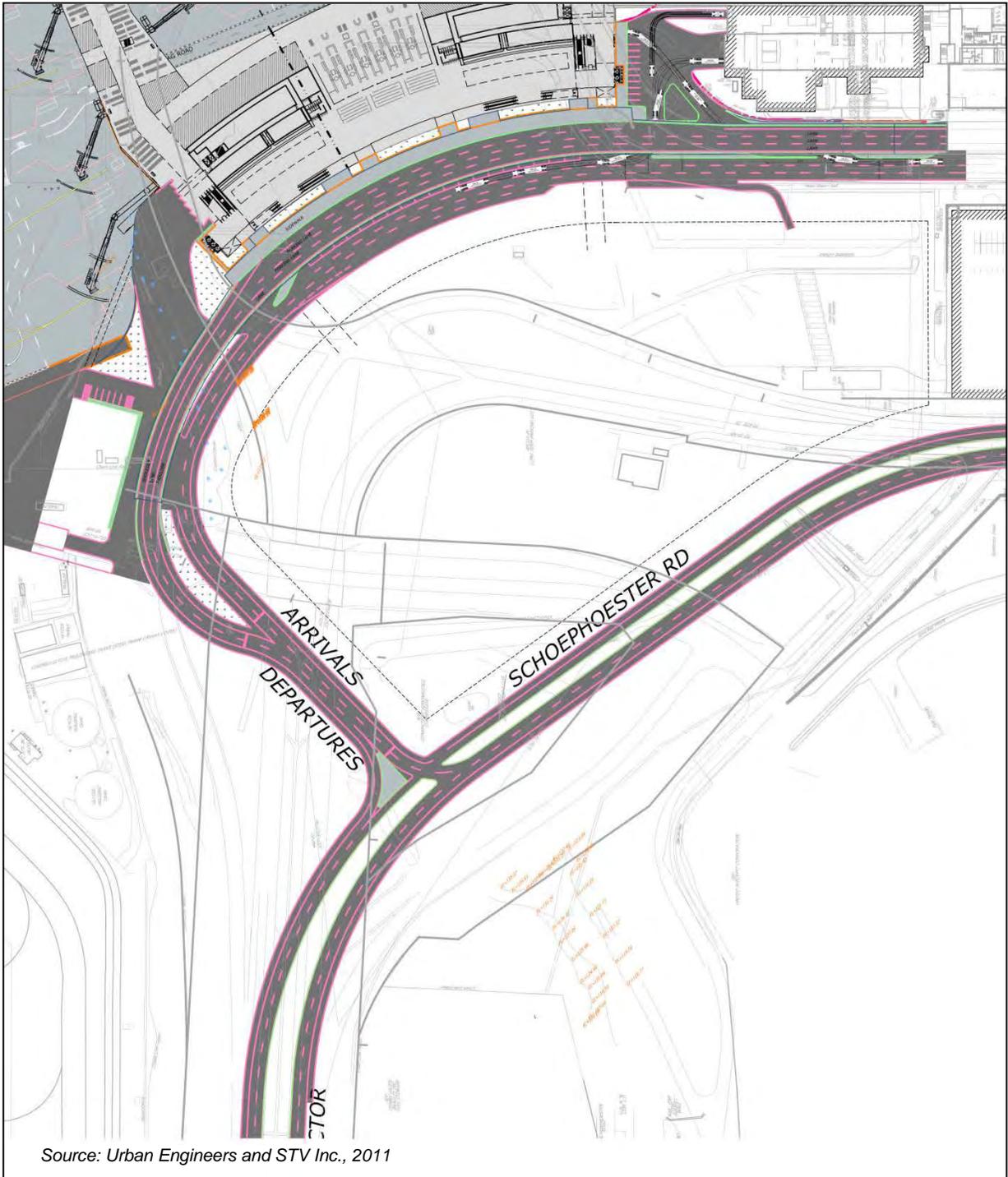


Figure ES-2. Proposed Action – Landside Roadway Configuration

Airside Program

The proposed airside program consists of demolition of the existing FIS building, which is located west of the existing Terminal B and short-term parking lot, and demolition of the existing concrete apron to allow for the new apron, including changes to grading, drainage and geometry. The proposed airside construction includes a new concrete apron, drainage system, hydrant fuel, fire water, apron flood lighting, passenger boarding bridges and other incidental construction necessary to service the proposed terminal (Urban Engineers and STV Inc., 2011).

Project Phasing

The Terminal B redevelopment project is conceived as a phased program. The parking garage/ConRAC and roadway network would be constructed in an initial phase. The new Terminal B would be constructed in two later phases based on demand – an initial segment of Terminal B would be constructed in a second phase with an estimated completion date of 2018, while a second segment of the terminal would be constructed in a final phase, which is anticipated by 2028 (i.e., full-build). Phasing for the construction of the CUP would be determined during subsequent design based on refined estimates of the power requirements for the Terminal B complex.

Alternatives Considered

In addition to the No Action Alternative, which serves as a baseline for assessing potential impacts, several alternatives were considered in the EA/EIE. These include:

- Rehabilitation of Terminal B
- Alternatives Sites (sited that are controlled by CTDOT or are reasonably available)
- Alternative Designs
- Proposed Action

No Action Alternative

Under the No Action alternative, there would be no change to the existing facilities at BDL other than the demolition of the existing Terminal B complex, which will proceed regardless of the status of the new terminal construction. The new Terminal B facility and associated Central Utility Plant, the parking garage/ConRAC facility, and other airside and landside improvements, would not be constructed. This alternative would result in no upgrade or expansion of terminal and parking facilities and an anticipated future decline in passenger service and airline operational efficiency given the projected rise in the number of annual enplanements/deplanements at the airport. The No Action alternative was rejected as the preferred alternative due to its inability to meet the projected needs for passenger handling at BDL, and the anticipated decline in service that would result.

Rehabilitation of Terminal B

The rehabilitation of Terminal B was considered and rejected in the 2000 EA/FONSI due to the age and condition of the building. The AMPU (2005) reports that a study of rehabilitation of Terminal B to replace aged infrastructure, meet current building code requirements and meet the forecast demand for additional gates found that it would be less expensive and more

prudent to demolish and replace the Murphy Terminal rather than attempt to renovate and rehabilitate it. Consequently, rehabilitation of Terminal B was determined to be infeasible.

Alternative Sites

New, remotely-located terminal facilities were analyzed in the AMPU (2005) and determined not to be cost-effective for BDL; this alternative was considered infeasible and was not pursued. The AMPU considered terminal development (1) in the area east of Terminal A, (2) the area west of Terminal A and southwest of the existing Terminal B footprint, and (3) the area northwest of Terminal A over the footprint of the existing Terminal B. The three alternatives were evaluated based on compatibility with existing land use, access and security, future expansion potential, and potential environmental impacts.

As a result of the AMPU, a westward expansion of the terminal complex was carried forward for preliminary engineering and programming. Eight initial terminal site alternatives were considered and unit terminals with either a single-loaded concourse or two dual-loaded piers were carried forward for alternative design analysis.

Alternative Designs

Design variations capable of accommodating unit terminals with either single-loaded or dual-loaded concourses were narrowed to two alternatives, referred to as Concept 2 and Concept 4. Site plans, diagrammatic floor plans, and three-dimensional models were developed for Concept 2 and Concept 4. A set of evaluation criteria were developed for the two concepts, and they were compared based on terminal, airside and landside function and operation. The evaluation criteria favored Concept 4 over Concept 2, and Concept 4 was selected as the most feasible and prudent alternative to be carried forward into schematic design and is the preferred alternative evaluated as the Proposed Action in this EA/EIE.

Two landside roadway configuration alternatives were evaluated using design simulations for traffic leaving or recirculating the Terminal B area. A flyover ramp alternative, which includes grade separation ramps and structures for all movements, was initially considered in the schematic design. An at-grade alternative was developed and analyzed to determine the feasibility of a lower-cost alternative. The at-grade intersection alternative was found to be more cost-effective and was selected for Design Development as part of the preferred alternative.

Preferred Alternative

Concept 4 was selected as the Preferred Alternative by CTDOT because of its efficient integration of the overall Terminal B Program. Concept 4 also provided the most efficient balance between landside, terminal and airside operations.

Summary of Impacts and Mitigation

Mitigation measures that would reduce or offset potential adverse impacts associated with the Proposed Action are summarized below (*Table ES-1*). Because the Proposed Action consists of redevelopment of a fully-developed site and is a response to (rather than a cause of) increased aircraft operations, the potential adverse impacts are relatively few.

Table ES-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Land Use, Zoning, and Local and Regional Development Plans	<ul style="list-style-type: none"> Proposed Action is consistent with land use, zoning and local/regional development plans 	<ul style="list-style-type: none"> None required
Consistency with State and Regional Plans	<ul style="list-style-type: none"> Proposed Action is consistent with State and regional plans 	<ul style="list-style-type: none"> None required
Traffic and Parking	<ul style="list-style-type: none"> Study area intersections will operate at LOS C or better under the Proposed Action, resulting in no anticipated impact to traffic Anticipated parking demand under the Proposed Action is 12,070 parking spaces – which is adequately accommodated by the available on- and off-site parking supply, resulting in no anticipated impact under the Proposed Action 	<ul style="list-style-type: none"> No mitigation necessary, other than routine signal timing adjustments
Considerations Relating to Pedestrians and Bicyclists and Transit	<ul style="list-style-type: none"> Proposed Action is not anticipated to result in impacts to these modes of transportation 	<ul style="list-style-type: none"> None required
Air Quality	<ul style="list-style-type: none"> Emissions from the Proposed Action are less than the de minimis levels identified as thresholds for impact and conformity determination Emissions from the Proposed Action are not regionally significant Less than 1% increase in Hazardous Air Pollutants will result from the Proposed Action relative to existing conditions Anticipated GHG emissions associated with the Proposed Action are below the Council on Environmental Quality threshold for impact 	<ul style="list-style-type: none"> None required
Noise	<ul style="list-style-type: none"> Noise exposure dominated by aviation activity, what would occur regardless of the Proposed Action Proposed Action is not anticipated to result in an increase in off-airport noise exposure 	<ul style="list-style-type: none"> None required Noise Compatibility Plan implementation will continue regardless of the Proposed Action

Table ES-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Socioeconomic Resources	<ul style="list-style-type: none"> The Proposed Action is not anticipated to result in adverse socioeconomic impacts 	<ul style="list-style-type: none"> None required
Water Quality	<ul style="list-style-type: none"> Proposed Action anticipated to improve water quality of stormwater discharges due to upgraded stormwater management and glycol collection systems Proposed Action would provide increased protection to groundwater by eliminating potential pollutant sources in the Terminal B area 	<ul style="list-style-type: none"> None required Existing Stormwater Pollution Prevention Plan and compliance with pending NPDES discharge permit and associated regulatory programs would address potential impacts to surface water and groundwater
Hydrology and Floodplains	<ul style="list-style-type: none"> Proposed Action involves no work in floodplain areas and no significant changes in the volume or timing of peak stormwater runoff Upgraded stormwater management measures under Proposed Action may benefit hydrologic conditions in receiving waters 	<ul style="list-style-type: none"> None required
Wetlands	<ul style="list-style-type: none"> Proposed Action would result in 0.09 to 0.28 acres of wetland impacts to WA-1, WA-2, WA-3, and WA-5, depending on the landside roadway configuration design 	<ul style="list-style-type: none"> Minimization of direct wetland impacts to extent practicable given project Purpose and Need Wetland enhancement including invasive species removal, wetland replication, and/or wetland restoration Compliance with mitigation measures specified in CTDEEP Inland Wetlands and Watercourses Permit, Clean Water Act Section 404 Permit, Clean Water Act Section 401 Water Quality Certification
Coastal Resources	<ul style="list-style-type: none"> No coastal resources are present in the project area 	<ul style="list-style-type: none"> None required
Vegetation, Wildlife, and Threatened and Endangered Species	<ul style="list-style-type: none"> No anticipated impacts to existing wildlife or vegetation No State- or Federally-listed species located in the project area 	<ul style="list-style-type: none"> None required
Soils and Geology	<ul style="list-style-type: none"> No impacts to soils or geologic features anticipated 	<ul style="list-style-type: none"> None required

Table ES-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Cultural Resources	<ul style="list-style-type: none"> • The SHPO has determined that the Proposed Action would have no adverse effect on cultural resources • The THPOs have determined that the Proposed Action would not affect properties of historical, religious or cultural significance to the Mohegan or Mashantucket Pequot tribes • There are no Section 4(f) properties that would be affected by the Proposed Action 	<ul style="list-style-type: none"> • None required
Solid Waste, Toxics, Pesticides, and Hazardous Materials	<ul style="list-style-type: none"> • Proposed Action is not anticipated to impact on-going solid waste and recycling activities • Under the Proposed Action (and No Action) alternative there is the potential for encountering contaminated building materials, soil, or groundwater during demolition and construction 	<ul style="list-style-type: none"> • Ongoing compliance with Conditionally Exempt Small Quantity Generator of Hazardous Waste requirements • Disposal of solid and universal waste in compliance with applicable regulations
Aesthetics/Visual Effects	<ul style="list-style-type: none"> • Proposed Action is consistent with the existing visual and aesthetic setting of the terminal complex 	<ul style="list-style-type: none"> • None required
Energy Use and Conservation	<ul style="list-style-type: none"> • Proposed Action would improve energy conservation at BDL • New construction would meet High Performance Building Standards established by the State of Connecticut 	<ul style="list-style-type: none"> • None required
Public Utilities and Services	<ul style="list-style-type: none"> • Proposed Action is not anticipated to have adverse impacts on the supply or provision of utilities 	<ul style="list-style-type: none"> • A detailed sewer analysis will be performed in subsequent design phases to support the design of the proposed replacement sanitary pump station and force main • Existing and projected water demand and wastewater flows for the airport and projected water demand and wastewater flows associated with the Proposed Action will be evaluated in more detail during the design development phase.
Public Health and Safety	<ul style="list-style-type: none"> • No impact to provision of public health and safety services is anticipated 	<ul style="list-style-type: none"> • None required

Table ES-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
<i>Demolition and Construction Period</i>		
Traffic	<ul style="list-style-type: none"> • Minor, temporary disruptions to traffic in the immediate project area 	<ul style="list-style-type: none"> • Use of appropriate traffic management including appropriate construction phasing to minimize disruptions to traffic and access, establishing haul routes and staging areas, permissible hours of work, uniformed officers, and other traffic controls to direct traffic and assist with pedestrian crossings as needed.
Air Quality	<ul style="list-style-type: none"> • Emissions from construction equipment • Increased vehicle exhaust emissions resulting from increased congestion during construction • Fugitive dust emissions during demolition and construction activities • Emissions from construction equipment are below de minimis levels identified as thresholds for impact and conformity determination 	<ul style="list-style-type: none"> • Ensure proper operation and maintenance of construction equipment • Prohibit excessive idling of construction equipment • Consider requiring use of clean alternative fuels or retrofit emission control devices for heavy machinery with engines of greater than 60 horsepower that will be assigned to the project for greater than 30 consecutive days • Implement traffic management measures during construction • Implement appropriate controls to prevent the generation and mobilization of dust
Noise	<ul style="list-style-type: none"> • Generation of noise by construction equipment and activities 	<ul style="list-style-type: none"> • Contract specifications to ensure that noise levels at adjacent residences remain at less than 90 dBA • Restriction of work to 7:00 am to 9:00 pm local time • Properly maintain construction equipment • Provide advance notification to sensitive receptors regarding anticipated excessive noise levels
Stormwater and Water Quality	<ul style="list-style-type: none"> • Exposure of soil increases potential for erosion and sedimentation 	<ul style="list-style-type: none"> • Prepare and implement a Stormwater Pollution Control Plan in accordance with the <i>General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities</i> and the <i>2002 Connecticut Guidelines for Soil Erosion and Sediment Control</i>, as amended.
Vegetation, Wildlife, and Threatened and Endangered Species	<ul style="list-style-type: none"> • Potential for disturbance to species due to construction activity 	<ul style="list-style-type: none"> • Best management practices such as maintenance of a buffer zone between nesting sites and construction activity, and restriction of construction activities to paved areas
Solid Waste, Toxics, Pesticides, and Hazardous Materials	<ul style="list-style-type: none"> • Potential for asbestos and other hazardous materials in building demolition debris • Potential to encounter hazardous materials and/or petroleum products during excavation • Generation of solid waste consisting of construction and demolition debris 	<ul style="list-style-type: none"> • Pre-demolition survey will be performed to identify asbestos-containing materials. Asbestos abatement notification required by CTDPH. Disposal of construction waste, including asbestos, under a CTDEEP <i>Special Waste and Asbestos Disposal Authorization</i>. • Development of Soil Management Plan to address potentially contaminated soil encountered during construction • Construction and excavation activities performed in accordance with CTDEEP <i>General Permit for Contaminated Soil and/or Sediment Management</i>

Table ES-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Safety	<ul style="list-style-type: none"> • Potential for impacts to workers 	<ul style="list-style-type: none"> • Measures would be taken by CTDOT and the project contractor to avoid safety impacts during the construction period.
Utilities	<ul style="list-style-type: none"> • Temporary outages may be necessary to accommodate connections • Utilities could be damaged accidentally 	<ul style="list-style-type: none"> • Coordinate planned outages with the appropriate utility to minimize disruptions • Inform the airport tenants of anticipated outages • Relocate, maintain, or protect utilities from disturbance or damage

Conclusion

The Proposed Action will address the identified need for improved and expanded passenger terminal facilities to accommodate the anticipated growth in passenger activity and aircraft operations. The Proposed Action will meet the needs identified for BDL passenger handling and infrastructure to maintain acceptable demand/capacity levels and continue to promote acceptable levels of passenger service. In addition, the project is consistent with local, regional, and state planning initiatives and policies and will continue to support BDL as an agent of economic growth in the region.

The Proposed Action has the potential to result in adverse impacts to wetland resources. However, with mitigation measures in place, no significant impacts are anticipated to result from the Proposed Action.

In addition, short-term temporary impacts associated with the construction-phase of the project include potential impacts to traffic, parking, air quality, stormwater and water quality, hazardous materials and solid waste, and utilities. These impacts will be offset or reduced through construction-period mitigation measures presented in this EA/EIE.

Comments received during the public review period for the EA/EIE will be considered in making a final decision on the Proposed Action.

Public Participation and Agency Coordination

A Notice of Scoping for the Proposed Action was published in the Council of Environmental Quality (CEQ) Environmental Monitor on September 21, October 5, and October 19, 2010. Comment letters were received from the Department of Environmental Protection (now known as the Connecticut Department of Energy and Environmental Protection or CTDEEP) on October 20, 2010 and the Connecticut Department of Public Health (CTDPH) Drinking Water Section on October 12, 2010.

The preparation of this EA/EIE involved coordination with Federal and State resource agencies, municipal officials, and the regional planning agency, as well as the CTDOT Bureau of Aviation, airport personnel, and the consultant design team.

1 Introduction

The Connecticut Department of Transportation (CTDOT) proposes to construct a new passenger terminal in the area occupied by the existing Terminal B at Bradley International Airport (BDL) in Windsor Locks, Connecticut. The existing Terminal B complex would be demolished for construction of a new Terminal B and associated airside and landside improvements to provide airport facilities that would meet future air travel demand. Construction of the proposed improvements would occur in phases, with completion of the initial phase anticipated by 2018 and full-build anticipated by 2028. Key elements of the program include a new terminal building with concourses, a modified roadway system to access the terminal, new approach roadway alignments, a new parking garage and consolidated car rental facility, airside aircraft parking aprons and taxi lanes, airside and landside utilities, and power generation to the new terminal.

The proposed project, hereafter referred to as the Proposed Action, would be financed with Federal and State funds. Federal funds have been obtained through the Federal Aviation Administration (FAA); therefore, the Proposed Action is subject to the National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq.) and Section 106 of the National Historic Preservation Act. Under NEPA, the Proposed Action requires the preparation of an Environmental Assessment (EA) as outlined in the FAA Order 5050.4B, NEPA Implementing Instructions for Airport Actions.

The Proposed Action is also subject to the Connecticut Environmental Policy Act (CEPA) (Connecticut General Statutes [CGS] Sections 22a-1 through 22a-1h, inclusive, and, where applicable, CEPA regulations Sections 22a-1a-1 through 22a-1a-12, inclusive, of the Regulations of Connecticut State Agencies [RCSA]). The preparation of an Environmental Impact Evaluation (EIE) is required for the construction of new parking facilities that provide for an increase in capacity of 200 vehicles or more and that could have significant environmental impacts, as well as any other actions that may significantly affect the environment in an adverse manner, as identified in the CTDOT Environmental Classification Document (ECD).

This document is therefore a combined Federal EA and State EIE for the Proposed Action. The EA/EIE includes a description of the Proposed Action; the purpose and need for the action; an evaluation of the direct, indirect, and cumulative effects of the Proposed Action; identification of unavoidable adverse environmental affects; evaluation of alternatives; and a description of proposed mitigation measures. FAA is the lead Federal agency under NEPA, while CTDOT is the lead State agency under CEPA and the project sponsor.

1.1 Background

Located approximately 12 miles north of Hartford, Connecticut and 16 miles south of Springfield, Massachusetts, the approximately 2,356-acre Bradley International Airport (BDL) is located within the towns of Windsor Locks, Windsor, Suffield, and East Granby, Connecticut (*Figure 1-1*). Originally constructed as a military airfield in the 1940s, BDL began offering passenger and commercial airline service after World War II and was turned over

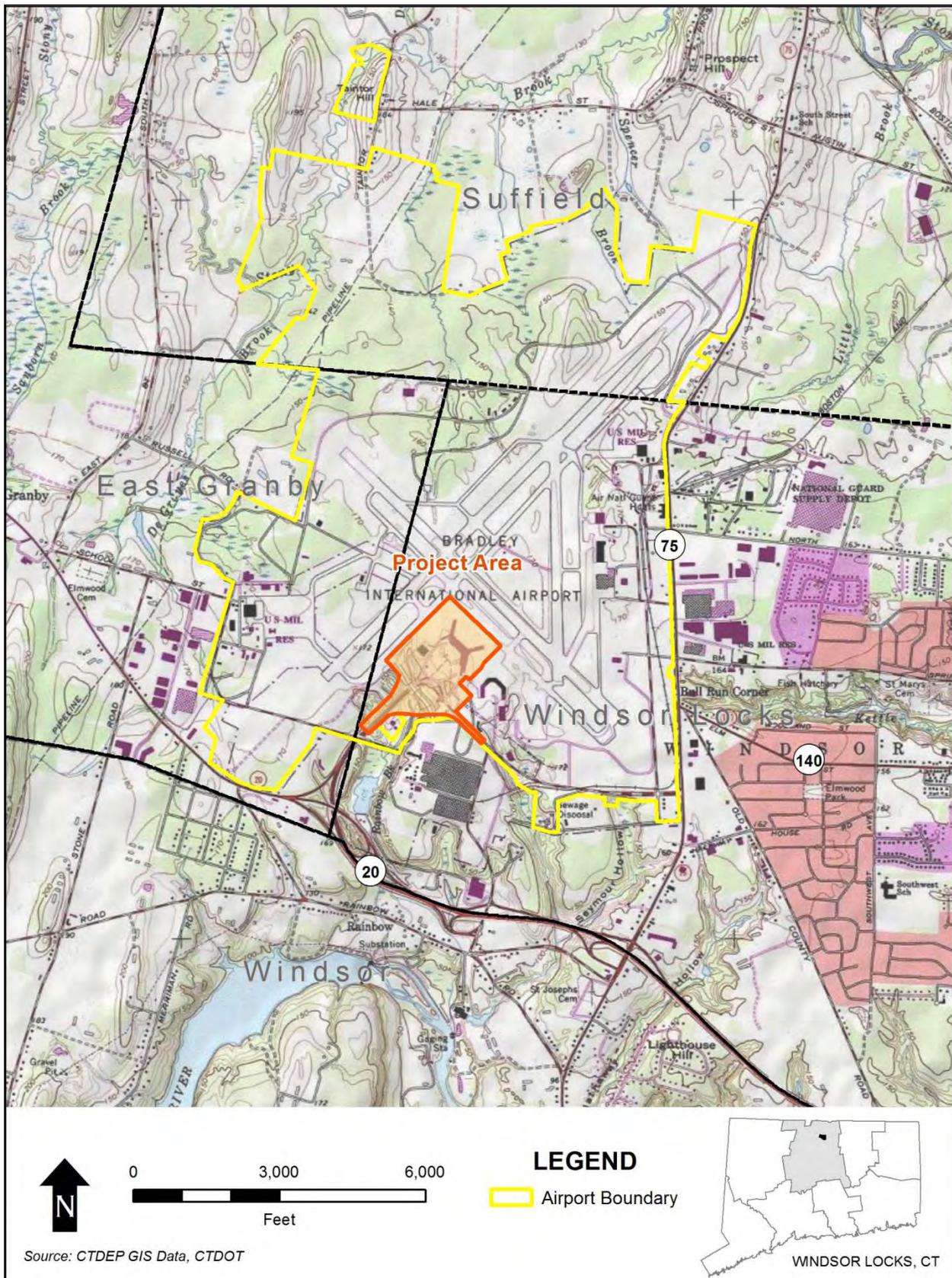


Figure 1-1. Site Location

to the State of Connecticut by the Federal government in 1948. Passenger Terminal B, originally called the Murphy Terminal, was constructed in 1949.

A second passenger handling facility with an 11-gate concourse, Terminal A, was constructed in 1985 and then expanded eastward. This expansion, called the East Concourse, included a new 12-gate concourse and was completed in 2003 (PB Aviation, 2005). This expansion of passenger handling facilities was the subject of a combined NEPA Environmental Assessment and CEPA Finding of No Significant Impact (FONSI) (FAA and CTDOT, 2000). Demolition of Terminal B was identified as part of the proposed action in the 2000 EA/FONSI, and alternatives to and analysis of potential environmental impacts associated with the demolition were addressed in that document.

In 2009, a total of 5,334,322 passengers passed through BDL and a total of 124,739 commercial, general aviation, military, and local aircraft operations² occurred (Urban Engineers and STV Inc., 2010). As of June 2010, there were 100 daily departures to 29 destinations provided (BDL, 2010) by 13 regional/commuter and national airlines – Air Canada, American Airlines, American Eagle, Continental Airlines, Continental Express, Delta, Frontier Airlines, Jet Blue, Southwest Airlines, United Airlines, United Express, USAirways, and USAirways Express (BDL, 2011).

Airside and landside facilities at BDL, as identified in the Airport Master Plan Update (PB Aviation, 2005), are shown schematically in *Figure 1-2* and are described in the following sections.

1.1.1 Airside and Landside Facilities

Airside facilities include three runways with associated lighting and navigational aids (NAVAIDS), parallel taxiways at each of the three runways, and apron areas (*Figure 1-2*). Runway 6/24 is considered the primary runway for BDL and is 9,510 feet long by 200 feet wide. Runway 15/33, the cross-wind runway, is 6,847 feet long by 150 feet wide. At 5,145 feet long and 100 feet wide, Runway 1/19 is a visual runway, without an instrument landing system. An FAA air traffic control tower (ATCT) is located at the airport at the northern intersection of the runways, and directs all traffic in the immediate airspace up to five miles from the ATCT.

Landside facilities at the airport can be grouped into passenger terminal facilities, parking facilities, and associated roadways. Passenger terminal facilities consist of the existing Terminal B, which is currently not in use. The existing Terminal B is approximately 224,600 square feet (SF) on four levels. Prior to the construction of the ATCT in its current location at the north intersection of the runways, the top two levels of Terminal B were used by the ATCT for FAA control function. Ticketing, concessions, and departure lounges were located on the second level; airline/airport operations and baggage handling were on the ground level; and mechanical equipment and storage was located in the basement level. The two-level International Arrivals

²Total operations consist of 94,194 commercial, 17,379 general aviation, 3,637 military, and 5,529 local aircraft operations (Urban Engineers and STV Inc., 2010).

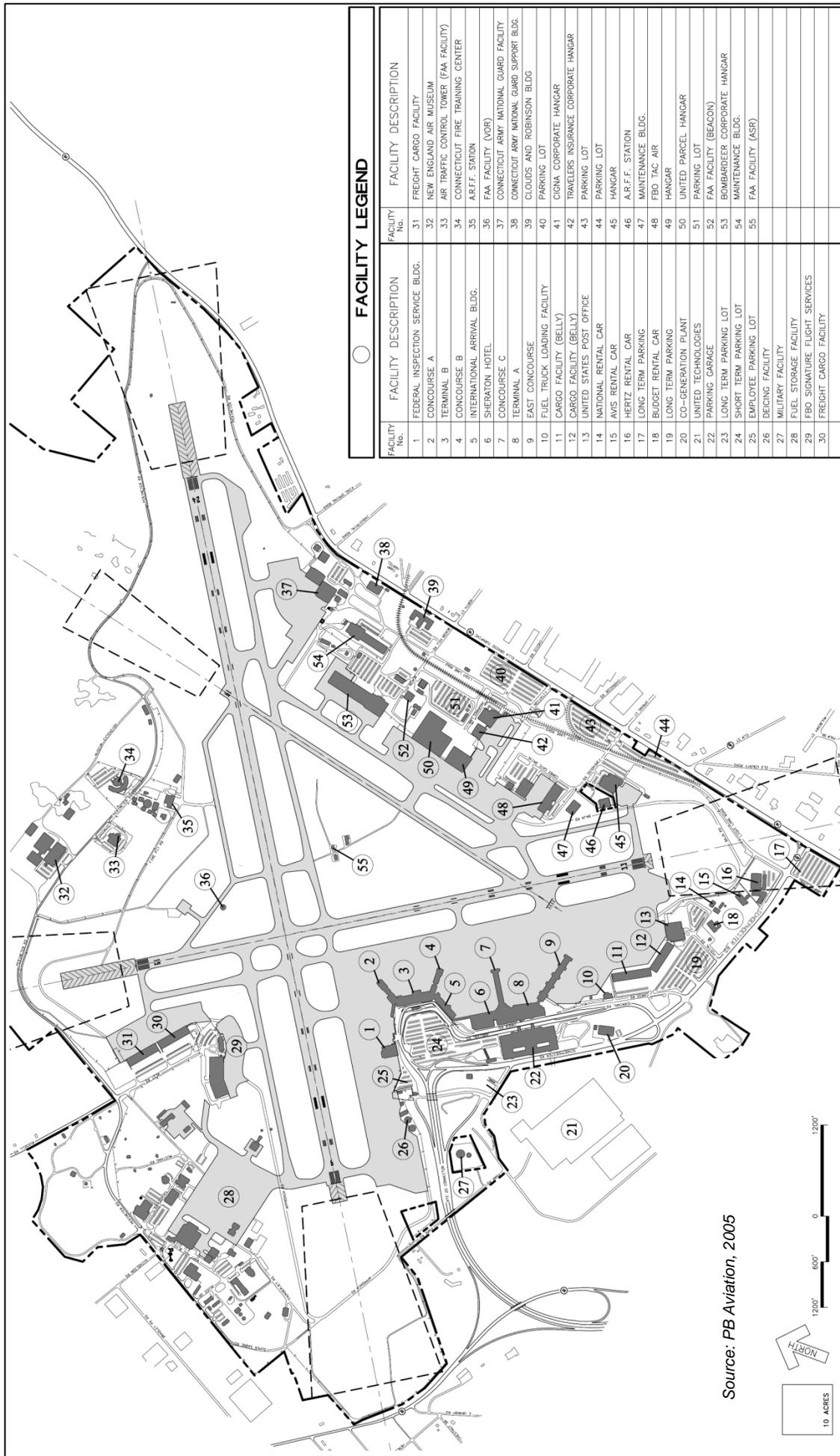


Figure 1-2. Existing Airport Facilities

Building (IAB) is also attached to Terminal A and is linked to Terminal A by a walkway in front of the Sheraton Hotel. Originally designed to accommodate scheduled international service, the IAB was more recently used for small commuter airlines and charter service. U.S. Customs and Immigration and Naturalization Services, and Federal Inspection Services (FIS) were also housed there for processing of non-scheduled international flights. The FIS has been moved to the IS Terminal, a two-story, 28,000-square-foot facility adjacent to Terminal B that opened in 2002. The IAB is currently not in service.

Terminal A is a three-level terminal with approximately 250,000 SF. The basement level houses mechanical equipment and building maintenance rooms. The first floor or ground level contains the baggage handling, rental car and hotel courtesy stations, and individual airline operations spaces. The front of the ground level provides access to the lower-level, arrivals roadway. The second floor contains ticket counters, lobby and concession areas, the Transportation Safety Administration (TSA), the US Air Club, and departure lounges. CTDOT offices are located in a mezzanine area above the ticket counter. This level also connects to the 11-gate West (formerly called “C”) Concourse and the 12-gate East Concourse.

Public parking is provided in five long-term lots (Lots 1, 3, 4, 5A and 5B) along Schoephoester Road with 24/7 shuttle bus service to Terminal A. Three of the lots (Lots 1, 3, and 4) are currently in operation (ParkBradley, 2011). Lot B provides both short- and long-term parking across from Terminal B, and a five-level parking garage is located in front of Terminal A. Constructed in 2000, the parking garage provides 1,237 short-term and 2, 216 long-term spaces and is connected to the departures roadway by pedestrian bridges. When all lots are operating, a total of approximately 7,264 spaces are available. In addition, 425 employee parking spaces are available in surface lots near Terminal B (PB Aviation, 2005).

Regional access to BDL is provided from Interstate 91, Exit 40, which connects to Route 20 and eventually joins Schoephoester Road. Access from the east is provided by Route 75. The terminal is currently served by a two-level looped roadway system which provides recirculation to Schoephoester Road (*Figure 1-2*), with departures located on the upper level and arrivals on the lower level.

1.1.2 Other Facilities

In addition to the airside and landside facilities, ancillary and support facilities, air cargo facilities, general aviation (GA), airline maintenance operations, and military facilities are located at BDL (PB Aviation, 2005).

Ancillary and Support Facilities

A fuel farm is located on the west side of the airport and is supplied by an underground pipeline originating in New Haven. The capacity is approximately 2.67 million gallons of jet fuel (an approximately 8-day supply) and 55,000 gallons of aviation gasoline or “avgas” (an approximately 50-day supply). Fuel is transferred to the aircraft aprons for refueling via truck. At the time of the Master Plan Update (2005), monthly usage was approximately 5-6 million gallons of jet fuel for commercial air carriers, 70,000 gallons of jet fuel for GA activities and 500 gallons of avgas for propeller aircraft.

Airport maintenance facilities house equipment for deicing, snow removal, and pavement, landscape and building maintenance, and are located on the east side of the airport.

Two Aircraft Rescue and Fire Fighting (ARFF) stations are located at BDL. The primary station is located near the threshold end of Runway 33, and the secondary station is located north of Runway 6/24. In addition, the Connecticut Fire Training School is located at the airport.

FAA facilities located at the airport include the ATCT, which also houses FAA administrative offices, radar, and other NAVAIDs. The Airport Surveillance Radar (ASR) is located in the midfield of the airport.

Air Cargo Facilities

Several buildings at the airport are utilized for air cargo operations, which include small airfreight operations such as the U.S. Postal Service, large freight items, and overnight express freight. The 2005 Master Plan Update estimated that approximately 272,200 SF of cargo building handling space at BDL was utilized in 2005.

General Aviation Facilities

GA facilities are located on the east and west sides of the airport and include aircraft storage, maintenance, apron space and administrative space. GA apron positions provide space for corporate and GA aircraft that offer both standard aircraft tie-down and unsecured parking. Current GA fixed base operators (FBOs) at the airport are Signature Flight Support and TAC Air (PB Aviation, 2005). Corporate aircraft are housed at BDL by Cigna/Aetna and Travelers.

Airline Maintenance Facilities

Bombardier, Canadair, and Embraer currently have maintenance facilities located at the airport.

Military Facilities

Both the Connecticut Air National Guard and the Connecticut Army National Guard are located at the airport. The Air National Guard 103rd Airlift Wing is located on the west side of the airport. The Army National Guard Army Aviation Support Facility (AASF) is located on the east side of the airport.

1.1.3 Airport Master Planning

A 20-year Airport Master Plan (AMP) for BDL was completed in 1993 (HNTB, 1993). The AMP recognized the need for expansion of terminal and parking facilities to both improve passenger service and accommodate increased passenger volume and aviation activity forecast to occur through 2010. The expansion of Terminal A and construction of the East Concourse and associated parking, roadway, and airside improvements were the first phase of a larger terminal expansion project. That first phase was the subject of a joint Federal Environmental Assessment/Finding of No Significant Impact (EA/FONSI) under NEPA and a State FONSI under CEPA (FAA and CTDOT, 2000). At full-build out, the project was envisioned as including demolition of Terminal B and the IAB, the construction of a new concourse and the expansion of terminal facilities, and possibly hotel space, at the site of the existing Terminal B (FAA and CTDOT, 2000). Although the impacts associated with the Terminal B demolition

were included in the previous EA/FONSI, the demolition activities were deferred while the Terminal A expansion was carried forward.

An Airport Master Plan Update (AMPU) was completed in 2005. The document provided an inventory of existing conditions, an update of activity forecasts, a review of demand and capacity and facility requirements, the identification and evaluation of development alternatives for a 20-year time span and a review of financial plans, airport plans, and environmental constraints at BDL (PB Aviation, 2005).

The AMPU identifies 36 individual projects, several of them multi-phase projects, to be completed in phases over the period 2003-2022. These include (PB Aviation, 2005):

- Terminal expansion
- Parking garage expansion
- Consolidated/relocated rental car facility in new parking garage
- Expanded belly cargo facilities
- Access improvements into the terminal/parking garage area
- New air cargo facility
- Airfield improvements
- Additional fuel receiving station
- Closure/decommission of the Very High Frequency Omni-Directional Range (VOR) NAVAID
- Relocation of the Airport Surveillance Radar (ASR)
- Relocation of Bradley Park Road
- Relocation of Perimeter Road
- Closure of Runway 1/19
- Improvements to the FIS
- Additional Emergency Response (ER) Unit
- Relocation of sensitive species habitat off-airport
- Improved landside signage

The AMPU identifies several specific airside and landside projects to meet the anticipated needs of BDL over a 20-year planning horizon. The expansion of passenger terminal facilities is among the projects, along with related projects such as improved access and an expanded parking garage. The AMPU identifies the area currently occupied by Terminal B as a preferred location based on its operational efficiency, proximity to the FIS facility, aircraft taxi distance, and compatibility with existing land use and development options beyond the 20-year AMPU timeframe (PB Aviation, 2005).

1.1.4 Demolition of the Existing Terminal B Complex

The existing Terminal B, encompassing the Murphy Terminal and its Concourses 'A' and 'B', as well as the concourse which previously functioned as the airport's International Arrivals Building, the grade-separated roadway, short-term parking, and the airfield lighting substation,

would be demolished in an initial phase of work. All airlines have been relocated from Terminal B to the recently renovated and expanded Terminal A. The remaining tenants, which include the Transportation Security Administration (TSA), the Connecticut State Police, and other minor service-oriented tenants, would be relocated prior to demolition of Terminal B. Landside pavements would be demolished in a sequence that maintains traffic circulation. Existing parking lots would be closed and pavement demolished as necessary to maintain as much surface parking as possible during construction. Maintaining existing utility services that run through the existing Terminal B would require installation of temporary utility networks for communications and power prior to the demolition of the terminal complex.

Demolition of Terminal B was addressed in the 2000 EA/FONSI. Consequently, a NEPA review and Federal approval has already occurred for that action. However, as described in Order 1050.1E (Section 402b(2)), if a proposed action is to be implemented in stages, a written re-evaluation of the continued adequacy, accuracy, and validity of the EA will be made at each major approval point that will occur more than three years after the issuance of the FONSI. Given that approximately 11 years have passed since the issuance of the 2000 EA/FONSI, the potential impacts associated with the demolition of Terminal B are re-evaluated in this document. The demolition of the Terminal B complex is addressed as part of the No Action alternative since the demolition will proceed regardless of the status of the new terminal construction.

1.2 Public Participation and Agency Coordination

A Notice of Scoping for the Proposed Action was published in the Council of Environmental Quality (CEQ) Environmental Monitor on September 21, October 5, and October 19, 2010. Comment letters were received from the Department of Environmental Protection (now known as the Connecticut Department of Energy and Environmental Protection or CTDEEP) on October 20, 2010 and the Connecticut Department of Public Health (CTDPH) Drinking Water Section on October 12, 2010. The scoping notice and comment letters are provided in *Appendix A*. Section 22a-1b of the CEPA statutes requires a scoping meeting be held if requested by more than 25 persons or an organization representing more than 25 people. A scoping meeting was not held, as no meeting requests were received from the public.

The preparation of this EA/EIE involved coordination with Federal and State resource agencies, municipal officials, and the regional planning agency, as well as the CTDOT Bureau of Aviation, airport personnel, and the consultant design team.

2 Purpose and Need

The results of the analysis presented in the Airport Master Plan Update (AMPU) assumed that the existing Terminal B would close and found that by 2022, while departure curbside requirements would remain essentially the same and requirements for baggage claim would be reduced by 172 linear feet (LF), requirements for ticket counter length and arrival curbside would increase by 519 LF and 652 LF, respectively. The AMPU projected a need for triple the number of employee parking spaces and a need for approximately double the number of overall parking spaces by 2022. Requirements for rental car space would also increase from 1,680 in 2005 to 8,219 by 2022 and an additional 20 gates would be necessary, bringing the total number of necessary gates to 43 by 2022. Consistent with the results of the 1993 AMP, this analysis demonstrated a need for the expansion of passenger terminal facilities to maintain reasonable demand/capacity ratios at BDL.

When preliminary engineering and programming for a new Terminal B began, air traffic forecasts were prepared to provide updated information for terminal programming. Following the 2005 AMPU, there was a steady decline in passenger traffic at BDL. Consequently, rather than being near the 8.7 million annual passenger forecast for 2009 reported in the 2005 AMPU, actual passenger traffic was approximately 39% lower at 5.3 million. The forecast report determined that a divergence between the forecast presented in the 2005 AMPU and actual passenger traffic was significant enough that passenger traffic would not return to the trend line forecast in the 2005 AMPU and a fully-revised forecast was prepared (InterVISTAS, 2010).

The updated forecasts, prepared in 2010, are unconstrained forecasts – they have been developed without consideration of the ability of the current facilities to handle the forecast aircraft traffic. The base or most likely forecast of total enplaned/deplaned passengers is presented in *Figure 2-1* and *Table 2-1*. Total aircraft operations are also anticipated to increase to reflect the passenger demands. *Figure 2-2* and *Table 2-2* show the base or most likely commercial forecast operations. Peak hour forecasts were also prepared to aid in infrastructure planning and are summarized in *Table 2-3*.

Table 2-1. Forecast of Enplaning/Deplaning Passengers, Calendar Year 2008-2028

Year	Domestic	International	Total
2008*	5,999,249	113,730	6,112,979
2009*	5,291,180	43,142	5,334,322
2013	6,368,000	177,000	6,545,000
2018	7,376,000	276,000	7,652,000
2023	8,322,000	333,000	8,655,000
2028	9,267,000	389,000	9,656,000
Annual Average Growth Rate			
2008-09*	-11.8%	62.1%	-12.7%
2009-13	4.6%	42.3%	5.2%

Table 2-1. Forecast of Enplaning/Deplaning Passengers, Calendar Year 2008-2028

Year	Domestic	International	Total
2013-18	3.0%	9.3%	3.2%
2018-23	2.4%	3.8%	2.5%
2023-28	2.2%	3.2%	2.2%

* Indicates actual traffic volumes in 2008 and 2009. All other figures are forecasts.

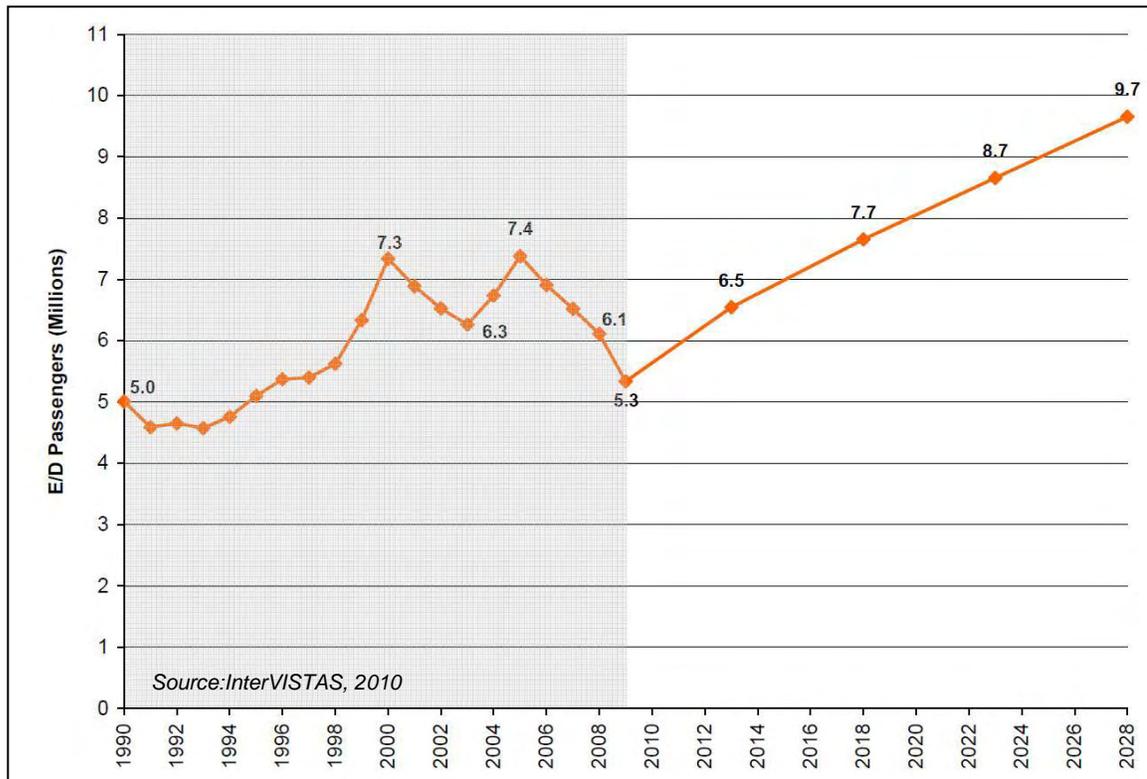


Figure 2-1. Historical and Forecast Enplaned/Deplaned Passengers (1990-2028)

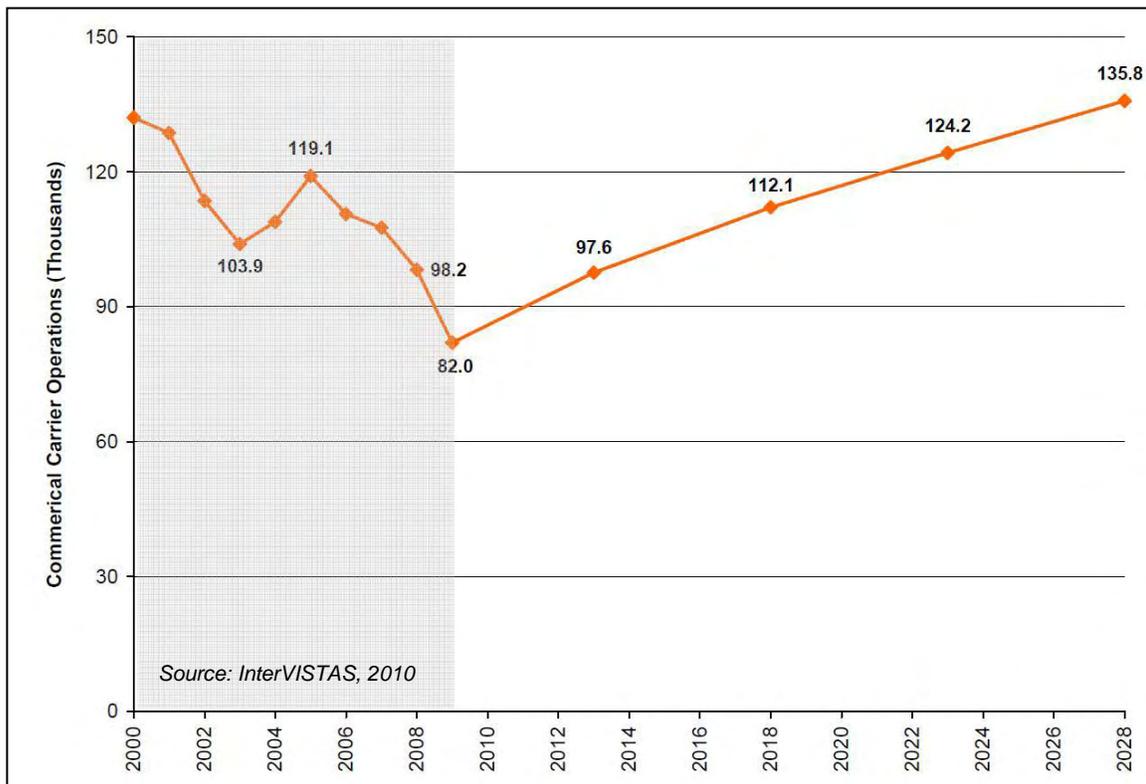


Figure 2-2. Historical and Forecast Commercial Aircraft Operations (2000-2028)

Table 2-2. Historical and Forecast Commercial Aircraft Operations, Calendar Year 2008-2028

Year	Domestic Passenger	International Passenger	All-Cargo	Total
2008*	75,333	5,736	17,125	98,194
2009*	65,361	4,349	12,311	81,021
2013	76,800	5,900	15,000	97,600
2018	86,500	7,500	18,100	112,100
2023	95,000	8,600	20,600	124,200
2028	103,000	9,700	23,100	135,800
Annual Average Growth Rates				
2008-09*	-13.2%	-25.0%	-28.2%	-16.5%
2009-13	4.1%	8.2%	5.1%	4.4%
2013-18	2.4%	4.9%	3.8%	2.8%
2018-23	1.9%	2.8%	2.6%	2.1%
2023-28	1.6%	2.4%	2.3%	1.8%

* Indicates actual traffic volumes in 2008 and 2009. All other figures are forecasts.

Table 2-3. Peak Hour Passenger and Commercial Aircraft Operations

Year	Peak Hour Arrivals		Peak Hour Departures	
	Passengers	Operations	Passengers	Operations
2009	1,271	12	1,490	17
2013	1,480	14	1,720	20
2018	1,680	16	1,930	20
2023	1,870	18	2,110	24
2028	2,050	20	2,280	26

Total airport demand for gates was estimated based on the updated passenger and aircraft operations forecasts in order to identify a balanced terminal program to support the anticipated gate demand. Terminal A currently has 23 gates. However, due to anticipated changes in aircraft wingspan over the forecast period, an effective reduction in the number of gates from 23 to 20 is anticipated to occur at Terminal A. Forecast demand by 2028 is for a total of 29 to 31 gates, revealing a deficiency of 9 to 11 gates by 2028. Using the anticipated levels of growth identified in the updated forecasts, the demand in Terminal B would be 3 to 4 gates by 2018, 6 to 8 gates by 2023, and 9 to 11 gates by 2028, with a total potential development of 19 gates. The corresponding terminal area to meet the gate and activity requirements is 506,100 GSF (Hirsch Associates, 2010).

The need for the parking garage/ConRAC was identified by CTDOT based on the AMPU (2005). Specific sizing needs associated with the updated passenger and aircraft operations forecasts were identified by circulating a questionnaire to all the rental car companies serving BDL to survey them regarding present facilities and requirements for future facilities based on an anticipated growth rate of 32.5% over a 10-year period. That information, combined with utilization metrics for each component of the ConRAC, was used to determine the minimum quantity of functional facilities required for the ConRAC (Urban Engineers and STV, Inc., 2010).

Based on that analysis, program needs for a ConRAC were estimated to consist of 35 counter positions for customer service (8,457 SF); 1,085 ready/return spaces (566,812 SF); and 146,006 SF for fueling, washing, and maintenance in a quick turnaround (QTA) facility, for a total ConRAC size of 721,274 SF. This is similar, but slightly smaller than the space need of 781,322 SF indicated by the questionnaire responses, primarily due to a smaller number of counter positions and ready/return spaces (Urban Engineers and STV, Inc., 2010).

In summary, the need for a new passenger terminal facility is a result of:

- Forecast growth in passenger activity and aircraft operations, which will require a total of up to 31 gates by 2028. By 2028, Terminal A will only have 20 gates, requiring construction of up to an additional 11 gates to maintain acceptable levels of service at BDL.
- Age and current condition of the existing Terminal B (the Murphy Terminal) which makes renovation impracticable.

Parking, roadway and other infrastructure improvements/developments are needed to support the new passenger terminal development, provide necessary resources to airport tenants, and continue to provide acceptable levels of passenger service as annual passenger traffic increases.

The purpose of the Terminal B replacement is to meet the needs identified for BDL passenger handling and infrastructure over the next 20 years in order to maintain acceptable demand/capacity levels and continue to provide acceptable levels of passenger service. The purpose of the parking garage/ConRAC is to both meet the demand that has existed for at least a decade for ready/return and QTA in close proximity to the terminal complex and to provide public parking to replace spaces in Lot B that would be lost due to the ConRAC facility construction. Construction of the facility also allows for additional public parking to be added to the airport to accommodate the demand as annual numbers of passengers rise over the next 20 years. Similarly, the purpose of the other elements of the Proposed Action is to support the terminal development by providing adequate airside and landside infrastructure.

3 Proposed Action

The Proposed Action is the construction of a new passenger terminal in the area occupied by the existing Terminal B at Bradley International Airport (BDL) in Windsor Locks, Connecticut. A new Terminal B and associated airside and landside improvements would be constructed following demolition of the existing Terminal B complex.

The project area associated with the Proposed Action, shown in relation to the overall airport in *Figure 3-1*, generally includes the existing Terminal B complex to the northwest of the Sheraton Hotel and the surrounding concrete apron, the short term parking lot in front of Terminal B, the Federal Inspection Services (FIS) building and area between the FIS building and the aircraft deicing facility, the existing loop roadway network associated with Terminal B, Schoephoester Road, and a portion of the Bradley Airport Connector, the long-term surface parking lot between Schoephoester Road and Hamilton Road, and the area south of Hamilton Road. Existing conditions within the project area are depicted in *Figure 3-2*.

The Proposed Action is the result of preliminary engineering and architectural evaluations of alternatives for developing airport facilities that could satisfy future air travel demand at BDL, consistent with the objectives identified in the 2005 Airport Master Plan Update for BDL. The recommended alternative that came out of the Preliminary Engineering and Programming effort for the redevelopment of Terminal B was investigated further by CTDOT, the Airport, and the consultant design team and brought to a Schematic Design level, representing completion to approximately a 10% design level. This alternative, shown in *Figure 2-3*, has been carried forward in this EA/EIE as the Proposed Action.

3.1 Terminal and Landside Program

The proposed terminal and landside program includes the following major elements, which are shown schematically in *Figure 3-3* (Urban Engineers and STV Inc., 2011):

Construction of a New Terminal B

The proposed new Terminal B is located in the vicinity of the existing Terminal B complex to the east of the Sheraton Hotel and Terminal A at BDL. The schematic design of the new Terminal B incorporates a number of functional and operational criteria that were established in the preliminary engineering phase of the project. These criteria included terminal sizing to meet forecasted aircraft and passenger activity, a modular plan that can be incrementally expanded, short walking distances to and from the gates, a logical interface with the parking garage/ConRAC, connections with the existing Sheraton Hotel and Terminal A, airside facilities with the flexibility to accommodate a wide range of aircraft, and the ability to accommodate international arrivals within the terminal footprint.

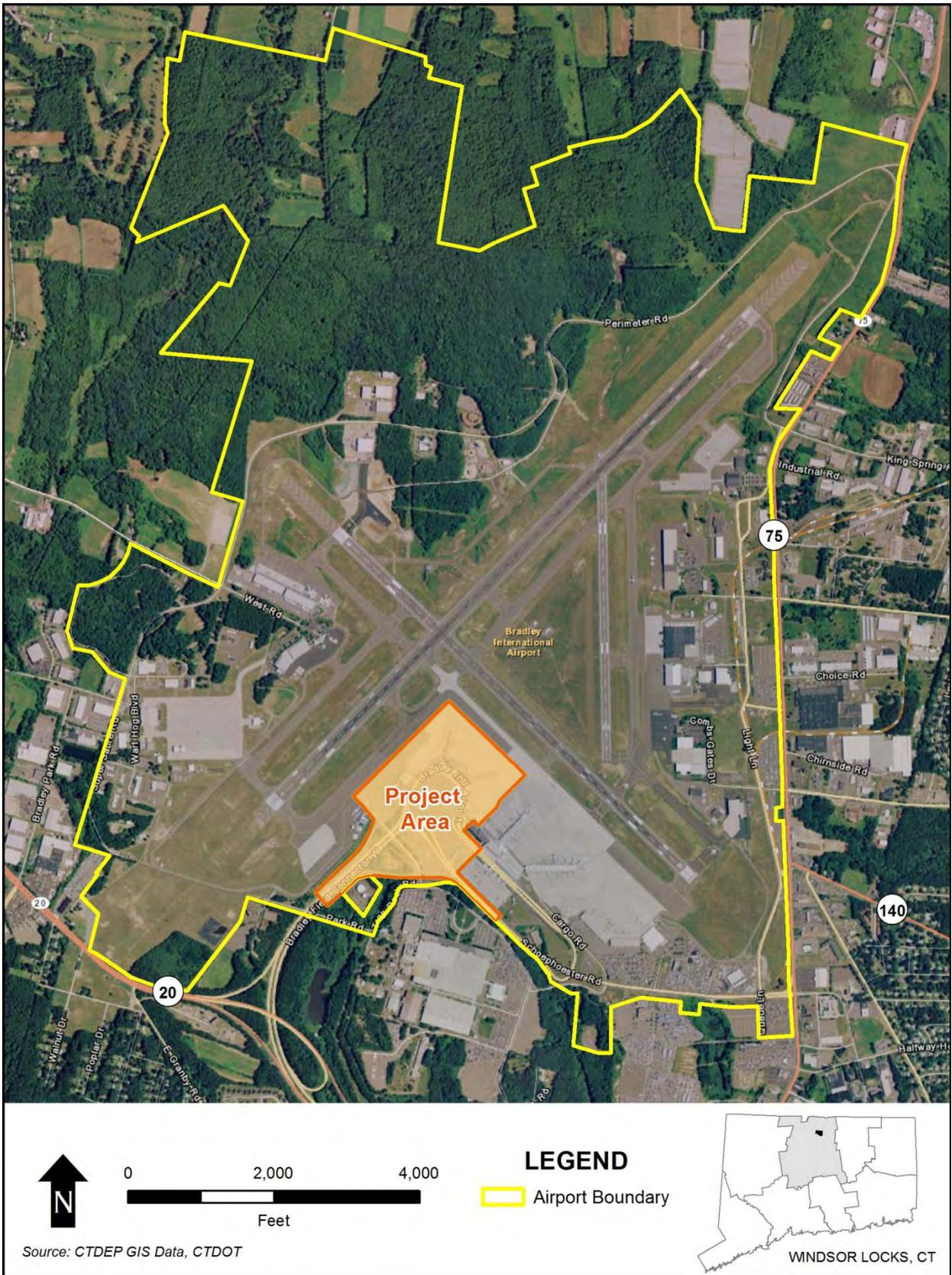


Figure 3-1. Project Area

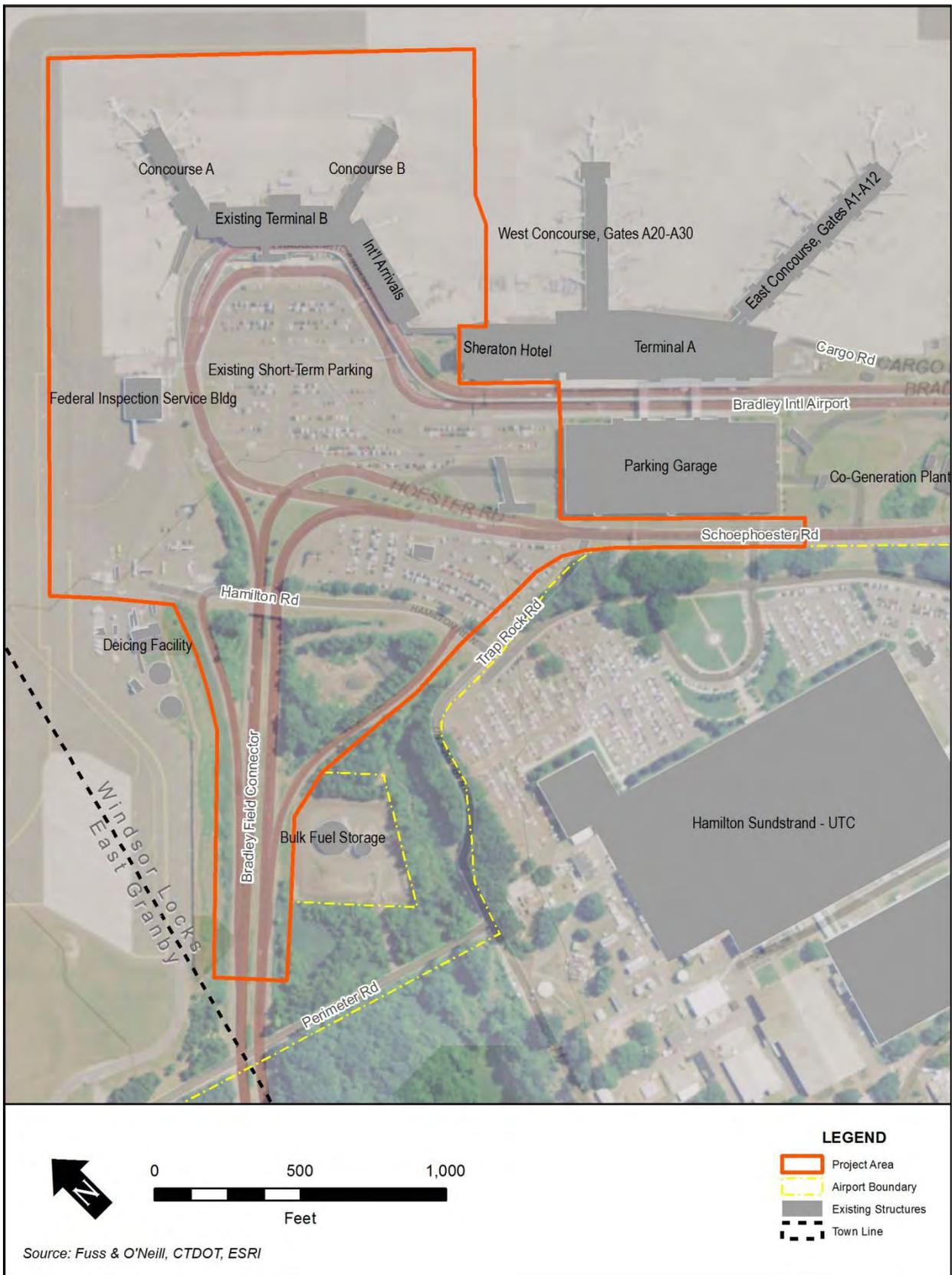


Figure 3-2. Existing Conditions

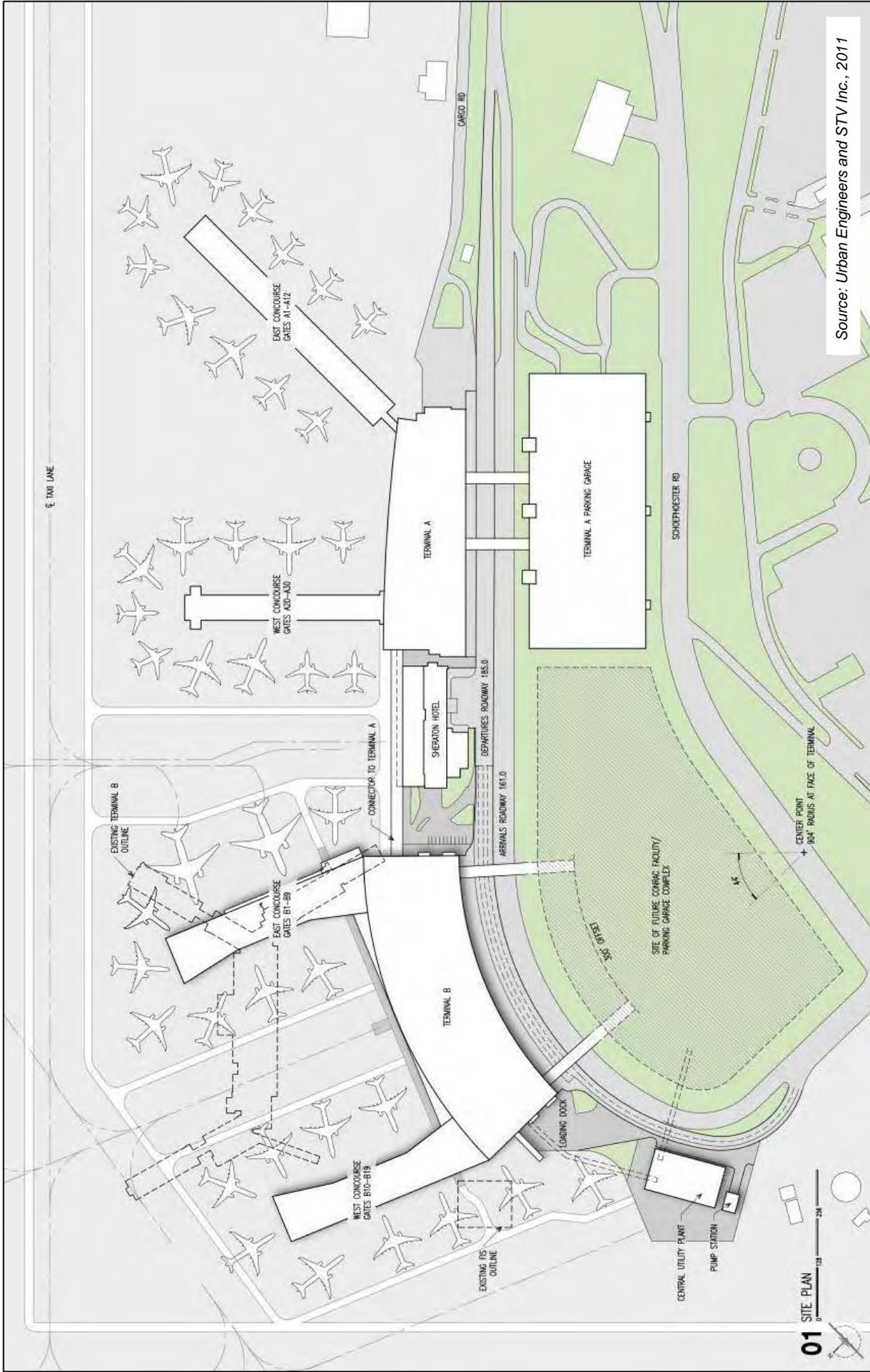


Figure 3-3. Proposed Action – Terminal, Landside, and Airside Facilities

The new Terminal B is designed as a north/south oriented ‘U’-shaped structure, consisting of a multi-level landside headhouse and dual gate concourses to the west and to the east. The concourses are designed with 19 gates to accommodate variable-sized aircraft; including two international widebody gates. The north/south orientation of the terminal offers the opportunity to optimize project sustainability goals through maximizing potential for use of daylighting.

The schematic design for the new terminal building includes a new Federal Inspection Services (FIS) facility located within the new terminal. The new FIS facility would service international flights associated with both Terminal A and Terminal B.

Landside Utility Modification and Relocation

The proposed project would require extensive modification and relocation of landside utilities including sanitary sewer, water, stormwater, glycol collection system, electric, gas, and communications. Existing utilities would generally be relocated or re-routed outside of the footprint of the new Terminal B and proposed parking garage/ConRAC facility.

Construction of a New Central Utility Plant

A new Central Utility Plant (CUP) would be constructed west of the terminal building to service the new Terminal B complex. The CUP is sized to meet the anticipated power and heating/cooling demands of the terminal complex at full-buildout. The existing Cogeneration Plant at BDL services Terminal A only and would not service the new Terminal B.

The proposed CUP includes a switchgear room, generator room, utility support rooms, and a loading dock. A utility tunnel is planned to connect the CUP to Terminal B. Within the plant, the major mechanical system components include engine generator units, fuel cells, absorption chiller, centrifugal chillers, heat exchangers, boilers, various types of switchgear, and incoming utility services.

Roadway and Viaduct Relocation/Construction

The project includes the construction of a multi-level roadway network that would deliver vehicles to the new terminal’s arrival and departure functions, as well as to a terminal loading dock. The roadway network for Terminal B would be an extension of the existing upper (Departures) and lower (Arrivals) level network in place at Terminal A. The existing Departures viaduct would be extended to service the new terminal while maintaining the arrival roadway under the viaduct, and Schoephoester Road would be realigned to the south to allow for a proposed at-grade intersection. The exit toll plaza for the existing public parking garage adjacent to Terminal A would be reconfigured. No work is proposed on the roadway network beyond the locations east of the Sheraton Hotel in front of Terminal A, or on Schoephoester Road beyond the western edge of the existing public parking garage.

Traffic leaving/recirculating the Terminal B area would connect to Schoephoester Road at a proposed at-grade intersection (*Figure 3-4*). As discussed in *Section 4*, a flyover alternative was also evaluated. While both alternatives operate at a high level of service, the at-grade intersection alternative was found to be more cost-effective.

Construction of a New Parking Garage and Consolidated Car Rental Facility

The project includes the construction of a new combined public parking garage and consolidated Rent-A-Car (ConRAC) facility within a single multi-level structure. The parking garage/ConRAC facility is receiving no Federal funding, but is included in this joint CEPA/NEPA document since evaluation of the action is required under CEPA. Although the development of the parking garage/ConRAC facility would proceed regardless of any new terminal construction, for purposes of efficiency in the CEPA process, the projects are being evaluated in a single document.

The proposed parking garage/ConRAC facility would be located to the northwest of the existing parking garage, across from the new terminal. Two elevated pedestrian connectors would link the parking garage/ConRAC to the new Terminal B.

The first floor would be approximately 201,300 gross square feet (GSF) and include a toll plaza and ready/return vehicle parking. Levels 2 and 3 would have approximately 183,000 GSF for ready/return vehicle parking, and the first three levels combined would offer approximately 2,250 ready/return vehicle spaces. The quick turnaround (QTA) facility with fueling, maintenance, and wash bays would be located on the west end of the garage above the toll plaza and would be a multi-level facility with 73,200 SF split among levels 2, 3 and 4. Level 4, shared with the QTA, would provide 500 public parking spaces. Level 5 would provide 700 public spaces, for a total of 1,200 spaces. Additional levels would create an additional 700 public spaces per level, for a total of 2,600 public spaces in a seven-level garage.

3.2 Airside Program

The proposed airside program (*Figure 3-4*) consists of demolition of the existing FIS building, which is located west of the existing Terminal B and short-term parking lot, and demolition of the existing concrete apron to allow for the new apron, including changes to grading, drainage and geometry. The proposed airside construction includes a new concrete apron, drainage system, hydrant fuel, fire water, apron flood lighting, passenger boarding bridges and other incidental construction necessary to service the proposed terminal (Urban Engineers and STV Inc., 2011).

The schematic design of the apron for the new terminal includes taxi lanes, taxiways, and a service road to accommodate the type of aircraft and aircraft movements that are anticipated at the terminal. Aircraft operations in and around the new Terminal B concourses would be similar to current aircraft operations at Terminal A (Urban Engineers and STV Inc., 2011).

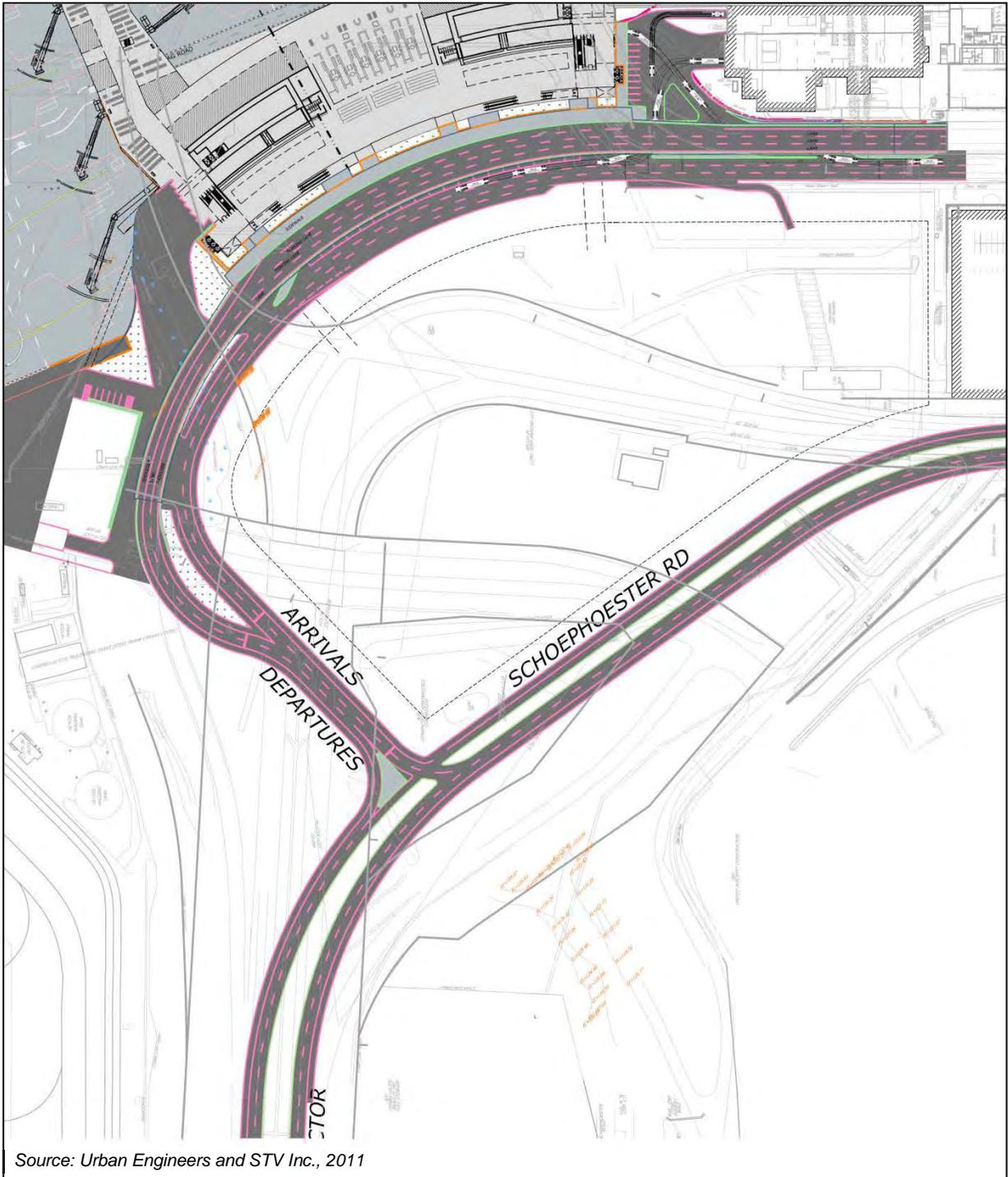


Figure 3-4. Proposed Action – Landside Roadway Configuration

3.4 Project Phasing

The Terminal B redevelopment project is conceived as a phased program. The parking garage/ConRAC and most of the roadway network would be constructed in an initial phase since demand for the parking garage/ConRAC facility already exists for passengers arriving at Terminal A. The new Terminal B would be constructed in two later phases – an initial segment of Terminal B and the upper roadway (viaduct) serving Terminal B, would be constructed in a second phase with an estimated completion date of 2018, while a second segment of the terminal would be constructed in a final phase, which is anticipated by 2028 (i.e., full-build). Terminal construction phasing will also be based on any updated demand forecasts. Phasing for the construction of the CUP would be determined during subsequent design based on refined estimates of the power requirements for the Terminal B complex.

The phased construction of the new terminal complex would require utility services to be designed to meet the full-build demands while also serving the facilities that come on-line prior to build-out. The utility system modifications are planned to maintain existing services to the airfield, existing terminal complex, Sheraton Hotel, existing FIS building and parking garage systems during all phases of construction. The existing Terminal B complex and the utility network that currently serves the terminal would be demolished. Temporary utility services would be required to the FIS facility while demolition and new construction proceed (Urban Engineers and STV Inc., 2011).

3.5 Project Cost

The total estimated construction cost of the enabling projects (i.e., demolition of the existing Terminal B complex, landside utility modification and relocation, construction of a new Central Utility Plant, roadway and viaduct relocation and construction, and miscellaneous airside improvements) is \$50 million. The total estimated cost for construction of the first phase of the new Terminal B is between \$580 and \$600 million. These estimated costs exclude construction of the parking garage/ConRAC facility.

4 Alternatives Considered

This section compares the No Action, the Proposed Action, and reasonable alternatives to achieve the project purpose and need. The discussion of alternatives focuses on the placement and configuration of the terminal building and associated landside roadway facilities. The placement and configuration of other elements of the Proposed Action are directly related to the terminal and roadway facilities.

All of the alternatives, with the exception of the No Action alternative and rehabilitation of Terminal B, are located within the same approximate footprint that is already fully developed, involve similar infrastructure rehabilitation and development, and would have similar environmental consequences as well as statutory and regulatory requirements. Environmental impacts, conceptual mitigation measures, and, applicable laws, regulations, and permits associated with the No Action and Proposed Action are described more fully in later sections of this document.

4.1 No Action Alternative

Under the No Action alternative, there would be no change to the existing facilities at BDL other than the demolition of the existing Terminal B complex, which was included in the 2000 EA/FONSI but deferred while the Terminal A expansion was carried forward. The demolition of the Terminal B complex is included in the No Action alternative since the demolition will proceed regardless of the status of the new terminal construction. The new Terminal B facility and associated Central Utility Plant, the parking garage/ConRAC facility, and other airside and landside improvements identified in Section 1, would not be constructed. The No Action alternative assumes continued use of the current passenger handling and parking facilities for the foreseeable future. This alternative would result in no upgrade or expansion of terminal and parking facilities and an anticipated future decline in passenger service and airline operational efficiency given the projected rise in the number of annual enplanements/deplanements at the airport.

The No Action alternative was rejected as the preferred alternative due to its inability to meet the projected needs for passenger handling at BDL, and the anticipated decline in service that would result. This alternative serves as a baseline for comparison with the preferred alternative. Consideration of the environmental consequences of the No Action alternative also satisfies the requirement specified in FAA Order 5050.4B for re-evaluation of the terminal demolition due to the length of time (greater than 3 years) since the issuance of a Finding of No Significant Impact (FONSI) for the 2000 EA/FONSI, which addressed the demolition of the existing Terminal B.

4.2 Rehabilitation of Terminal B

The rehabilitation of Terminal B was considered and rejected in the 2000 EA/FONSI due to the age and condition of the building. The AMPU (2005) reports that a study of rehabilitation of Terminal B to replace aged infrastructure, meet current building code requirements and meet the forecast demand for additional gates found that it would be less expensive and more

prudent to demolish and replace the Murphy Terminal rather than attempt to renovate and rehabilitate it. Consequently, rehabilitation of Terminal B was determined to be infeasible.

4.3 Alternative Sites

4.3.1 Terminal Facilities at Other Airport Locations

New, remotely-located terminal facilities were analyzed in the AMPU (2005) and determined not to be cost-effective for BDL. Consequently, construction of terminal facilities at a location remote from the existing terminal complex was determined to be infeasible.

4.3.2 Alternative Terminal Configurations

As described in the AMPU (2005), given the airport layout and existing land uses, the available envelope for terminal development is relatively fixed. The AMPU considered terminal development (1) in the area east of Terminal A, (2) the area west of Terminal A and southwest of the existing Terminal B footprint, and (3) the area northwest of Terminal A over the footprint of the existing Terminal B. The three alternatives were evaluated based on compatibility with existing land use, access and security, future expansion potential, and potential environmental impacts.

While all alternatives ranked “good” in the preliminary analysis, further detailed analysis considered operations, passenger convenience, access, terminal capacity, development compatibility and future flexibility, environmental constraints, constructability, and demolition and construction costs. The detailed analysis determined that construction to the east of Terminal A was the least favorable option because of lack of overall operational efficiency and the cost associated with implementation. Based on that analysis, westward expansion either inline with Terminal A or over the footprint of Terminal B was significantly more favorable. The AMPU found that the placement over the footprint of the existing Terminal B ranked slightly lower, but offered lower project costs and higher passenger convenience.

As a result of the AMPU, westward expansion of the terminal facility to the east was not determined to be the most feasible and prudent alternative, and a westward expansion was carried forward for preliminary engineering and programming.

As part of the preliminary engineering and programming, eight initial terminal site alternatives were considered (Urban Engineers and STV, Inc., 2010). These alternatives were clustered into three groups:

- Group 1 – unit terminal with single-loaded concourse (Concepts 1A, 1B, 1C, 1D in *Figure 4-1*)
- Group 2 – landside terminal with a remote airside satellite (Concept 2 in *Figure 4-2*)
- Group 3 – unit terminal with two dual-loaded piers (Concept 3A, 3B, and 4 in *Figure 4-2*)

Group 1 terminal alternatives provide the minimum number of gates capable of accommodating the design aircraft, a B-757w, but maximize the amount of remaining area available for development of a parking garage/ConRAC facility. Group 2 and Group 3 terminal alternatives provide for the maximum number of B-757w capable gates. The Group 2 alternative limits the range of aircraft that could be accommodated and does not provide a FIS location that is convenient to the terminal. The Group 3 terminal alternatives allow for phased development, but leave a limited area available for development of a parking garage/ConRAC facility.

The Group 2 alternative was eliminated from further consideration since the lack of passenger convenience is not consistent with the image of BDL as being a passenger-friendly airport.

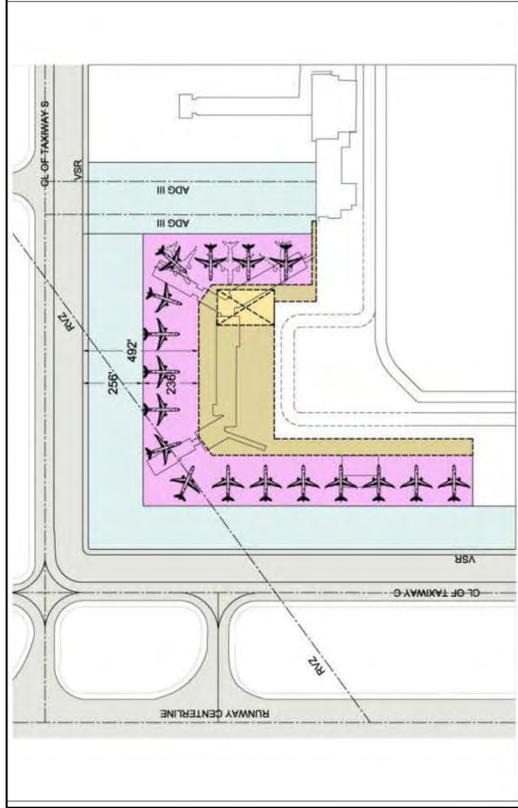
4.4 Alternative Designs

4.4.1 Terminal

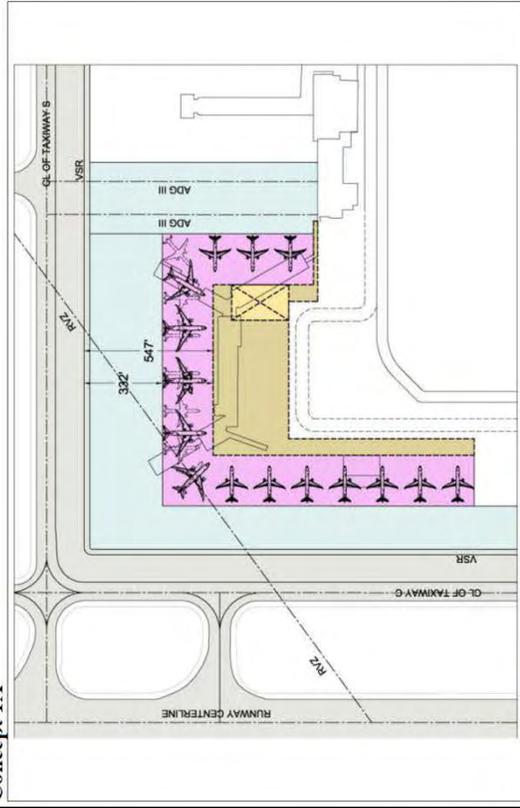
Design variations capable of accommodating unit terminals with either single-loaded or dual-loaded concourses were narrowed to two alternatives, referred to as Concept 2 and Concept 4 (*Figure 4-3*). These two alternatives are consistent with an image of convenience and simplicity that CTDOT wishes to maintain for BDL, satisfy the program space requirements, provide flexibility regarding construction and landside development phasing, and maximize the amount of potential terminal curbside for safe and efficient vehicle circulation.

Site plans, diagrammatic floor plans, and three-dimensional models were developed for Concept 2 and Concept 4. A set of evaluation criteria were developed for the two concepts, and they were compared based on terminal, airside and landside function and operation. The evaluation was weighted to place more emphasis on critical elements such as meeting program requirements, flexibility for expansion, number of gates and gate flexibility, site planning and utilization, and wayfinding. The evaluation criteria associated with the major areas of the terminal were also weighted, with terminal and airside elements receiving 40% each of the overall score and the landside element receiving the remaining 20%.

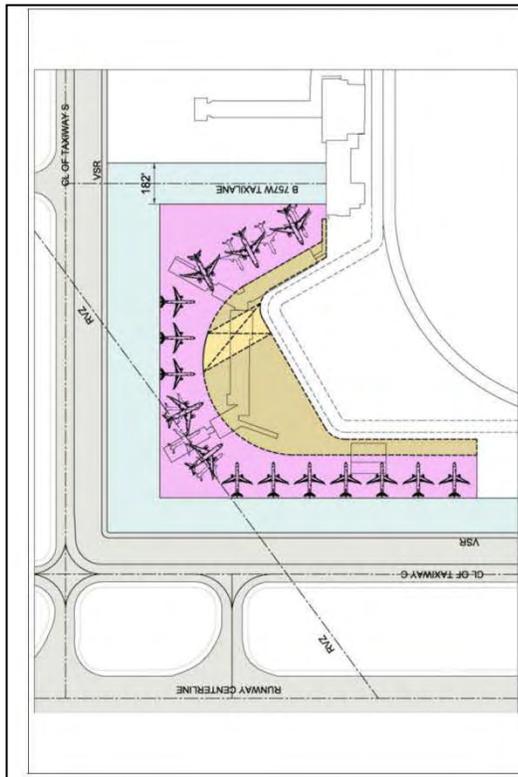
Figure 4-4 shows the concept evaluation matrix, the various criteria and their associated importance factors for the terminal, airside, and landside elements. As shown in the matrix, Concept 4 received the higher scores in all areas. Weighting of the scores did not alter the ranking, and the conclusion reached in the Preliminary Engineering and Programming Report (Urban Engineers and STV, Inc., 2010) was that the evaluation criteria favored Concept 4 over Concept 2. As a result, Concept 4 was selected as the most feasible and prudent alternative to be carried forward into schematic design and is the preferred alternative evaluated as the Proposed Action in this EA/EIE.



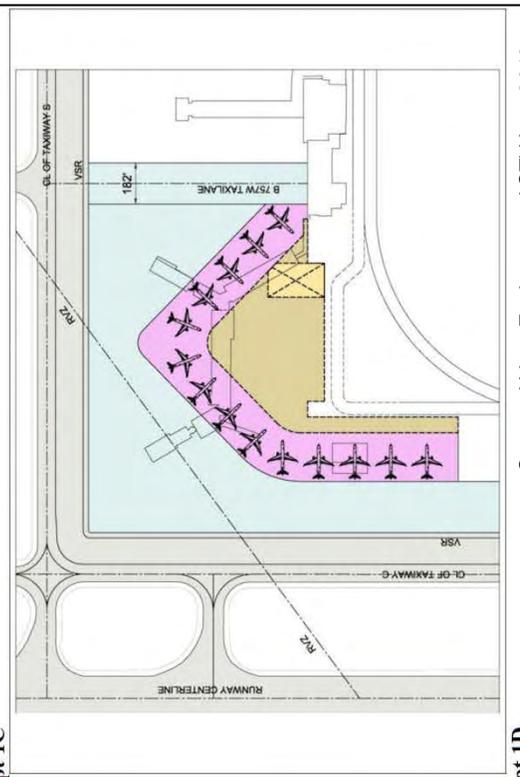
Concept 1A



Concept 1B



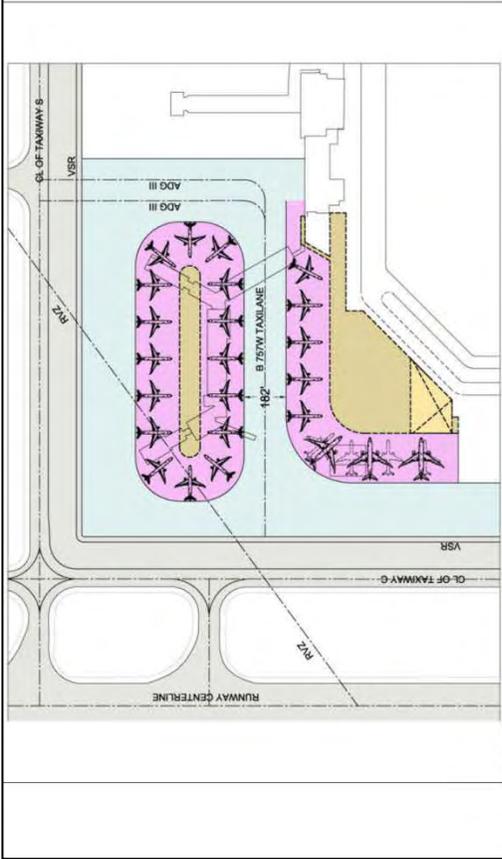
Concept 1C



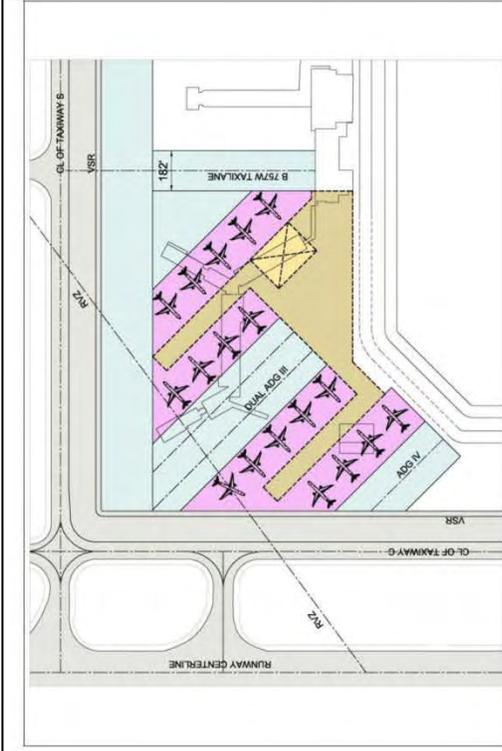
Concept 1D

Source: Urban Engineers and STV Inc., 2010

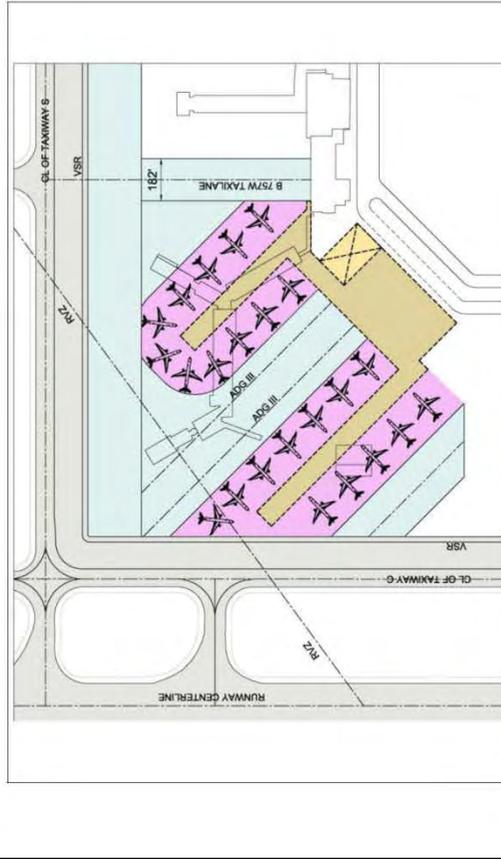
Figure 4-1. Terminal Site Alternatives – Group 1



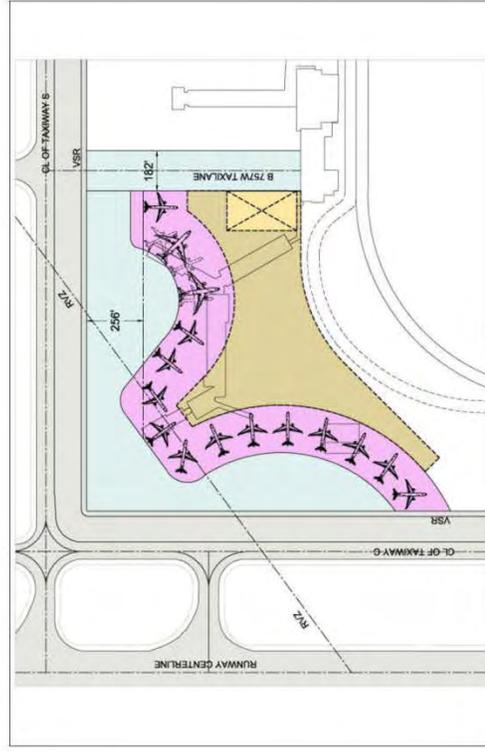
Concept 2



Concept 3B



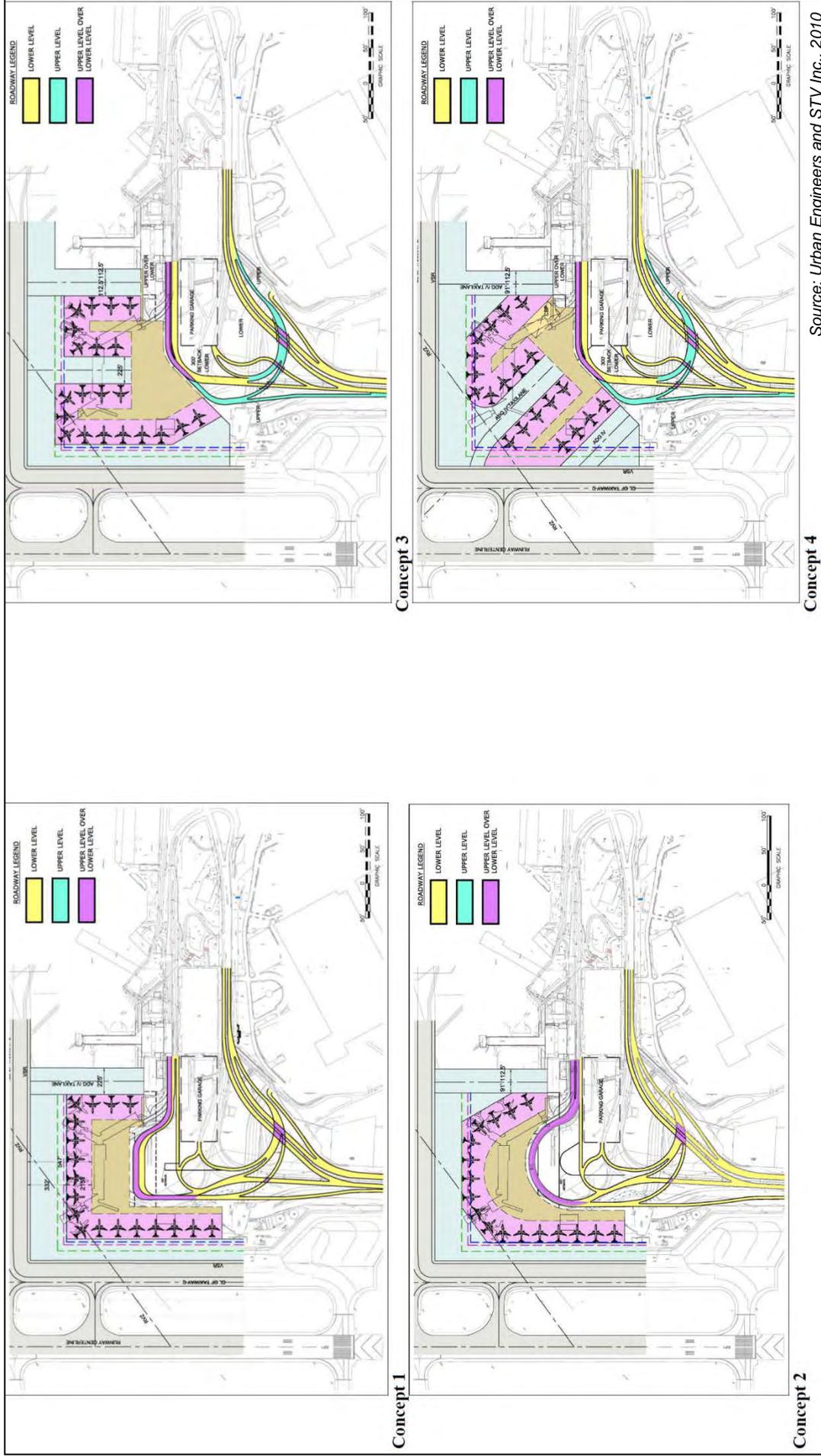
Concept 3A



Concept 4

Source: Urban Engineers and STV Inc., 2010

Figure 4-2. Terminal Site Alternatives – Group 2 and Group 3



Source: Urban Engineers and STV Inc., 2010

Figure 4-3. Site Development Alternatives

CONCEPT EVALUATION MATRIX

Evaluation Criteria	Importance
	(5 high, 1 low)

TERMINAL	
Program Requirements	5
Expansion Flexibility	5
Curbside Operations	4
Departures Hall Function/ Operation	4
Arrivals Hall Function/ Operation	4
Baggage Screening/ Make-up/ Delivery Operation	3
Passenger Wayfinding/ Orientation	3
Post-Security Function/ Operation	2
Concessions/ Amenities/ Opportunities	2
FIS Integration	1
MEP/ IT Systems Integration	1
Terminal Total	

Concept 2			
Good	Better	Best	Score

			15
			5
			8
			12
			4
			3
			6
			6
			2
			3
			3
			67

Concept 4			
Good	Better	Best	Score

			15
			15
			12
			12
			12
			6
			9
			6
			4
			2
			3
			96

102 Total Available Points

AIRSIDE	
Available Real Estate Utilization	5
Gates	5
Gate Flexibility	5
Expansion Efficiency/ Phasing	4
Aircraft Movements	3
GSE Movements	2
Utilities	1
Airside Total	

			5
			10
			15
			4
			9
			6
			3
			52

			15
			15
			10
			12
			6
			4
			2
			64

75 Total Available Points

LANDSIDE	
Terminal B Vehicular Wayfinding	5
Available Real Estate Utilization	5
Site Planning	5
Terminal/ Roadways Interface	4
Terminal/ Parking Garage/ Pedestrian Interface	4
Parking Garage/ Roadway Network Interface	4
Roadway Network Flexibility	3
Terminal/ Roadway Network/ CONRAC Interface	3
CONRAC/ Parking Garage Interface	2
Terminal B Hotel Access	1
Loading Dock	1
Utilities	1
Landside Total	

			10
			10
			10
			12
			4
			12
			6
			9
			6
			3
			2
			3
			87

			15
			10
			15
			12
			12
			12
			6
			9
			6
			3
			1
			2
			103

114 Total Available Points

Source: Urban Engineers and STV Inc., 2010

Figure 4-4. Concept Evaluation Matrix

4.4.2 Landside Roadway Configuration

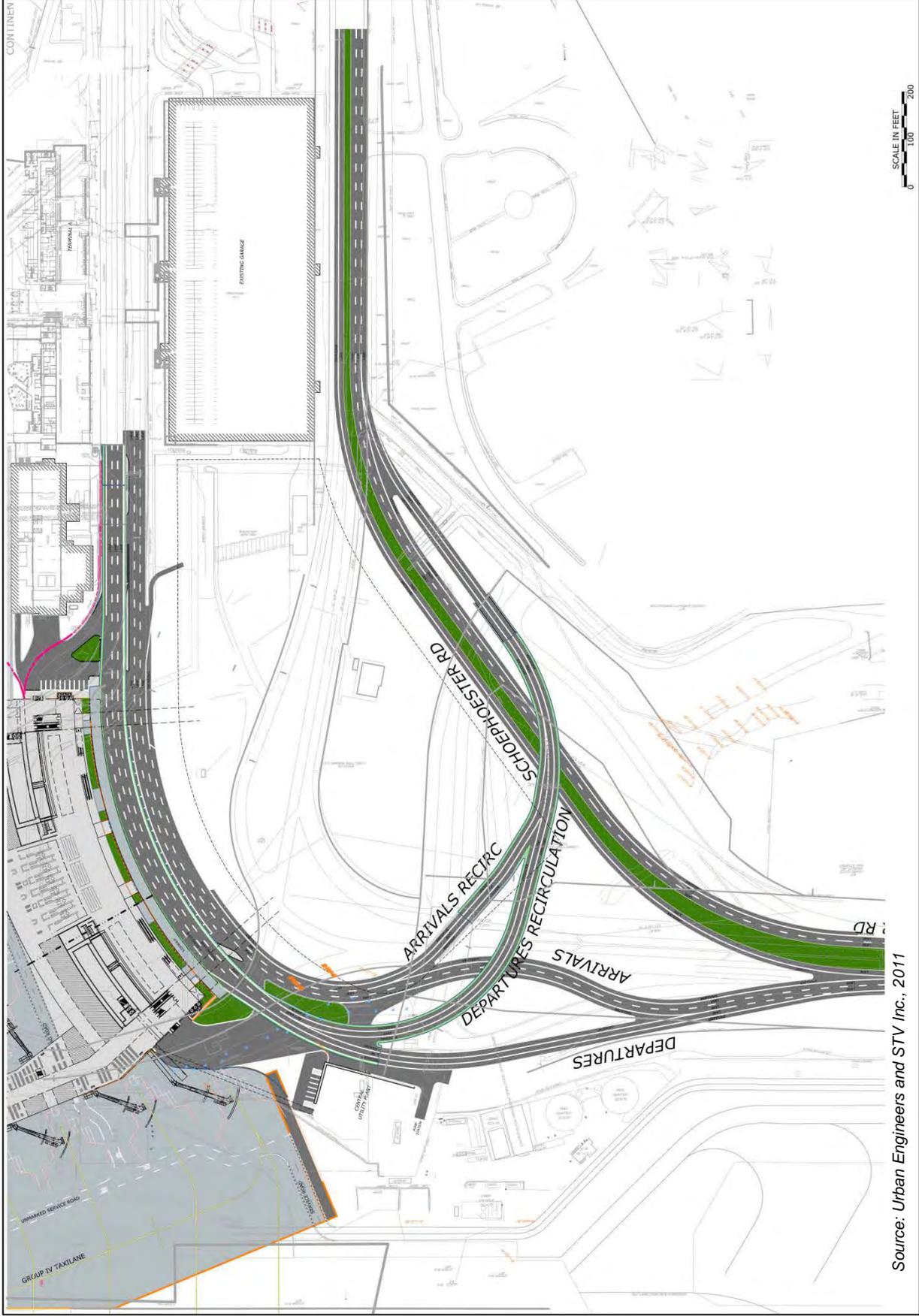
Two landside roadway configuration alternatives were evaluated using design simulations for traffic leaving or recirculating the Terminal B area. A flyover ramp alternative, which includes grade separation ramps and structures for all movements, was initially considered in the schematic design (*Figure 4-5*). An at-grade alternative was developed and analyzed to determine the feasibility of a lower-cost alternative. The at-grade alternative is comprised of two approach lanes for the upper and lower levels that merge into three lanes at the intersection with a realigned Schoephoester Road (*Figure 4-6*). Both alternatives operate at a high level of service, with the flyover alternative providing a higher level of customer service, but at a significantly increased construction cost. The at-grade intersection alternative was therefore found to be more cost-effective and was selected for Design Development as part of the preferred alternative.

4.5 Preferred Alternative

Concept 4 from the Preliminary Engineering and Programming Report (Urban Engineers and STV, Inc., 2010) is the preferred alternative evaluated in this EA/EIE. Concept 4 was selected by CTDOT because of its efficient integration of the overall Terminal B Program. Concept 4 also provided the most efficient balance between landside, terminal and airside operations, as well as positioning the new Terminal landside to provide the most direct line of sight as seen when approaching the Terminal from the reconfigured roadway network (Urban Engineers and STV Inc., 2011). The various elements of the preferred alternative (i.e., the Proposed Action) are summarized below and are described more fully in *Section 3*:

- Phased construction of a new Terminal B
- Landside utility modification and relocation
- Construction of a new Central Utility Plant (CUP)
- Roadway and viaduct relocation/construction
- Construction of a new parking garage and Consolidated Car Rental (ConRAC) facility
- Airside utilities, apron and taxiway construction

The Terminal B redevelopment would occur in phases, based on demand. The parking garage/ConRAC and roadway network would be constructed in an initial phase, while the new Terminal B and the viaduct serving the new terminal would be constructed in two later phases. Phasing for the construction of the CUP would be determined during subsequent design based on refined estimates of the power requirements for the Terminal B complex.



Source: Urban Engineers and STV Inc., 2011

Figure 4-5. Flyover Alternative

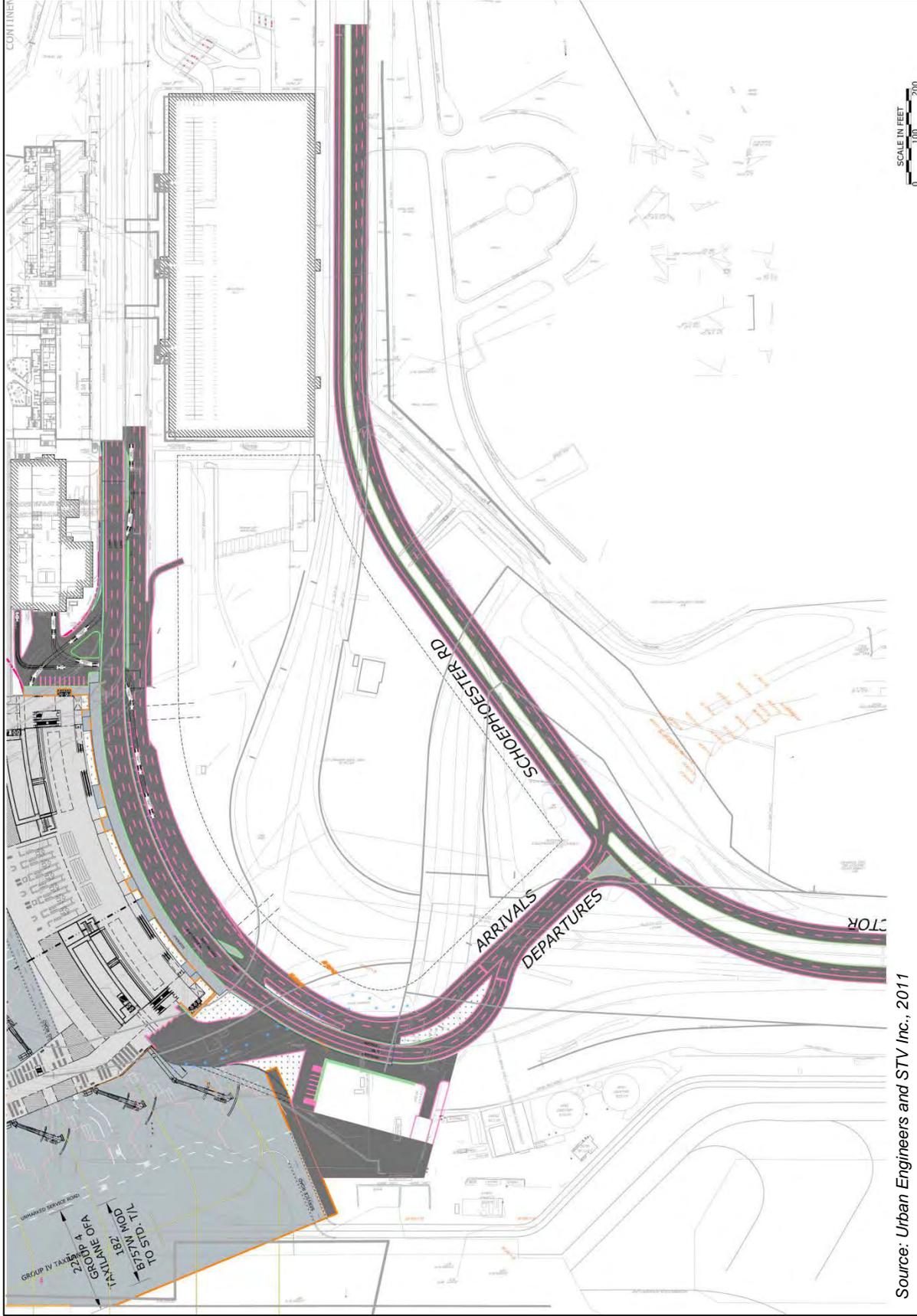


Figure 4-6. At-Grade Intersection Alternative

5 Existing Environment and Analysis of Impact

5.1 Land Use, Zoning, and Local Development Plans

5.1.1 Existing Conditions

Land Use

Airport land use in the project area includes roadways, parking, and airport operational facilities. *Figure 5-1* presents on-airport land use areas presented in the 2005 Airport Master Plan Update. The airport is organized to cluster compatible uses, with areas designated for future aviation-related development. The primary constraint to on-airport land use and land use near or abutting the ends of the runways is protected airspace area regulated by FAA to avoid obstructions to navigable airspace.

Existing off-airport land use, shown in *Figure 5-2* (CRCOG, 2008), is generally compatible with FAA recommendations for areas near an airport. Compatible land uses are generally determined by sensitivity to noise from aircraft operations, and FAA maintains land use compatibility tables that present appropriate land uses within airport noise areas (FAA Order 1050.1E Appendix A). Noise impacts are discussed in more detail in *Section 5.6*.

In general, the airport property is surrounded by commercial, industrial, institutional, and open space land uses. Limited residential areas are located beyond these areas near the approaches to runways 6, 24 and 33. The nearest of these areas are located in Windsor Locks, generally between Elm Street (Route 140) and Old County Road, in Windsor south of Route 20, and in Suffield on South Grand Street. The airport's Part 150 Airport Noise Compatibility Planning Study (Part 150 Study) found approximately 211 acres of non-compatible residential land use located near the airport in areas subject to elevated levels of aircraft noise exposure. Non-compatible uses relative to noise exposure surrounding the airport are described in *Section 5.6*.

BDL is undertaking a Noise Compatibility Program (NCP) as part of the airport's Part 150 Study as described in *Section 5.6*. The NCP, which is currently being implemented and is independent of the Proposed Action, contains measures to reduce both existing and potential future noise impacts from the airport in an area of predicted elevated noise exposure. In general, several of these measures include changes to surrounding land use policies, a subset of which would apply to existing non-compatible uses.

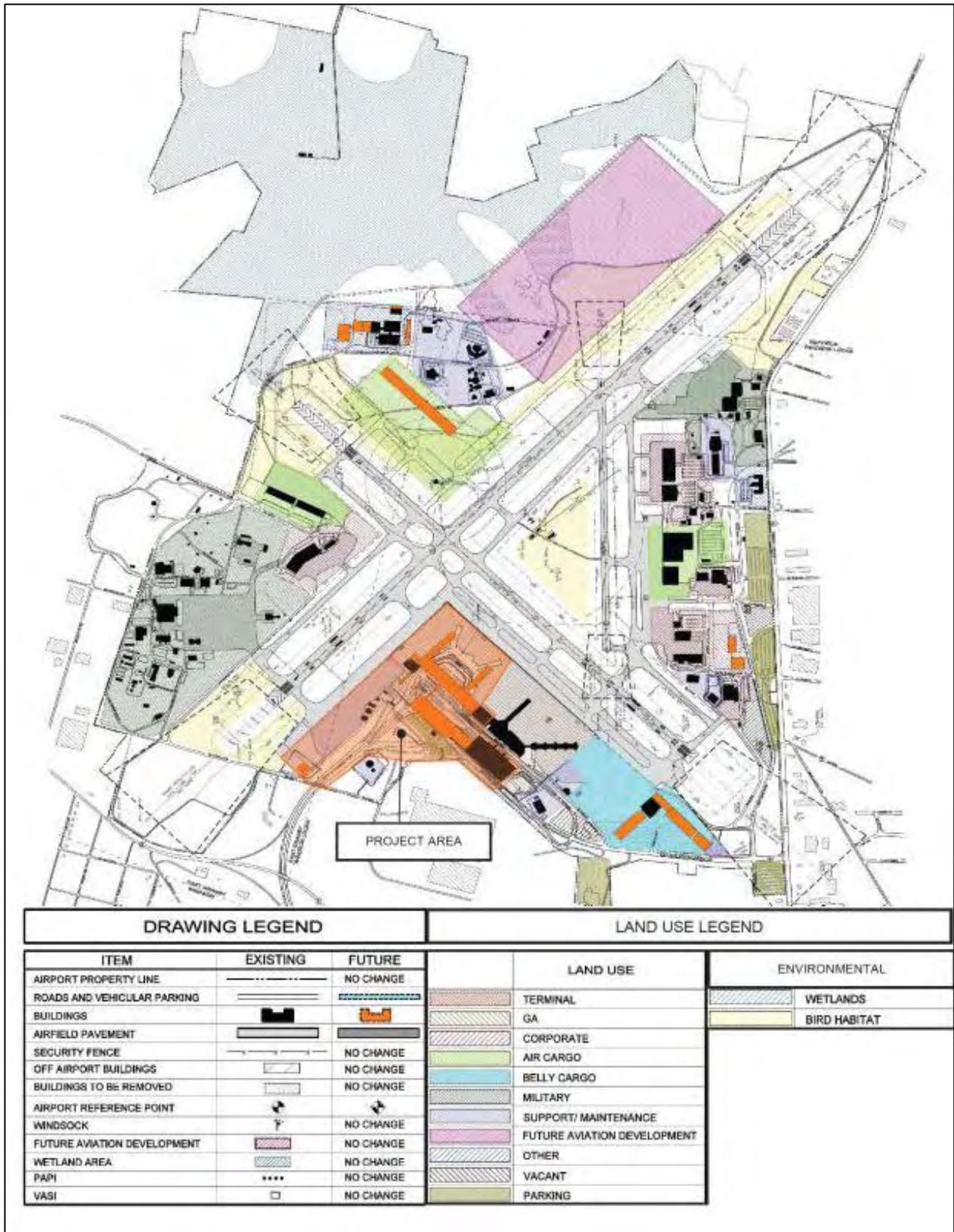


Figure 5-1. On-Airport Land Use (2005 Airport Master Plan Update)

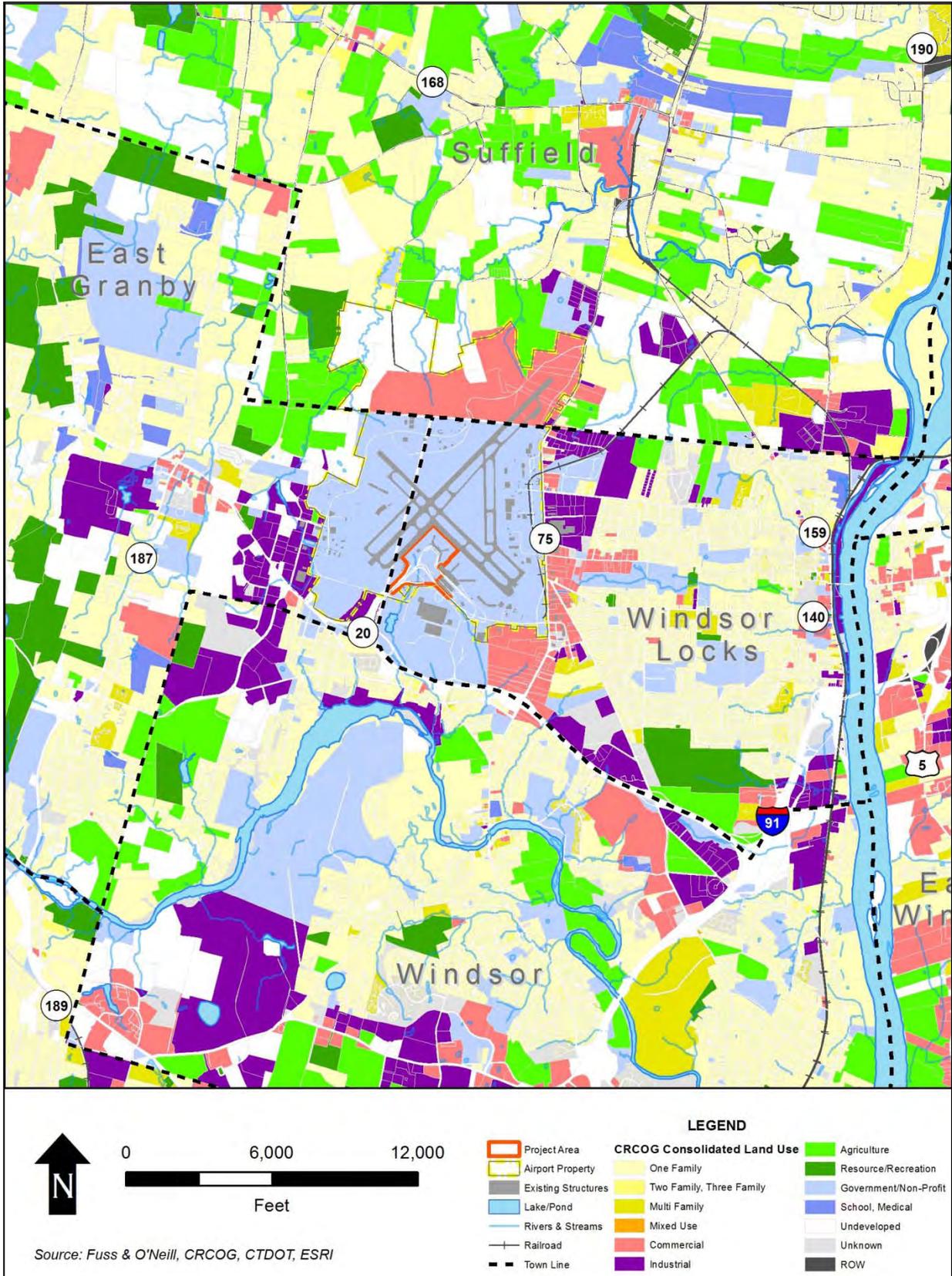


Figure 5-2. Surrounding Land Use

Zoning

Generalized zoning for the area surrounding the airport is shown in *Figure 5-3* as compiled by the Capitol Region Council of Governments (CRCOG, 2010). The airport property and the immediately surrounding area are zoned for industrial use in Suffield and Windsor Locks and Business/Commercial Office in East Granby. Allowable uses in these zoning classifications are generally compatible with airport uses and exposure to noise resulting from aircraft operation. One notable area of non-conforming use is located on Larch Drive in East Granby, which is a residential neighborhood in the Commercial/Business Office zone that is close to the airport.

In Windsor, a residential neighborhood located near the end of Runway 6, known as Pine Acres south of Route 20, is zoned residential but is the source of noise complaints (Windsor POCD, 2004). The Town is considering strategies to address the non-conforming use.

As described in *Section 5.6*, the NCP for the airport includes two measures that use zoning as a tool to prevent future non-compatible development near the airport and reduce the impact on existing non-compatible land use. These measures, which are planned for implementation and are independent of the Proposed Action, include the following:

- ***Land Use Measure 1 – Zoning for Compatible Use.*** This measure includes amendment of zoning maps and guidelines to prevent new non-compatible development within the Mitigated 2008 NEM 65 dB DNL contour unless it met the Noise Level Reduction guidelines of 14 CFR Part 150.
- ***Land Use Measure 7 – Airport Noise Overlay Zone.*** An Airport Noise Overlay Zone would be established for areas within the Mitigated 2008 NEM 65 dB DNL contour, with provisions for aviation easements (i.e., easements to allow aircraft to fly above or near a property), fair disclosure, and noise level reduction construction techniques.

Local Plans of Conservation and Development

Pursuant to CGS 8-23, each of the four towns surrounding BDL has prepared a local Plan of Conservation and Development (POCD) to guide board, commission, and public official decision making consistent with land use principles established by the community. These documents contain each town's vision of how BDL should be integrated into the community. The following summarizes local POCD plan elements relative to BDL.

East Granby

The East Granby POCD was last updated in 2004 and describes the benefits that BDL provides to the town. It also discusses land use, environmental, traffic, emergency services, and noise impacts that result from the airport. The POCD contains the following strategies related to the airport:

1. Seek to maximize community benefits resulting from proximity to the airport.
2. Maintain a working relationship with the airport operations staff.
3. Continue to be involved in committees related to operations at Bradley International Airport so that local needs will be considered in operations and future planning.

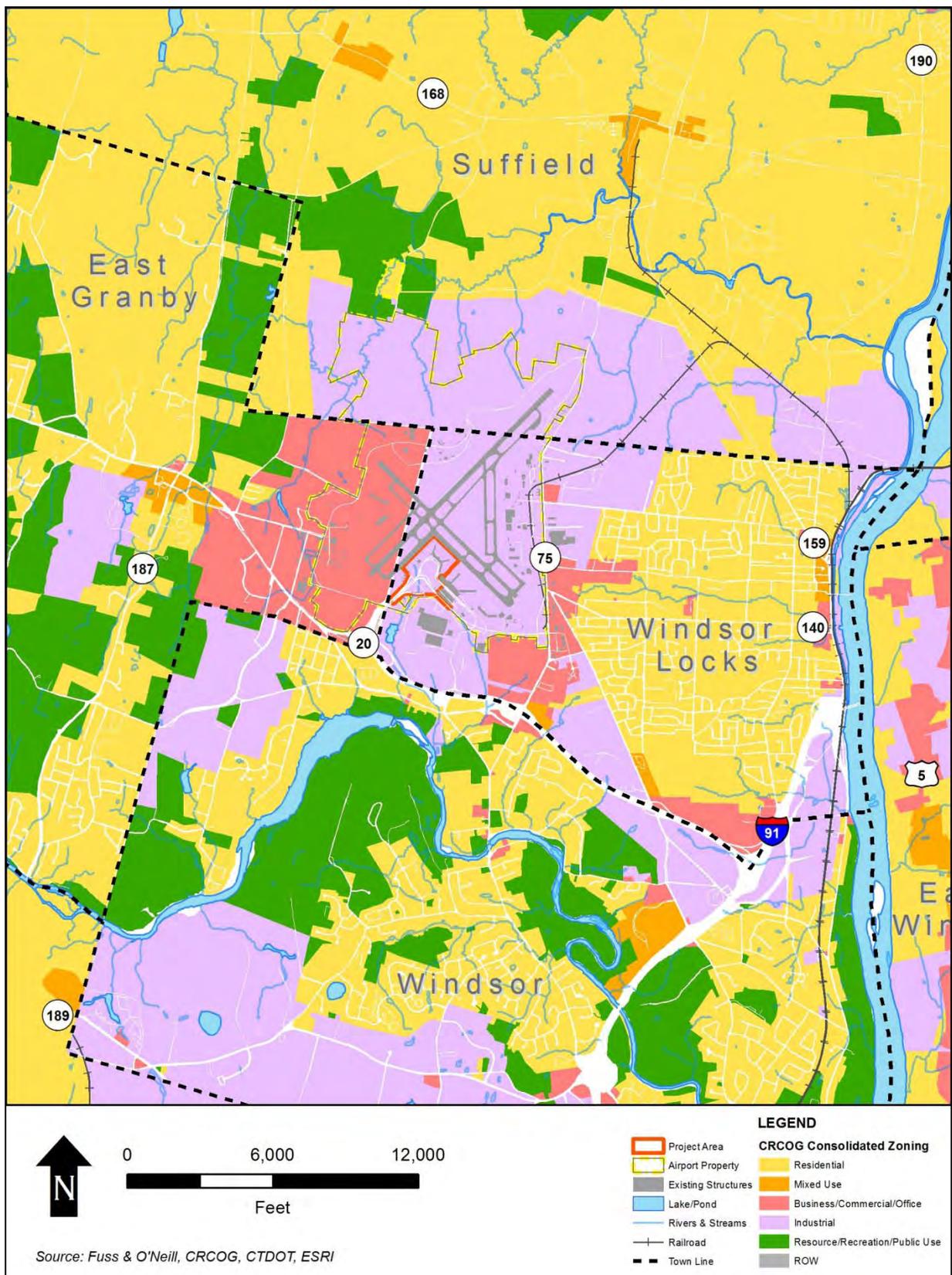


Figure 5-3. Zoning

4. Encourage adoption of a noise abatement study so that local property owners become eligible for Federal assistance for soundproofing.
5. Encourage local property owners to apply for Federal assistance for soundproofing once they become eligible.
6. Rezone residential areas south of Route 20 and east of International Drive to discourage additional residential development in this area.
7. Do not encourage new residential uses in high noise areas while recognizing this can be difficult since the land use pattern of East Granby may not make non-residential uses viable or appropriate and since the 65 DNL noise threshold can move.
8. To the extent possible, retain buffer land in private ownership to reduce the amount of tax producing land lost to the Town due to airport expansion.
9. Define areas affected by present and future operations of Bradley International Airport and Simsbury Airport in order to prevent hazardous and incompatible land uses.
10. Work with CTDOT to update mapping showing airport approach areas, noise patterns, and other impacts. BDL and CTDOT will continue to update mapping of the airport and surrounding areas as necessary to reflect existing conditions.

Suffield

The Suffield POCD was last updated in 2010 and emphasizes promoting industrial development in the southern portion of town near the airport. Elements of the POCD that consider BDL include:

- The Town is working to prepare ‘shovel-ready’ sites in industrial areas by constructing a new road with utilities in this area, although some sites are limited by wetlands, watercourses, and vernal pools.
- The POCD supports improving accessibility to other developable land near the airport through relocation of Perimeter Road and gaining access across a railroad spur to make additional light industrial-zoned land available for development.
- The airport is identified as a key influence on traffic and transportation in the town’s southern portion.

Windsor

The Windsor POCD was prepared in 2004 and has been updated periodically, with a revision currently underway. It discusses opportunities associated with the airport as well as land use conflicts near the airport. Elements of this POCD that consider BDL include:

- The Pine Acres neighborhood is located near the end of Runway 6 in an area that is residentially zoned. The area is the source of noise complaints, but infill development continues to be proposed in this area. The Town is considering rezoning this area as AG, the Town’s agricultural zoning designation, which is the lowest-density residential zone the town allows, to reduce development pressure. Alternatively, the area could be zoned for warehousing, although this option would be limited by proximity to existing residential uses. This neighborhood is referenced in the airport’s Part 150 Study. The Town is also considering additional measures to prevent additional residential development in this area as they become available.

- The POCD discusses the 562-acre area of the New England Tradeport as vacant land that is designated for development for manufacturing, warehouse, and flexible space, and states that more vacant land could become available if vacant residentially-zoned land in the Pine Acres neighborhood is rezoned to a more compatible use. Since the preparation of the POCD, the majority of this area has been developed.
- The Town plans to continue petitioning for the completion of the Bradley Airport Loop Road to divert traffic away from Day Hill Road and Bloomfield Avenue.
- The Town recommends improved bus service to BDL from the Day Hill Corporate Area (DHCA) to connect existing and future transportation mode options. BDL is discussed generally as an asset to the DHCA.

Windsor Locks

The Windsor Locks POCD was last revised in 2007. Bradley International Airport includes approximately 1,080 acres in Windsor Locks, which is a significant percentage of the town's total area. Airport-related elements of this POCD include:

- A discussion of the CRCOG Bradley Area Transportation Plan, which recommends improvements to the Route 75 corridor, including driveway consolidation, intersection improvements, sidewalks, streetscaping, bus stops, and crosswalks at signalized intersections, as well as other improvements.
- A recommendation to improve bus service to BDL.
- The Town has established an Airport Interchange Overlay district to improve compatibility of an area northeast of the Old County Road and Route 20 intersection with surrounding commercial and industrial uses.
- The POCD recommends that the Planning and Zoning Commission undertake measures to prevent airport valet parking from overwhelming the commercially-zoned areas near the airport.

5.1.2 Impact Analysis

Land Use

The No Action alternative, which includes demolition of the existing Terminal B complex, is not anticipated to significantly change the pattern of on-airport land use. However, maintaining the former Terminal B site as vacant land does not represent the best use of this location because it underutilizes the potential of this area for passenger handling facilities due to its convenient access to the airport's main entrance, parking facilities, hotel, and other amenities.

The Proposed Action is consistent with current on-airport land use and land use clustering identified in the AMPU (PB Aviation, 2005) since it would continue and improve existing passenger facilities in proximity to access roads, parking, and other traveler amenities. As such, the Proposed Action is not expected to result in any on-airport land use impacts.

No direct or secondary impacts to land use surrounding BDL are anticipated to result from the Proposed Action or No Action alternatives.

Zoning

No significant impacts to local zoning in communities surrounding the airport are anticipated as a result of the No Action alternative or the Proposed Action, since neither alternative is expected to result in significant off-airport land use impacts or conflicts with existing zoning. The zoning-related elements of the BDL NCP, including zoning surrounding areas for compatible use and establishing an airport noise overlay zone, are intended to reduce land use conflicts in the long term. Implementation of these elements is independent of the Proposed Action.

Local Plans of Conservation and Development

In general, the Proposed Action is consistent with the POCDs since it would allow the airport to continue to support passenger demand, in turn supporting economic development in the surrounding towns. The No Action alternative does not support the airport's planning efforts to maintain and enhance passenger service and airline efficiency, and therefore is less consistent with the common goal expressed in the POCDs of capitalizing on the airport's presence for economic growth. Addressing off-airport impacts associated with noise or surface transportation issues are related to the presence of the airport and aviation activity, and are not specific to the Proposed Action, which is a response to forecast increases in passenger enplanements/deplanements and aircraft operations.

5.1.3 Mitigation

Since the Proposed Action is not anticipated to result in direct or indirect adverse impacts to land use or zoning, and is generally consistent with local planning, no mitigation is necessary.

5.2 Consistency with State and Regional C&D Plans

5.2.1 Existing Conditions

Conservation and Development Policies Plan for Connecticut 2005-2010

The *Conservation and Development Policies Plan for Connecticut 2005-2010* (C&D Plan) provides the policy and planning framework for administrative and programmatic actions and capital and operational investment decisions of State government (OPM, 2005). The C&D Plan outlines broad-based growth management principles designed to encourage sustainable development that balance human needs with conservation of environmental and socioeconomic resources. Recent statutory amendments have delayed the revision process for the C&D Plan. The current State C&D Plan, which was adopted in 2005, will remain in effect until the 2013 legislative session when the General Assembly is scheduled to vote on adopting the next plan revision.

The growth management principles in the C&D Plan reflect a desire to avoid land use trends that encourage sprawl and the subsequent disproportionate consumption of land and resources that results. These principles encourage the revitalization of areas with existing infrastructure

and capacity to support growth and the development of currently undeveloped areas that is consistent with long-term sustainability of the State's resources.

According to the C&D Plan's Development Locational Guide Map, the eastern side of BDL, including the terminal complex, is located primarily in a "Neighborhood Conservation Area" (Figure 5-4) that includes the entirety of the Town of Windsor Locks. Neighborhood Conservation Areas (NCAs) are identified in the C&D Plan as being the State's second development priority after Regional Centers. NCAs can entail a wide variety of development, such as commercial, industrial, and/or urban-scale density residential land uses. The overall intent of this policy is to maintain the overall character and vitality of the area by promoting infill development and redevelopment in NCAs that are at least 80% built up and have existing water, sewer, and transportation infrastructure to support such development. (OPM, 2005)

The BDL property also contains "Growth Areas" on the western and northern sides of the airport in East Granby, Suffield, and Windsor and some "Preservation Areas" to the north, west, and south of the terminal complex. Growth Areas are identified in the C&D Plan as being land areas that could support staged urban-scale expansion in areas suitable for long-term economic growth. These areas are identified as being less than 80% built up, but have existing or planned infrastructure to support future growth in the region. Growth Areas are considered development areas and, as such, the State promotes the redevelopment and revitalization of this area with existing or currently planned physical infrastructure. The Preservation Area designation depicts areas that protect significant resource, heritage, recreation, and hazard-prone areas by avoiding structural development, except as directly consistent with the preservation value. The C&D Plan states that Preservation Areas "should be managed to the degree feasible as no-build areas and no-net-loss areas." (OPM, 2005)

The C&D Plan also encourages complementary public and private development in the vicinity of Bradley International Airport, through coordinated multi-town economic development plans.

Plan of Conservation and Development, Capitol Region Council of Governments

The Capitol Region Council of Governments (CRCOG) is the regional planning agency representing 30 municipalities in the Greater Hartford area. CRCOG is the regional planning agency designated by the Connecticut Office of Policy and Management (OPM) for the area, pursuant to CGS 16a-4a.

The Plan of Conservation and Development (POCD) developed by CRCOG is an advisory document that is intended to be a regional long range land use planning document that evaluates existing conditions and identifies physical areas for growth and preservation.

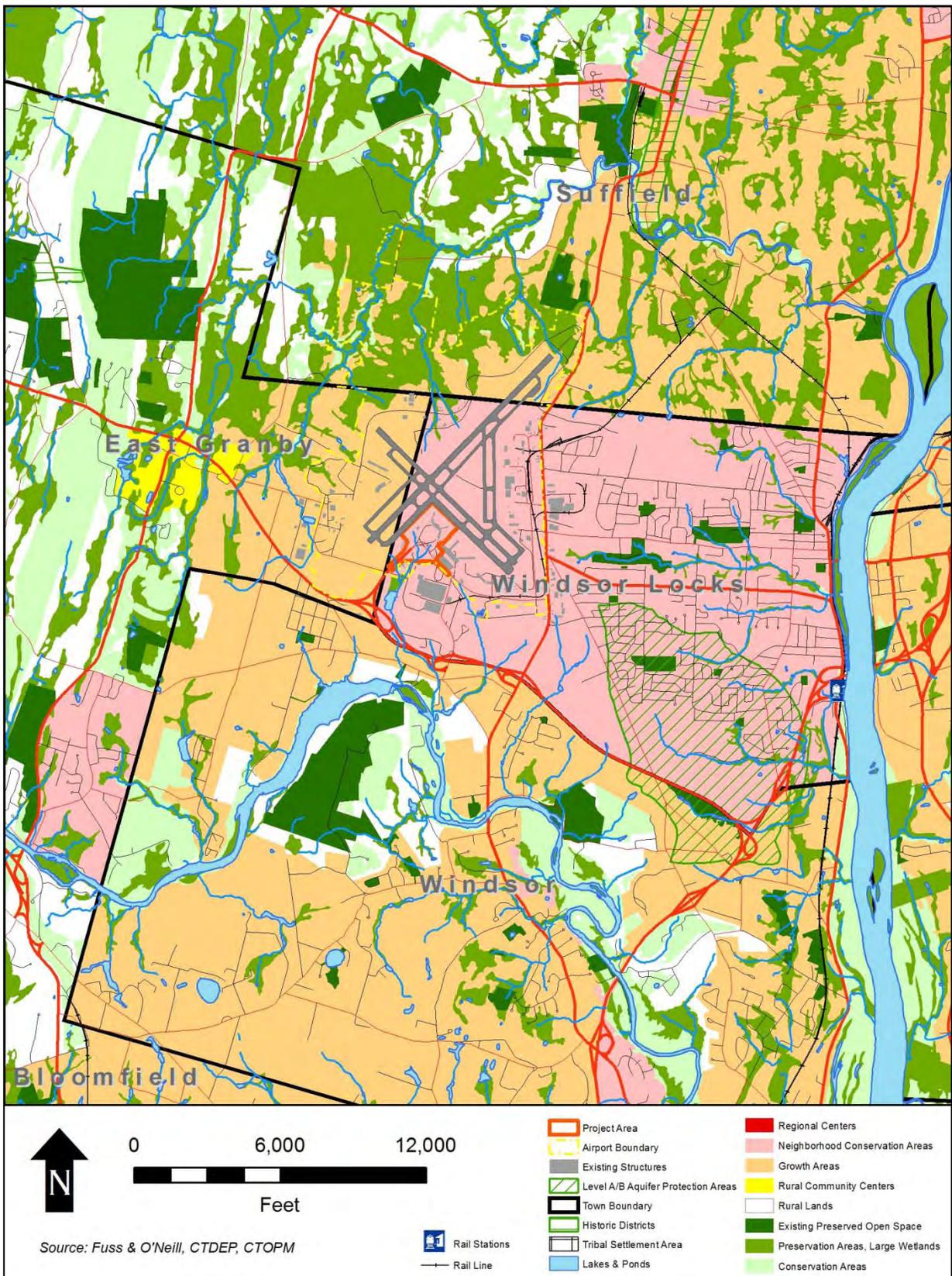


Figure 5-4. Project Area Conservation and Development Policies

The basic goals of the POCD follow six major themes (CRCOG, 2009):

- Focus new regional development in areas in which existing and planned infrastructure can support that development.
- Support efforts to strengthen and revitalize Hartford, the Capitol Region's central city, and also support the revitalization of older, urbanized areas throughout the region.
- Develop in a manner that respects and preserves community character and key natural resources.
- Implement open space and natural resource protection plans that acknowledge and support the multi-town nature of our natural systems.
- Support the creation of new employment and housing opportunities, and transportation choices, to meet the diverse needs of our region's citizens.
- Encourage regional cooperation in the protection of natural resources, the revitalization of urban areas, and economic development.

The POCD's Transportation chapter recognizes BDL as a primary transportation hub in the region, stressing that air transportation is becoming increasingly important to connect the region with national service and research and development-based industries. The POCD refers to the 2005 AMPU and asserts that, while BDL has adequate runway capacity, new and expanded terminals, vehicular improvements, and increased parking will be required. The POCD also refers to the Bradley Area Transportation Study, discussed later in this section.

In addition to discussing BDL as a transportation center, the POCD also refers to BDL as a major industrial area in the region and designates it an Economic Development Area of Regional Significance. The POCD encourages development, including industrial development, in areas where adequate infrastructure is available, and intermunicipal and regional cooperation on development opportunities of region-wide significance. It also recommends improving transit options to the airport, include establishing fixed guideway bus service and improving local bus service.

Transportation Planning

In addition to the broad State and regional planning document described above, there are several transportation-specific planning documents relevant to the proposed project.

Capitol Region Transportation Plan: A Guide for Transportation Investments through the Year 2040.

This planning document contains long-term transportation priorities in the Capitol Region and includes a chapter devoted to Bradley Airport. It discusses BDL's importance as a passenger and freight handling facility in the region and states that it contributes \$4 billion in economic activity to Connecticut, including \$1.2 billion in wages and 18,000 full time jobs. The Plan recommends:

- Bradley area roadway, transit access and bus service improvements
- Continuation of BDL's designation as an Economic Development Area of Regional Significance
- Discouraging noise-sensitive land uses near the airport

- Improving and expanding domestic service and developing international service from Bradley
- Improving Bradley's air cargo potential
- Evaluating creation of a multimodal freight facility at BDL
- Planning airport improvements in a community-sensitive manner.

Map to a Vibrant Economy: Connecticut's Transportation Strategy – Report and Recommendations of the Transportation Strategy Board

The Transportation Strategy Board (TSB) in the Map to a Vibrant Economy: Connecticut's Transportation Strategy report (January 2011) discusses conditions at BDL at length and describes the plans for replacement of Terminal B, expansion of parking facilities, construction of a high-speed taxiway, and consolidating cargo and rental car facilities. It also discusses the Bradley Area Transportation Study and the Bradley Area Development Zone (BADZ) that has been established around the airport.

Master Transportation Plan 2011-2015

The Master Transportation Plan, prepared by CTDOT, identifies four projects at BDL. Three projects that are identified as “underway” in the plan include construction of a new Terminal B, relocating the airfield lighting electrical vault, which is currently underway, and the sound insulation program being undertaken as part of the airport's Noise Compatibility Program. The fourth project, which includes rehabilitation of Taxiway C North, is identified as “planned.”

Freight Movement in the Hartford Metropolitan Area: A Regional Freight Market Overview (Global Insight, 2005)

This report identifies BDL as a source of economic growth while recognizing that its freight volumes are likely to remain modest since the narrow-body planes and regional jets that provide passenger service to the airport provide limited potential for heavy cargo, and projecting that most air freight will likely arrive in the area via truck from Boston, New York, and Newark. The report foresees small package and parcel freight, which now dominates freight at the airport, to continue as BDL's most significant freight service.

Bradley Area Transportation Study

The Bradley Area Transportation Study (URS, 2002) identifies regional and local improvements in the area around BDL to improve transportation connectivity with the airport. Elements include:

- A Northern Bradley Connector Roadway, connecting Route 75 near the airport to Route 190 over the Connecticut River.
- Conversion of a 0.8 mile segment of Route 75 to a Bradley Airport Gateway
- Safety and operational improvements along Bradley Park Road
- Improved transit service to the Bradley Area
- Numerous local improvements in the surrounding towns.

New Haven Hartford Springfield Commuter Rail Implementation Study

The New Haven Hartford Springfield Commuter Rail Implementation Study was completed by CTDOT and Wilbur Smith in 2005. The purpose of the study was to evaluate the

implementation of commuter rail service connecting the cities and towns along the I-91 corridor to coastal Connecticut rail lines, including the Northeast Corridor.

Currently, a spur rail line (the “Suffield Industrial Track”) connects Windsor Locks to BDL and continues west a short distance but is only used for infrequent freight service. Rail and bus shuttle options were evaluated in the study; shuttle buses to the airport were recommended due to cost, performance, and ridership projections.

5.2.2 Impact Analysis

The No Action alternative, which includes demolition of the existing Terminal B complex, would have no impact on off-airport land use priorities identified in the State and regional planning documents. However, the No Action alternative is also inconsistent with long-range economic development elements of the planning documents since lack of adequate passenger handling facilities could limit BDL’s ability to meet future demand. Such a capacity shortage could result in diversion of trips to other airports and loss of belly cargo capacity.

The Proposed Action is consistent with the State and regional planning documents since it would allow passenger demand to be met, ensuring that BDL would continue to support economic growth in the region. The Proposed Action would not impact off-airport land use priorities in the State or region.

5.2.3 Mitigation

The Proposed Action is not anticipated to result in direct or indirect adverse impacts to land use priorities in the State and region and is generally consistent with State and regional planning objectives. Therefore, no mitigation is necessary.

5.3 Traffic and Parking

5.3.1 Existing Conditions

Bradley International Airport is accessed via the surface street network in Windsor Locks and surrounding towns including Windsor, Suffield, and East Granby. The primary access road to BDL is Route 20 (Bradley Airport Connector), a four-lane limited access corridor beginning at Exit 40 off Interstate 91 and culminating at Schoephoester Road (SR401) on airport property.

As shown in *Figure 5-5*, the following streets are included within the study area network, providing access to and within the airport property:

- Route 20 (Bradley Airport Connector)
- Schoephoester Road (SR401)
- Route 75 (Ella T. Grasso Turnpike)
- Halfway House Road
- Route 140 (Elm Street)
- Light Lane

- Postal Road
- Cargo Road
- Terminal Arrival/Departure Roadways
- Airport Service Road

Route 20 (Bradley Airport Connector) is classified by CTDOT as a principal arterial expressway. The expressway begins at I-91 (Exit 40) to the east and terminates at Schoephoester Road to the west. Route 20 continues to the west as an arterial roadway, providing access to the Towns of East Granby and Granby. The expressway has a posted speed limit of 65 miles per hour. Route 20 has two lanes in each direction, with grade separated interchanges provided at Old County Road, Route 75, Hamilton Road, and the continuation of Route 20. The Bradley Airport Connector is limited-access and does not interact with adjacent land uses.

Schoephoester Road (SR401) is classified as a minor arterial roadway and functions as the primary public access roadway for the airport and related businesses, including rental car agencies and off-site parking. The roadway has a posted speed limit of 35 miles per hour. Schoephoester Road has two lanes in each direction for the segment east of the Terminal Roadways, while the western segment has three eastbound lanes and one westbound lane. A transit route and bus stops are present along this corridor, though there are no sidewalks or bicycle accommodations. Land uses adjacent to Schoephoester Road are primarily airport-related, included rental car facilities, though Hamilton Sundstrand has a major presence on the western end. A midsize sports betting theater is also located on this road.

Route 75 (Ella T. Grasso Turnpike) is a principal arterial roadway, with four travel lanes in the vicinity of the airport. Route 75 provides access to Route 20, Interstate 91, and the Town of Windsor to the south, while to the north the roadway continues to Suffield, Connecticut and Agawam, Massachusetts. The speed limit varies from 30 to 40 miles per hour. Land use along Route 75 within the vicinity of the airport is primary commercial, including retail, hotel, and other airport related businesses. Several **CT**transit bus routes travel along this corridor. Sidewalk coverage is intermittent, and no bicycle accommodations are present.

Halfway House Road is classified as a collector roadway, providing access to a number of small businesses and residential neighborhoods east of Route 75. The roadway has a single vehicular travel lane in each direction with a posted speed limit of 30 miles per hour. Sidewalk coverage is incomplete.

Route 140 (Elm Street) is classified as a minor arterial roadway, providing access to Route 159 to the east, continuing over the Connecticut River via Bridge Street to the Town of East Windsor. The roadway has a single lane in each direction, with a speed limit of 40 miles per hour within the airport vicinity. Land use along the roadway is primarily single-family residential, with some small businesses located towards the western terminus. A sidewalk is present continuously along the south side of the street.

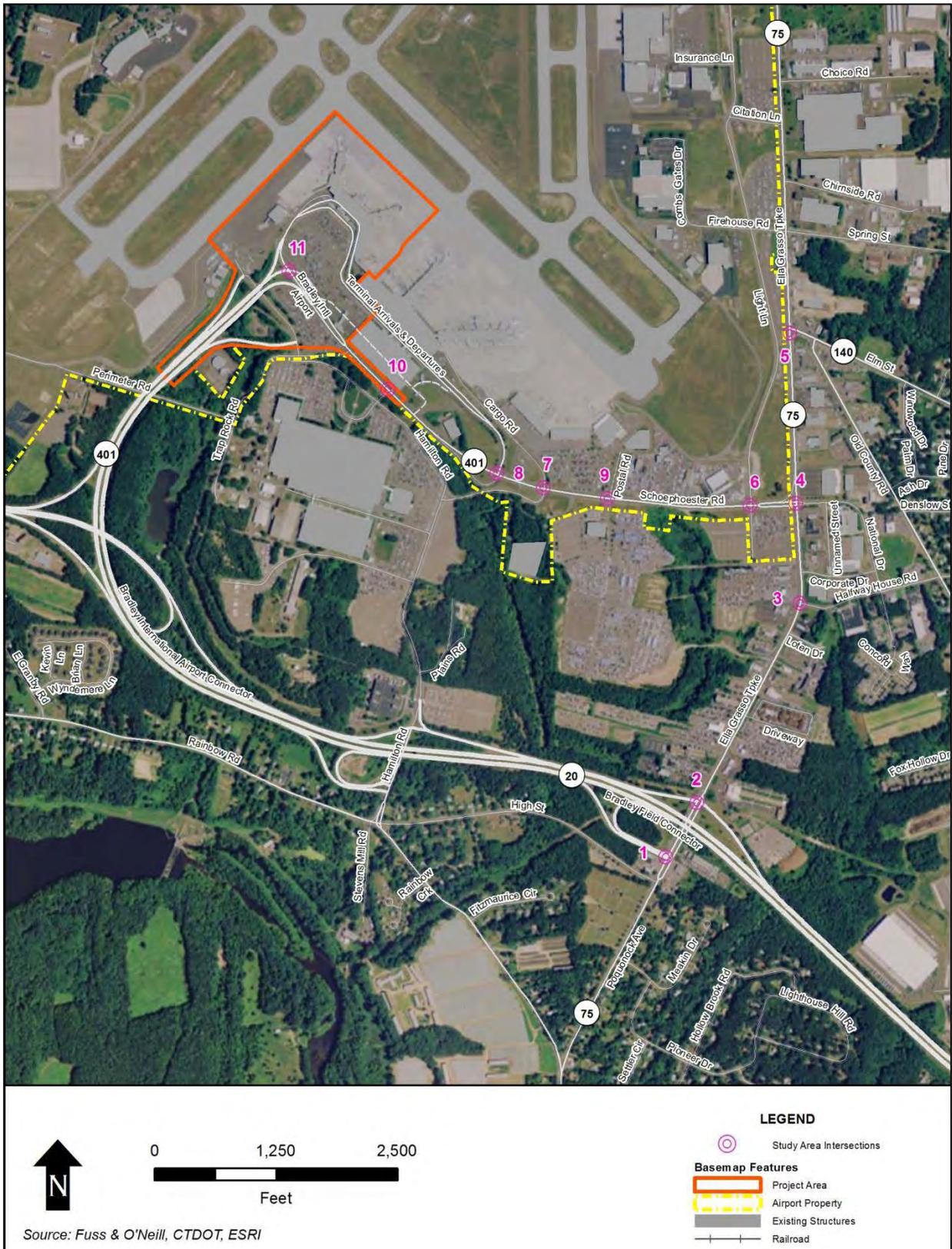


Figure 5-5. Study Area Roadway Network and Intersections

Light Lane, Postal Road, and Cargo Road are all airport service roadways, each with a single travel lane in each direction. Light Lane north of Schoephoester Road provides access to the Hertz Car Rental Agency and other airport facilities along the eastern boundary. Postal Road provides access to the United States Post Office building to the north, while to the south it provides access to the Roncari Valet Parking lot, Galaxy Self-Park Lot, and the Off-Track Betting Facility. Cargo Road provides terminal access for authorized airport vehicles to the north and the Hamilton Sundstrand Campus to the south. All of these roads are designed to operate at relatively low speeds.

The Terminal Arrival/Departure Roadways begin at Schoephoester Road at the jughandle intersection and loops back around to Schoephoester Road near the Hamilton Road overpass. The roadway is one-way, with three lanes proceeding north from Schoephoester Road. The roadway then splits, with two lanes continuing to the departures area (upper deck) and two lanes to the arrivals area (lower deck). The Main Parking Garage and a short-term parking lot adjacent to the terminals are also accessed via this road.

Airport Service Road intersects Schoephoester Road opposite the Main Parking Garage, and provides direct gated access to the Hamilton Sundstrand campus.

Traffic Controls at Study Area Intersections

Eleven intersections were analyzed with regards to traffic operations; nine are signalized, and one is stop controlled. These intersections include:

- Route 75 (Ella Grasso Turnpike) at Route 140 (Elm Street)
- Route 75 (Ella Grasso Turnpike) at Schoephoester Road
- Route 75 (Ella Grasso Turnpike) at Halfway House Road
- Route 75 (Ella Grasso Turnpike) at Route 20 Westbound Ramps
- Route 75 (Ella Grasso Turnpike) at Route 20 Eastbound Ramps
- Schoephoester Road at Light Lane
- Schoephoester Road at Postal Road
- Schoephoester Road at Cargo Road
- Schoephoester Road at Terminal Arrival/Departure Roadways
- Schoephoester Road at Airport Service Road
- Bradley Airport Connector at Terminal Arrival/Departure Roadways

The signalized intersection of Route 75 at Route 140 includes two lanes in each direction on Route 75 along with a southbound left turn lane. The westbound approach has dedicated right and left turn lanes. The traffic signal includes a southbound left turn phase with an overlapping right-turn phase. Pedestrian signal accommodations consist of two “Push for Green Light” buttons on the southeast corner of the intersection and directly across from the Elm Street approach. No dedicated pedestrian signal heads are present.

The intersection of Route 75 at Schoephoester Road is signalized, providing split phasing for the eastbound and westbound approaches as well a left turn phase for the northbound and southbound approaches. The northbound and southbound approaches each have two through lanes and a left turn lane, while the southbound approach also has a channelized right turn lane.

The westbound approach provides a shared through/right lane and an exclusive left turn lane. The eastbound approach provides a left turn lane, a shared through/left turn lane, and a right turn lane. Pedestrian signal accommodations consist of two “Push for Green Light” buttons on the northeast and northwest corners of the intersection. No dedicated pedestrian signal heads are present and it is not possible to see the green light on the traffic signal when called from the northeast corner.

The signalized intersection of Route 75 at Halfway House Road provides two through lanes in each direction plus a southbound left turn lane on Route 75. The westbound Halfway House Road approach provides two unmarked lanes. The eastbound approach is the driveway for the FastTrack parking facility, providing one-lane on the approach to the signal. The signal provides a southbound left turn advance phase. Pedestrian signal accommodations consist of two “Push for Green Light” buttons on the northeast corner of the intersection and directly across from the Halfway House Road approach. No dedicated pedestrian signal heads are present.

The signalized intersection of Route 75 at the Route 20 Westbound ramps provides two through lanes in each direction plus southbound right turn and northbound left turn lanes on Route 75. The westbound ramp approach provides a left turn lane and a right turn lane. The signal operates under a simple two-phase plan. Pedestrian signal accommodations consist of two “Push for Green Light” buttons on the southwest and southeast corners of the intersection, which call the minor street vehicular signal traffic phase. No dedicated pedestrian signal heads are present.

The signalized intersection of Route 75 at the Route 20 Eastbound ramps provides two through lanes and a left turn lane in the northbound and southbound directions, plus a right turn lane in the southbound direction. The eastbound ramp approach and westbound drug store driveway each provide a single lane. The signal operates under a simple two-phase plan. Pedestrian signal accommodations consist of two “Push for Green Light” buttons on the southwest and northeast corners of the intersection, which call the minor street vehicular signal traffic phase. No dedicated pedestrian signal heads are present.

The signalized intersection of Schoephoester Road at Light Lane provides two through lanes and an exclusive left turn lane on the eastbound and westbound approaches. The southbound approach provides a shared through/right-turn lane and an exclusive left turn lane, while the northbound parking lot access roadway approach provides a single lane. The signal phasing provides permitted-protected left turn phasing for the eastbound and westbound approaches. Pedestrian signal accommodations consist of two “Push for Green Light” buttons on the northeast and southeast corners of the intersection, which call the minor street vehicular signal traffic phase. The southeast pedestrian button is non-functional. No dedicated pedestrian signal heads are present.

The signalized intersection of Schoephoester Road at Post Office Drive provides two through lanes and an exclusive left turn lane on the eastbound and westbound approaches. The northbound and southbound approaches provide a shared through/right-turn lane and an exclusive left turn lane. The signal phasing provides permitted-protected left turn phasing for the eastbound and westbound approaches. Pedestrian signal accommodations consist of two “Push for Green Light” buttons on the northwest and southwest corners of the intersection,

which call the minor street vehicular signal traffic phase. No dedicated pedestrian signal heads are present.

The intersection of Schoephoester Road at Cargo Road is unsignalized, with two-way stop control on the side street approaches. The northbound and southbound approaches each provide a shared through/left turn lane and a right turn lane. No turn lanes are provided on Schoephoester Road. No pedestrian signal accommodations are present.

The signalized intersection of Schoephoester Road at the Airport Arrival/Departure Roadways accommodates the high left turning volume with a large jughandle on the south side of the intersection. The eastbound and jughandle approaches each provide two through lanes, while the westbound approach provides a through lane and a right turn lane. The signal operates under a simple two-phase timing plan. No pedestrian signal accommodations are present.

The signalized intersection of Schoephoester Road at Airport Service Road provides three through lanes on the eastbound approach, one through lane and a left turn lane on the westbound approach, and two lanes on the northbound approach. The signal provides protected left turn phasing for the westbound approach. Modern pedestrian countdown signal heads are present on either side of Schoephoester Road, providing safe crossing for people traveling between Hamilton Sundstrand and the airport property.

The intersection of Bradley Airport Connector / Schoephoester Road and the Airport Arrival/Departure Roadways is signalized and accommodates movements from two one-way streets. The southwestbound approach has one through lane and one left turn lane, while the southeastbound approach has a single lane for through movement to continue to Schoephoester Road. Due to the proximity to the limited-access Route 401 ramps, pedestrians are not accommodated here.

Traffic Volumes

Existing 2010 traffic volumes for each of the study area intersections were provided by the CTDOT Bureau of Policy and Planning. The traffic volumes were obtained from raw turning movement counts conducted by Fuss & O'Neill, Inc. at the following four intersections:

- Route 75 (Ella Grasso Turnpike) at Route 140 (Elm Street)
- Schoephoester Road at Light Lane
- Schoephoester Road at Postal Road
- Schoephoester Road at Airport Service Road

The remaining intersection counts were taken from existing data on file with CTDOT. Traffic volumes were prepared for morning (8-9 AM) and afternoon (5-6 PM) peak traffic hours, and are depicted in *Figures 1 and 2*, respectively, in *Appendix B*.

Level of Service Analysis

Level of Service analyses for signalized and unsignalized (two-way stop) intersections were conducted using Synchro Professional Software, Version 7.0. For intersections, level of service refers to the average amount of delay that drivers would experience during peak period travel, and is a proxy measure of driver discomfort, lost travel time, and fuel consumption. Level of service is rated on a non-linear scale of A to F, with A describing conditions of very low delay and F describing conditions of relatively high delay from the driver’s perspective.

Table 5-1 depicts the delay associated with varying levels of service for signalized and non-signalized intersections, respectively.

Table 5-1. Intersection Level of Service

Level of Service	Signalized Intersection Delay (seconds)	Unsignalized Intersection Delay (seconds)
A	< 10	< 10
B	>10 – 20	>10 – 15
C	>20 – 35	>15 – 25
D	>35 – 55	>25 – 35
E	>55 – 80	>35 – 50
F	>80	>50

For signalized intersections, the level of service rating is applied to the entire intersection (i.e., average of all vehicles at all approaches), whereas for an unsignalized intersection with two-way stop control on minor streets, the level of service refers to the amount of delay experienced by drivers on the minor street approaches. The definition of level of service, as well as the methodology for conducting signalized and unsignalized intersection capacity analysis within Synchro 7.0, is obtained from the 2000 *Highway Capacity Manual* (HCM) published by the Transportation Research Board.

As shown in Table 5-2, under existing conditions, the study area intersections all operate at Level of Service C or better during the peak hours. This is better than the typical desired minimum control delay standards of LOS D, or LOS E in more urban or pedestrian-oriented contexts.

Table 5-2. 2010 Existing Conditions – Vehicular Levels of Service

Intersection	AM Peak Hour	PM Peak Hour
Signalized Intersections		
1. Route 75 at Route 140 (Elm Street)	A	B
2. Route 75 at Schoephoester Road / National Drive	B	C
3. Route 75 at Halfway House Road	A	B
4. Route 75 at Route 20 Westbound Ramp	B	B
5. Route 75 at Route 20 Eastbound Ramp	A	B

Table 5-2. 2010 Existing Conditions – Vehicular Levels of Service

Intersection	AM Peak Hour	PM Peak Hour
6. Schoephoester Road at Light Lane / Parking Lot	A	A
7. Schoephoester Road at Postal Road / Teletheater Drive	A	A
8. Schoephoester Road at Airport Terminal Road Jughandle	C	C
9. Schoephoester Road at Hamilton Sundstrand	A	A
10. Schoephoester Road W at Airport Terminal Road Exit	A	A
Stop Controlled Intersections		
11. Schoephoester Road at Cargo Road	A	B

Parking Considerations

Bradley International Airport presently provides both short-term and long-term airport parking utilizing a combination of garage and surface parking located throughout the airport property. The airport parking includes the following facilities:

Table 5-3. Airport Parking Facilities

Parking Lot	Access to Terminal	Number of Spaces	Peak Observed Utilization Percentage	Peak Observed Demand
Presently Open				
Parking Garage	Walking	3,380	100%	3,380
Economy Lot 1	Shuttle	510	63%	320
Economy/Employee Lot 2	Walking	1,010	53%	536
Economy Lot 3	Shuttle	720	65%	469
Economy Lot 4	Shuttle	580	90%	520
Employee Lot 5C	Shuttle	830	26%	216
<i>Subtotal</i>		<i>7,030</i>	<i>77%</i>	<i>5,441</i>
Presently Closed				
Economy Lot 5A	Shuttle	330	0%	0
Economy Lot 5B	Shuttle	540	0%	0
<i>Subtotal</i>		<i>870</i>	<i>0%</i>	<i>0</i>
Grand Total		7,900	68%	5,441

The airport presently provides approximately 7,000 parking spaces for travelers and airport employees. Approximately 4,400 of those spaces are located within walking distance of the existing terminal complex, while the remaining lots are serviced by several circulating shuttles. Private parking lots within the vicinity of the airport, including both self-park lots and valet parking lots, provide approximately 10,000 additional parking spaces for travelers. Altogether, approximately 17,000 parking spaces are available to travelers and employees.

Economy Lots 5A and 5B were originally constructed to provide temporary parking during the construction of the existing parking garage. The lots were closed permanently in October 2010, and are currently only utilized for overflow parking during the holiday season.

The peak observed demand for on-airport parking (not including private lots) as documented in the Schematic Design Report is approximately 5,400 vehicles, or 77% of currently available airport-owned parking. Anecdotal observations from visits to the airport and historical aerial photos indicate that peak demand may be higher during different times of the year. Peak demand for adjacent private lots is unknown.

5.3.2 Impact Analysis

Impacts of the No Action and Proposed Action alternatives were evaluated for the years 2018 and 2028. Background (No Action) vehicular traffic in 2018 includes traffic impacts from area developments as well as new demand associated with a rise in passenger travel from air service expansion which would occur even if Terminal B was not rebuilt. The build condition includes the existence and usage of a new parking garage/ConRAC facility where a short-term parking lot currently exists in front of the existing Terminal B. In 2028, all facilities (both airport and supporting infrastructure improvements such as the realignment of the Bradley Airport Connector with Schoephoester Road) are expected to be completed. Conditions in 2028 are thus extensions of the same factors and trends that contribute to the 2018 No Action and Proposed Action conditions. Supporting documentation of the traffic impact evaluation is included in *Appendix B*.

Future Traffic Volume: No Action Alternative

No Action alternative traffic volumes for 2018 and 2028 were provided by the CTDOT Bureau of Policy and Planning. The volumes were developed using CTDOT's regional model to forecast growth within the study area, which includes traffic resulting from general development activity as well as increased passenger and cargo volume at BDL. Passenger and cargo volume is predicted to increase regardless of terminal renovation; reconfiguration and expansion would improve comfort and service delivery for users.

The traffic volume associated with general regional development activity and growth is estimated at an average annual growth rate of 1% to 1.5% through 2028, depending on location and travel direction within the study area. The majority of this increased traffic volume will be in place by 2018 according to the CTDOT model. The background vehicular traffic associated with increased passenger and cargo activity adds an additional 1% to 2% of annual growth, so that the overall annual growth rate in traffic volume associated with the background condition is 2% to 3.5% through 2028. From CTDOT, the total predicted increase in no build traffic volume between 2010 and 2028 at study area intersections is 25% to 75%, depending on location and peak period analyzed. The majority of airport-related traffic would access and egress the site via the Bradley Airport Connector, rather than Route 75.

Figures 3 and 4 in Appendix B depict 2018 No Action traffic volumes in the AM and PM peak hours, respectively. Figures 7 and 8 in Appendix B depict 2028 No Action traffic volumes.

Future Traffic Volume: Proposed Action

Construction of the new Terminal B would occur in phases, with completion of the initial phase by 2018 and full build-out anticipated by 2028. In the Airport Master Plan (HNTB, 1993) and Master Plan Update (PB Aviation, 2005), a number of projects are recommended to support the BDL vision, including a new parking garage and consolidation of rental car facilities within this garage. This project, known as the parking garage/ConRAC facility, is anticipated to be fully completed by 2018, and its availability for parking is anticipated to lead to an increase in vehicular traffic in the study area by 2018. Some additional traffic volume associated with the parking garage/ConRAC facility and other infrastructure improvements would also occur between 2018 and 2028, as use and occupancy rates rise.

Figures 5 and 6 in Appendix B depict 2018 build condition traffic volumes in the AM and PM peak hours, respectively. Figures 9 and 10 in Appendix B depict 2028 Proposed Action condition traffic volumes.

Level of Service Analysis

Level of service analyses were conducted at study area intersections for both the No Action and Proposed Action conditions for the peak periods during 2018 and 2028. The traffic signal phasing and timing plans were optimized within Synchro to accommodate future traffic volumes and patterns in the future. As shown in *Tables 5-4 and 5-5*, none of the study area intersections operates below LOS C, signifying a maximum average delay of 35 seconds at a signalized intersection, and 25 seconds at an approach of a stop-controlled intersection.

Table 5-4. 2018 Vehicular Levels of Service

Intersection	AM Peak Hour		PM Peak Hour	
	No Action	Proposed Action	No Action	Proposed Action
Signalized Intersections				
1. Route 75 at Route 140 (Elm Street)	B	A	B	B
2. Route 75 at Schoephoester Road / National Drive	B	B	C	C
3. Route 75 at Halfway House Road	A	A	B	B
4. Route 75 at Route 20 Westbound Ramp	C	C	C	C
5. Route 75 at Route 20 Eastbound Ramp	A	A	A	B
6. Schoephoester Road at Light Lane / Parking Lot	A	A	A	A
7. Schoephoester Road at Postal Road / Teletheater Drive	A	A	A	A
8. Schoephoester Road at Airport Terminal Jughandle	A	A	A	B
9. Schoephoester Road at Hamilton Sundstrand	A	A	A	A
10. Schoephoester Road W at Airport Terminal Road Exit	A	A	B	B
Stop Controlled Intersections				
11. Schoephoester Road at Cargo Road	A	A	C	C

Table 5-5. 2028 Vehicular Levels of Service

Intersection	AM Peak Hour		PM Peak Hour	
	No Action	Proposed Action	No Action	Proposed Action
Signalized Intersections				
1. Route 75 at Route 140 (Elm Street)	B	B	C	C
2. Route 75 at Schoephoester Road / National Drive	C	C	C	C
3. Route 75 at Halfway House Road	A	A	B	B
4. Route 75 at Route 20 Westbound Ramp	C	C	C	C
5. Route 75 at Route 20 Eastbound Ramp	A	A	A	A
6. Schoephoester Road at Light Lane / Parking Lot	A	A	A	A
7. Schoephoester Road at Postal Road / Teletheater Drive	A	A	A	A
8. Schoephoester Road at Airport Terminal Jughandle	A	A	B	B
9. Schoephoester Road at Hamilton Sundstrand	A	A	A	A
10. Schoephoester Road W at Airport Terminal Road Exit	A	A	C	B
Stop Controlled Intersections				
11. Schoephoester Road at Cargo Road	A	A	C	C

Slight increases in the average amount of delay (and reduced level of service) experienced during peak hours were predicted at the Westbound Ramp of Route 20 at Route 75, and at Cargo Road (minor street approaches only) in the afternoon. At the Route 20 ramp, this is primarily associated with new development and an adjacent frontage road that may exist in 2018, but not at present. Other intersections, including the Airport Terminal Jughandle, would have improved levels of service due to optimized signal timing, which would be anticipated to occur as regularly scheduled signal maintenance by CTDOT.

It should also be noted that the configuration for intersection #10 (Schoephoester Road W at Airport Terminal Road Exit) is different in the No Action and Proposed Action conditions. In the former, intersection #10 is located at the traffic signal currently accommodating a westbound and southbound approach near the existing short-term parking area (see description in “Existing Conditions”). In the Proposed Action alternative, the intersection configuration was changed in Synchro to reflect the geometry of the “at-grade” T-intersection alternative for the Bradley Airport Connector infrastructure project. The signal timing was optimized accordingly, producing performance improvements in the Proposed Action condition. Intersection #10 would not exist in the “flyover” alternative for the Bradley Airport Connector; the level of service at the adjacent intersection #9 would be minimally affected given its current and predicted exemplary performance.

Parking Considerations

The Proposed Action includes the demolition of Economy Lot 1 and Economy/Employee Lot 2, which would be replaced by the new Terminal Arrivals & Departures Roadway, the realigned Schoephoester Road, and the parking garage/ConRAC facility. The new parking garage would provide approximately 3,500 spaces, replacing 1,500 at-grade spaces in Lots 1 and 2. Approximately 2,250 of those spaces would be dedicated to the ConRAC facility, while the

remaining 1,250 spaces would be used for short and long-term parking for Terminal B. This would result in an overall reduction of on-airport parking of 300 spaces.

According to a ratio of one public parking space per 400 annual enplaned departing passengers, as referenced in the Schematic Design Report (Urban Engineers and STV, Inc., 2011), the expected demand for parking by 2028 will be 12,070 spaces. This demand would be more than adequately accommodated by the projected future parking supply of 17,600 parking spaces provided by both on and off-airport parking facilities.

5.3.3 Mitigation

Due to high anticipated levels of service provided by area roadways and surplus parking capacity in the vicinity of BDL, no direct or indirect adverse impacts to traffic or parking are anticipated to result from the Proposed Action. Therefore, no mitigation is deemed necessary to better support vehicular travel to, from, and within the airport property.

5.4 Considerations Relating to Pedestrian, Bicycle and Transit Access

Safe and pleasant accommodation of walking and bicycling is important for the many employees of the airport and surrounding businesses on Schoephoester Road and Route 75. Public and private mass transit vehicles also play a vital role in providing convenient transportation options for visitors to the airport and adjacent destinations. Each of these modes provides the additional benefit of reducing negative environmental and land use impacts related to vehicular traffic and parking volume.

5.4.1 Existing Conditions

The study area roadways and intersections have limited accommodations for pedestrians, bicyclists, and transit vehicles. At present, two bus routes operate in the study area, **CT**Transit Route #30 (Bradley Flyer) and **CT**Transit Route # 34 (Windsor Avenue – Poquonock). Bus route #30 travels between Downtown Hartford and BDL on weekdays and weekends, with typical headways of one hour between buses. On weekends, the time between successive buses may be two hours. In the study area, #30 travels from Route 20 to Ella Grasso Turnpike (Route 75), before entering airport property via Schoephoester Road. It returns to Hartford along the same route.

The second bus route, #34, travels between Downtown Hartford and Windsor (Day Hill Road) and operates on weekdays only, at 60 minute intervals during peak periods on study area roadways. It goes as far north as the interchange between Route 20 and Route 75, where passengers must transfer to #30 if they wish to continue on Route 75 or to BDL. These two routes do not appear to be coordinated as timetable information is not present on #34 for a planned stop near the aforementioned transfer point.

Bus stops are marked by signage in the vicinity of most of the study area intersections, though no shelters were present and most locations were lacking in supporting pedestrian facilities (adjacent sidewalks, crosswalks, protected street crossing opportunities, benches, pedestrian-scale lighting, etc.) For transit to be effective, available pedestrian facilities must support the comfortable continuation of passengers' journeys.

Each study area intersection along Route 75 and Schoephoester Road was examined in terms of pedestrian and bicycle accommodations. No bicycle facilities, including continuous bike lanes or unmarked shoulders of adequate width (a minimum of 4 feet) are present anywhere in the study area. Pedestrian facilities vary from location to location, but are predominantly inadequate. All but one intersection (Airport Service Road in front of Hamilton Sundstrand) has outdated pedestrian signals and activation buttons, which are also often lacking in visibility or accessibility. Sidewalk ramps are not present in most places, as are visible crosswalks. Sidewalks are also not present in most locations on either side of Route 75 and along the entirety of Schoephoester Road, despite the presence of pedestrian and bicycle activity and demand.

5.4.2 Impact Analysis

As discussed previously, the Bradley Area Transportation Study (URS, 2002) recommends a comprehensive corridor improvement along Route 75, which includes the addition of a landscaped median, and 4-foot roadway shoulders, 5-foot sidewalks, streetscaping, 4-foot landscape strips, and bus stops (preferably with shelters) on both sides of the corridor. The proposed streetside improvements would provide a minimally adequate pedestrian and bicycle environment along this commercial corridor. More appropriate physical improvement recommendations include wider shoulders (5-foot to more safely accommodate cyclists), wider landscape strips (5 to 8-foot to better accommodate shade trees, bus shelters, and roadway snow removal), and wider sidewalks (6 to 10-foot is more suitable when adjacent to commercial land uses).

Along Schoephoester Road, no specific non-automobile improvement projects or cross-sections have been identified, though the Bradley Area Transportation Study recommends that pedestrian facilities are installed with "all new construction, reconstruction, and major maintenance projects whenever possible." The installation of continuous sidewalks (minimum 5-foot width) on at least one side of Schoephoester Road from Route 75 to Airport Service Drive (or further to the planned parking garage/ConRAC facility) would further enhance pedestrian facilities in the corridor and would better support existing and future transit service as well as pedestrian travel between the Airport and adjacent destinations (car rental/parking, Teletheater, etc).

The Bradley Area Transportation Study and the New Haven Hartford Springfield Commuter Rail Implementation study (Wilbur Smith, 2005) both identified the need for improved transit service to and from Bradley Airport. Specifically, it is important to accommodate people coming from locations other than just Downtown Hartford, as the airport is regional in nature. To support this demand, the New Haven Hartford Springfield Commuter Rail Implementation Study recommended the establishment of a shuttle bus between the Windsor Locks Train Station (estimated volume of approximately 25 passenger trains per day). The shuttle schedule should also be coordinated with the train schedule. Further, increased service frequency of the

Bradley Flyer (#30) and the creation of additional regularly scheduled transit trips from surrounding areas, particularly east and west of BDL, would mitigate some of the need for further improvements to parking and accommodation of private small passenger vehicles. The Windsor Locks train station and shuttle improvements are expected to be in place by 2028, if not 2018.

Under the Proposed Action alternative, no impacts are anticipated to pedestrians, bicyclists, and transit for the external roadway network. The proposed parking garage/ConRAC facility would provide two elevated pedestrian bridges connecting to the new Terminal, benefiting pedestrians crossing the terminal roadways. Under the No Action alternative, all garage traffic would continue to utilize the existing parking garage facility, which requires pedestrians to cross either the arrivals or departures at-grade roadway at marked crosswalks with stop-control for through traffic. Pedestrians utilizing these crosswalks under either alternative may be impacted by increased vehicle traffic on the arrivals/departures roadways. However, the crosswalks would continue to be safely stop-controlled for vehicle traffic.

The Proposed Action would result in the provision of an additional stop for the Bradley Flyer (#30) at the proposed Terminal B. This would result in a negligible increase in travel time for the overall bus route.

5.4.3 Mitigation

No long-term mitigation related to pedestrians, bicyclists, or transit is necessary, since no direct or indirect adverse impacts to these modes of transportation are anticipated.

5.5 Air Quality

Under the authority of the U.S. Clean Air Act, as amended, the U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for concentrations of six air pollutants: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter ten microns or smaller in diameter (PM₁₀), particulate matter two and a half microns or smaller in diameter (PM_{2.5}), sulfur dioxide (SO₂), and lead (Pb).

Connecticut adopted the national standards, listed in *Table 5-6*, and subsequently developed a State Implementation Plan (SIP) to attain and maintain these standards. Primary standards are established to protect public health; secondary standards are established to protect plants and animals and to prevent economic damage. The CTDEEP operates 21 pollutant monitoring stations across the state as of July 2011.

Table 5-6. National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time		
Carbon Monoxide (CO)	9 ppm (10 mg/m ³)	8-hour ⁽¹⁾	None	
	35 ppm (40 mg/m ³)	1-hour ⁽¹⁾		
Lead (Pb)	0.15 µg/m ³ ⁽²⁾	Rolling 3-Month Average	Same as Primary	
	1.5 µg/m ³	Quarterly Average	Same as Primary	
Nitrogen Dioxide (NO ₂)	0.053 ppm (100 µg/m ³)	Annual (Arithmetic Mean)	Same as Primary	
	0.100 ppm	1-hour ⁽³⁾	None	
Particulate Matter (PM ₁₀)	150 µg/m ³	24-hour ⁽⁴⁾	Same as Primary	
Particulate Matter (PM _{2.5})	15.0 µg/m ³	Annual ⁽⁵⁾ (Arithmetic Mean)	Same as Primary	
	35 µg/m ³	24-hour ⁽⁶⁾	Same as Primary	
Ozone (O ₃)	0.075 ppm (2008 standard)	8-hour ⁽⁷⁾	Same as Primary	
	0.08 ppm (1997 standard)	8-hour ⁽⁸⁾	Same as Primary	
	0.12 ppm	1-hour ⁽⁹⁾	Same as Primary	
Sulfur Dioxide (SO ₂)	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm (1300 µg/m ³)	3-hour ⁽¹⁾
	0.14 ppm	24-hour ⁽¹⁾		

Source: EPA National Ambient Air Quality Standards (NAAQS), EPA 40 CFR part 50

(1) Not to be exceeded more than once per year.

(2) Final rule signed October 15, 2008.

(3) To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

(4) Not to be exceeded more than once per year on average over 3 years.

(5) To attain this standard, the 3-year average of the weighted annual mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³.

(6) To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m³ (effective December 17, 2006).

(7) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (effective May 27, 2008)

(8) a. To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.

b. The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.

c. EPA is in the process of reconsidering these standards (set in March 2008).

(9) a. EPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard ("anti-backsliding").

b. The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is < 1.

The State of Connecticut is divided into two air quality districts: the Greater Connecticut district, which includes Hartford, New London, Tolland, Windham and Litchfield counties, and the New York-Northern New Jersey-Long Island (NY-NJ-CT) district. Bradley International Airport is located in the Greater Connecticut district. Each district is assigned an attainment or non-attainment status with respect to the NAAQS listed in *Table 5-6*.

The entire state is currently in attainment for CO, NO₂, Pb, SO₂ and PM₁₀ and the Greater Connecticut district is also in attainment for PM_{2.5} (EPA, 2011). The state attainment status implies that all regions of the state are in compliance with all standards (i.e., short term and long term; primary and secondary) for a particular pollutant. The project site is located in the Hartford-New Britain-Middletown, CT moderate maintenance area for CO. A maintenance area is a geographic area with a history of nonattainment, but is currently in attainment for the NAAQS.

Non-attainment for an air pollutant is assigned when one or more of the standards for the pollutant have been violated in one or more regions of Connecticut. The non-attainment designation that is subsequently applied to a region can reflect the “degree” of non-attainment depending upon a number of factors including the air pollution history in the region, previous designation of the region as either attainment or non-attainment, lack of air pollutant monitoring in the region, and inferences made based on pollutant monitoring performed in adjacent or similar regions (CTDEP, 2005).

Ozone concentrations for comparison to the NAAQS are calculated by taking the 3-year average of the annual 4th highest daily maximum 8-hour ozone averages. Currently the entire state of Connecticut is designated as non-attainment for ozone based on the 2008 ozone standard of 0.075 ppm (EPA, 2011a).

Stationary and mobile sources are generators of air pollutants. Potential emissions associated with construction of the new Terminal B, central utility plant, roadways, and the parking garage/ConRAC facility would be temporary and would only be generated during the estimated 3-year construction period. Following construction, increased emissions of air pollutants can result from increases in vehicle volumes or congestion, especially at intersections. Stationary sources, i.e., fuel-burning equipment, also generate emissions of criteria pollutants. In accordance with FAA requirements, an analysis of the anticipated total net operational emissions³ associated with the Proposed Action is presented in this section. The FAA-approved software, the Emissions Dispersion Modeling System (EDMS) version 5.1.3, was used for air quality analyses related to permanent new emissions sources. Operational emissions inventories were prepared for the year 2010 (existing conditions) and the full-build project horizon year of 2028. Construction period air quality emissions are estimated in this section using estimated construction equipment requirements and typical emission factors. The focus of the air quality analysis is on the U.S. EPA criteria air pollutants, including CO, NO_x and SO_x, and PM. Ozone-forming precursor emissions were addressed through the analysis of volatile organic compounds (VOCs) and NO_x. The Proposed Action’s conformity with the Clean Air Act is presented in this section. Hazardous air pollutants (HAPs) and greenhouse gas (GHG) emissions associated with the project are also addressed in this section.

³ Total Net Emissions = (Future Proposed Action Emissions – Future No Action Emissions)

5.5.1 Emissions Inventories

5.5.1.1 Methodology

Estimates of emissions of air pollutants by source are known as emission inventories. Emissions inventories provide an indication of the relative magnitude of future increases of pollutants compared to existing conditions and potential increases or decreases in air pollutants due to the Proposed Action compared to the No Action alternative.

For a general conformity evaluation, emissions associated with the Proposed Action and No Action alternatives are calculated for the 2028 build year and the difference in the two inventories are the emissions directly attributable to the project. These “net” emissions are compared to the *de minimis* thresholds (*Table 5-9*) to determine if conformity is applicable to the Federal action. If the emissions attributable to construction and operation of the Proposed Action are less than the *de minimis* levels and the emissions are not regionally significant, the action can be presumed to conform to the State Implementation Plan (SIP), and a conformity determination is not required. If the direct and indirect emissions from the action are greater than the *de minimis* levels or the emissions are regionally significant, a conformity determination is required.

Construction-related emissions would be temporary in nature and occur during the estimated construction period. The construction related emissions were estimated for each construction task based on the scope of development and the anticipated schedule and duration of each task, including the construction of the new Terminal B, the central utility plant, temporary and permanent roadways, landside and airside utilities and utility relocation, hydrant fueling, the parking garage/ConRAC facility. The demolition of the existing Terminal B building is included in the No Action Alternative emission estimates. The number of pieces of equipment and the total days required for typical construction equipment were estimated for each construction task based on the current level of design, and representative estimates that are reasonable at this stage of design development. Consistent with FAA guidance, typical emissions factors (in grams of pollutant per horsepower per hour) for non-road equipment (EPA, 2010c) were used to determine the total estimated emissions assuming 8 hour work days. Conservative vehicle emission factors were used based on vehicle emission standards for model years 1996 to 2000, known as “Tier 1” under 40 CFR Part 89 standards. The construction emissions would likely be lower than estimated since a portion of the construction equipment would likely be newer and be required to have emission rates lower than the “Tier 1” standards.

Operational emission inventory estimates were made for the Existing Conditions in 2010, the No Action alternative in 2028, and the Proposed Action alternative in 2028 using EDMS. Although the project will be phased, all of the emission sources resulting from the Proposed Action are included in the 2028 scenario, which represents full-build conditions.

Annual emissions inventories were prepared for the pollutant and pollutant precursors of CO, Non-Methane Hydrocarbons (NMHC), VOC, nitrogen oxides (NO_x), sulfur oxides (SO_x), PM_{2.5} and PM₁₀. Lead (Pb) was not included in the emission inventory calculations because the Greater Connecticut district is in attainment for Pb. Lead has also ceased to be a major ground transportation-related pollutant since the prohibition of Pb as an additive in liquid fuels.

The following sources are included in the emissions inventories: aircraft activity, ground support equipment (GSE) and auxiliary power units (APUs), on-road vehicles, on-road vehicles in parking facilities, and stationary sources. Training fires are not included in the emissions inventory since there will be no change in the number of training fires or quantity of fuel burned in the future conditions scenarios. Site-specific information was used when available; EDMS databases were used as default values where no other information was available.

Aircraft Activity

Aircraft engines are the primary source of aircraft-related air pollutant emissions. EDMS models each aircraft based on aircraft type and engine type. For this EA/EIE, each aircraft activity is assumed to be an LTO cycle, which consists of an “arrival” and a “departure.” An arrival consists of the “approach” and “taxi in” modes. A departure consists of the “gate,” “taxi out,” “takeoff,” and “climb out” modes. The quantities of emissions released are calculated using the International Civil Aviation Organization (ICAO) and Environmental Protection Agency Times in Mode provided in EDMS.

The aircraft fleet mix under existing (2010) and proposed (2028) conditions was estimated based on the projected 2010 and 2022 fleet mix presented in the Airport Master Plan Update (PB Aviation, 2005). An updated projection of the total annual operations is provided in the Preliminary Engineering and Programming Report (Urban Engineers and STV, Inc., 2010). The aircraft fleet mix from the Airport Master Plan Update was scaled to the number of operations in 2009 for the existing conditions and the projected operations for 2028 presented in the Preliminary Engineering Report. The No Action alternative includes background passenger growth. Passenger enplanements/deplanements are projected to increase from 5,334,000 to 9,656,000 (81.0%) between 2010 and 2028. The aircraft fleet mix and total annual operations for each aircraft that were used in the EDMS analysis are presented in *Appendix C*.

Ground Support Equipment (GSE) and Auxiliary Power Units (APUs)

Data on the number and type of GSE vehicles servicing the various types of commercial aircraft; the amount of time each piece of equipment spends with individual aircraft; and emission factors for each piece of equipment are available in EDMS. APUs are typically on-board generators that provide electrical power to the aircraft while its engines are shut down. GSE emission factors used by EDMS are derived from EPA’s NONROAD2005 model and are based on fuel, brake horsepower, and load factor. Default emission factors for GSE and APUs provided in EDMS were used in the emissions inventory.

On-Road Vehicles

The total emissions for a roadway are the product of the emission factors (in grams per vehicle-mile), the annual traffic volume, and the roadway length. The emissions inventory includes the on-road and highway vehicle trips generated by the airport on the road segments linking the intersections described in *Section 5.3*. The peak hour traffic at the 11 intersections considered in the traffic analysis were converted to annual vehicle trips by assuming that the peak hour vehicle trips are approximately 10% of the number of average daily trips (ADT). The ADT was then multiplied by 365 to estimate the annual volume. The vehicular emission factors contained in EDMS are obtained from the EPA’s MOBILE 6.2, and a default fleet mix was assumed (EPA, 2003).

On-Road Vehicles in Parking Facilities

EDMS calculates emissions from parking facilities based on the annual number of vehicles using the parking facilities (i.e., vehicle operations). An entry and exit of the parking facility, including vehicle idling and movement, are considered as a single vehicle operation in EDMS. As with the on-road vehicle emissions, MOBILE 6.2 was used to calculate vehicle emissions associated with the parking facilities based on a default vehicle fleet mix. In addition, EDMS default values were used for the amount of idle time and distance traveled in the parking facility.

The airport-owned parking includes short and long-term parking in the parking garage, and the surface lots 1, 3 and 4. Surface lots 5A and 5B are not currently in operation. Short- and long-term parking and employee parking is also provided in Lot B. The existing conditions are based on the total cars that parked during a 12-month period from October 2010 through September 2011. Employee parking was estimated by assuming the employee lot fills to capacity twice each day. The number of cars parking at the airport under the No Action alternative in 2028 was estimated by multiplying the current 12-month parking volume by the percentage increase in aircraft operations, as provided in the Preliminary Engineering and Programming Report (Urban Engineers and STV, Inc., 2010).

Under the Proposed Action (2028), the ConRAC would result in increased parking and vehicular traffic compared to the No Action (2028) condition. Based on information provided in the Preliminary Engineering and Programming Report, the ConRAC facility is designed to accommodate an average of 2,775 rental vehicles per day.

Stationary Sources

Stationary sources at the airport include boilers, hot water heaters, chillers, roof air conditioning units, space heaters, and emergency generators. Emissions were estimated for stationary sources within the project area under existing conditions (2010) and the No Action and Proposed Action (2028) scenarios. Emissions associated with aircraft deicing operations were also included in the stationary source emissions calculations.

Emissions associated with Terminal A, the existing co-generation plant, and the airport incinerator are assumed to remain unchanged under future conditions (No Action and Proposed Action) and therefore were not modeled in the emissions inventory. Emissions associated with the proposed pump station at the traffic circle are assumed to be similar to the emissions from the existing pump station that will be replaced; therefore, the existing and proposed pump stations were not included in the emissions inventory.

Stationary source emissions were estimated for existing conditions based on annual fuel usage or total annual hours of operation of stationary source equipment (*Appendix C*). Several assumptions were made to provide a reasonable estimate of stationary source emissions under future conditions given the conceptual nature of the current design:

- Stationary sources in the footprint of the existing Terminal B and the IAB will be removed under the No Action and Proposed Action conditions.
- Stationary sources in the FIS building will be removed under the Proposed Action.

- Under the Proposed Action, the new Terminal B will be served by an emergency generator that is similar in size and with similar operating characteristics as the emergency generator currently in Terminal A co-generation facility.
- Under the Proposed Action, the Terminal B central utility plant will house three (3) chillers and two (2) boilers, based on the existing available design information. The boilers and chillers in the new Terminal B will have similar annual hours of operation as the boilers and chillers in Terminal A.
- Under the Proposed Action, emissions associated with aircraft deicing will increase in proportion to the projected increase in aircraft operations for 2028, as identified in the Preliminary Engineering and Programming Report (Urban Engineers and STV, Inc., 2010).

5.5.1.2 Impact Analysis

Construction-Related Impacts

Pollutant emissions associated with construction activities would include combustion emissions from vehicles and heavy-duty equipment used for demolition of existing buildings and construction of new facilities. The contaminants of concern include VOC, CO, and NO_x. These emissions would be temporary, occurring only during construction. The total net emissions is equal to the difference between the total direct and indirect emissions associated with the Proposed Action and the future No Action alternative, for each contaminant of concern. The total net emissions are presented in *Table 5-7*. The maximum annual total net construction-period emissions are predicted to occur between 1/1/2016 and 12/31/2016, during construction activities, includes the ConRAC facility construction, parking garage construction, Central Utility Plant construction, Phase 1 of Terminal B construction, the existing FIS building demolition, hydrant fueling construction, and Phase 1 of the airside utilities, apron, and taxiway construction.

Emissions calculations for each major construction task based on estimated equipment requirements, and a Gantt chart depicting the estimated emissions per quarter over the construction period, are presented in *Appendix C*.

Table 5-7. Construction Emissions Inventory

	Air Pollutant		
	(Maximum Annual Tons)		
	VOC	NO _x	CO
No Action Alternative	1.8	40.6	7.3
Proposed Action	3.6	76.4	14.5
Maximum Annual Total Net Construction Emissions	3.6	76.4	14.5
Occurs during:	1/1/2016 to 12/31/2016	1/1/2016 to 12/31/2016	1/1/2016 to 12/31/2016

Operational Period Impacts

As shown in *Table 5-8*, aircraft are the largest operational source of air pollutant emissions for all scenarios, while GSE and APUs are the second largest, followed by on-road vehicle emissions. The projected increase in emissions from the existing conditions to the No Action scenario is due to the corresponding projected increase in aircraft operations. Since the increase in aircraft operations is a background effect, and no increase in aircraft operations is anticipated due to the Proposed Action, the difference in projected emissions between the No Action and Proposed Action alternatives is minor. The projected increases in emissions between the No Action and Proposed Action alternatives are due to increases in on-road vehicle trips, parking facility usage, and stationary source emissions due to the addition of boilers, chillers and an emergency generator.

Table 5-8. Operational Emissions Inventory

Source	Air Pollutant (tons per year)						
	CO	NMHC	VOC	NO _x	SO _x	PM-10	PM2.5
2010 Existing Conditions							
Aircraft	1,458	251	250	982	111	13.8	13.8
GSE & APUs	910	31.2	32.4	125	7.02	7.02	6.90
On-Road Vehicles	365	19.5	19.8	44.3	0.27	1.27	0.78
Parking Facilities	5.23	0.597	0.603	0.467	0.002	0.010	0.006
Stationary Sources	1.25	0.22	0.23	3.98	0.08	0.17	0.17
Total	2,740	303	303	1,156	119	22.3	21.7
2028 No Action							
Aircraft	2,324	432	429	1,598	180	21.9	21.9
GSE & APUs	294	13.5	13.9	78	10.21	8.50	8.40
On-Road Vehicles	343	12.4	12.6	15.5	0.36	1.12	0.52
Parking Facilities	5.23	0.597	0.603	0.467	0.002	0.010	0.006
Stationary Sources	0.10	0.08	0.08	0.40	0.01	0.02	0.02
Total	2,967	458	456	1,693	191	31.6	30.9
2028 Proposed Action							
Aircraft	2,324	432	429	1,598	180	21.9	21.9
GSE & APUs	294	13.5	13.9	78	10.21	8.50	8.40
On-Road Vehicles	363	13.1	13.3	16.4	0.38	1.18	0.55
Parking Facilities	10.40	0.865	0.875	0.389	0.006	0.019	0.008
Stationary Sources	1.70	0.10	0.12	3.03	0.02	0.17	0.17
Total	2,993	459	457	1,696	191	31.8	31.0

GSE = Ground Service Equipment
APUs = Auxiliary Power Units

5.5.2 General Conformity

5.5.2.1 Methodology

The FAA is required to assure that an applicable proposed action in a non-attainment or maintenance area “conforms” to any relevant State Implementation Plan (SIP). This entails determining whether the emissions due to the Proposed Action are consistent with the State’s plan to meet the Federal air quality standards. Federal actions subject to conformity are classified into two categories: transportation conformity and general conformity. Transportation conformity determination is not required for the Proposed Action since it is not a new roadway project. The following methodology was used to determine if a general conformity determination is required.

40 CFR 93 § 153 defines *de minimis* levels, that is, the minimum threshold for which a conformity determination must be performed, for various criteria pollutants in various areas. Those thresholds are shown in *Table 5-9*, and the thresholds relevant to the project area are highlighted. CO and ozone-forming precursor emissions, including VOCs and NO_x, must be evaluated under the *de minimis* levels since the project area is within a CO maintenance area and an ozone non-attainment district inside of a transport region.

Table 5-9. *de minimis* Levels for Conformity Determination

Pollutant	Area Type	Tons/Year
Ozone (VOC or NO _x)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NO _x)	Marginal and moderate nonattainment inside an ozone transport region	100
	Maintenance	100
Ozone (VOC)	Marginal and moderate nonattainment inside an ozone transport region	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
Carbon monoxide, SO ₂ and NO ₂	All nonattainment & maintenance	100
PM-10	Serious nonattainment	70
	Moderate nonattainment and maintenance	100
Lead (Pb)	All nonattainment & maintenance	25

5.5.2.2 Impact Analysis

If the projected emissions from the Proposed Action are less than the *de minimis* levels and the emissions are not regionally significant, the action can be presumed to conform to the State

Implementation Plan (SIP), and a conformity determination is not required. As shown in *Table 5-9*, the emissions inventory demonstrates that the Proposed Action will not cause a significant air quality impact, since the projected increases in ozone-forming precursor emissions due to the Proposed Action are well below the *de minimis* levels and it is unlikely that the pollutant concentrations would exceed a NAAQS. In addition, the maximum annual emissions during construction would not exceed the *de minimis* levels as presented in *Table 5-10*, which is anticipated to be completed by the 2028 operational period at the full-build conditions. Even under a conservative scenario that assumes maximum annual construction emissions (*Table 5-7*) occur simultaneously with net operational emissions (*Table 5-10*), total net emissions of VOC, CO, and NO_x are below the *de minimis* levels listed in *Table 5-9*.

Table 5-10. Comparison of Ozone-Forming Precursor Emissions Between the No Action and Proposed Action Alternatives

	VOC	NO _x	CO
2028 No Action	456.4	1692.6	2966.6
2028 Proposed Action	457.4	1696.0	2992.9
Increase due to Proposed Action	1.0	3.4	26.2
Applicable <i>de minimis</i> Levels	50	100	100

5.5.2.3 Mitigation

Emissions generated by the Proposed Action are not anticipated to exceed any *de minimis* threshold levels. Therefore, the Proposed Action alternative would generate less-than-significant air quality impacts, and no mitigation measures are required.

5.5.3 NAAQS Assessment - General

Air quality is assessed based on a comparison of the NAAQS for each criteria pollutant with the projected pollutant concentrations at the airport. According to the *Air Quality Procedures For Civilian Airports & Air Force Bases* (AEE, 1997), actions that would not increase airport capacity, lead to increased congestion of roadways or airfields, or relocate aircraft or vehicular activity closer to sensitive receptors are not likely to exceed the NAAQS for CO. In addition, based upon estimated regional emissions for Hartford County, the net emissions for the Proposed Action are not regionally significant since they do not exceed 10% of the areas total emissions for VOC, CO or NO_x, which were estimated to be 32,214 tons/year, 186,852 tons/year, and 23,700 tons/year, respectively in 2005 (U.S. Air Force, 2010). Therefore, a general NAAQS assessment is not required.

5.5.4 NAAQS Assessment - Roadway Intersection Analysis

Microscale or “hot-spot” analysis is an estimation of likely future localized CO and PM_{2.5} pollutant concentrations and a comparison of those concentrations to the NAAQS. Hot-spot analyses assess impacts on a scale smaller than the entire nonattainment or maintenance area including, for example, congested roadway intersections. Hot-spot analyses are performed using

an air quality dispersion model to predict the effects of vehicle emissions on localized air quality.

According to EPA's *Guideline For Modeling Carbon Monoxide From Roadway Intersections* (1992) and *Air Quality Procedures For Civilian Airports & Air Force Bases* (AEE, 1997), intersections that should be considered for modeling are referred to as "critical" intersections. Critical intersections have a level of service (LOS) rating of D, E, or F or are predicted to experience a decline in LOS to D, E, or F as a result of increased traffic volumes or construction of a nearby project.

As presented in *Section 3.3*, traffic volumes and LOS for the existing conditions in 2010, the no-build conditions in 2018 and 2028, the initial phase build conditions in 2018, and the full-build conditions in 2028 were calculated using Synchro Professional Software, Version 7. Ten signalized intersections and one stop-controlled intersection were analyzed in the project vicinity. Traffic volumes for the existing conditions, no-build, and build conditions were provided by CTDOT Bureau of Planning. The intersection capacity analysis was calculated during the weekday morning and afternoon peak hours. The results of the traffic analysis are summarized in *Tables 5.4 and 5.5*.

The traffic signal phasing and timing plans were optimized to accommodate future traffic volumes and patterns. No intersection is predicted to operate below LOS C, signifying a maximum average delay of 35 seconds at a signalized intersection. Based on the EPA and FAA guidance, a microscale intersection analysis is not necessary since there are no signalized intersections with a LOS of D, E or F under the existing or proposed conditions.

5.5.5 Hazardous Air Pollutants

Emissions of a number of substances commonly called toxic air contaminants or hazardous air pollutants (HAPs) are produced by a wide range of airside and landside sources. The term HAPs refers to pollutants that do not have established NAAQS, but present potential adverse human health risks from short-term (acute) or long-term (chronic) exposures. EPA has identified roughly 25 individual HAPs that are associated with emissions from aircraft and GSE. However, EPA does not specify aircraft and airports in the definitions and categories of HAP sources, nor has EPA established standards for HAPs. When compared with existing urban background air pollutant concentrations, air quality monitoring studies near several large airports have not shown that increased HAP levels occur near those facilities. In fact, only a small percentage of an urban area's overall air pollution is attributable to airport emissions (GAO, 2003). Nevertheless, due to the emissions levels of unburned hydrocarbons and particulates near airports, EPA's National Air Toxic Program notes that airports are complex facilities that emit HAPs. Therefore, to comply with NEPA's disclosure requirements, FAA reports HAPs emissions in its environmental documents for information purposes only (FAA, 2007).

Project-related emissions of HAPs were estimated using EDMS and addressed quantitatively in this EA/EIE. However, it should be noted that there are inherent uncertainties in the state of the science for quantifying HAPs emissions. Compared to the No Action alternative in 2028, overall project-related VOC and particulate emissions from the Proposed Action in 2028 are

projected to increase by approximately 0.24% for VOCs, 0.58% for PM_{2.5}, and 0.69% for PM₁₀. Thus, only minor increases in project-related emissions of HAPs are anticipated.

5.5.6 Greenhouse Gases and Climate Change

5.5.6.1 Existing Conditions

Greenhouse gases (GHGs) are components of the atmosphere that trap heat relatively near the surface of the earth, and therefore, contribute to the greenhouse effect and global warming. Most GHGs occur naturally in the atmosphere, but increases in their concentration result from human activities such as the burning of fossil fuels. Global temperatures are expected to continue to rise as human activities continue to add carbon dioxide, methane, nitrous oxide, and other greenhouse (or heat trapping) gases to the atmosphere. Since 1900, the Earth's average surface air temperature has increased by about 1.2 to 1.4°F. Most of the U.S. is expected to experience an increase in average temperature (EPA, 2010b; IPCC, 2007).

The extent of climate change effects, and whether these effects prove harmful or beneficial, will vary by region, over time, and with the ability of different societal and environmental systems to adapt to or cope with the change. Human health, agriculture, natural ecosystems, coastal areas and heating and cooling requirements are examples of climate-sensitive systems. Some observed changes include shrinking of glaciers, thawing of permafrost, later freezing and earlier break-up of ice on rivers and lakes, lengthening of growing seasons, shifts in plant and animal ranges and earlier flowering of trees (EPA, 2010b; IPCC, 2007).

In 2008, Connecticut enacted legislation (Connecticut General Statutes Section 22a-200) that sets a statewide GHG emissions reduction target of 10 percent below 1990 levels by 2020. Additionally, barring intervention at the federal level or through the Regional Greenhouse Gas Initiative (RGGI), the act requires an 80 percent GHG reduction below 2001 levels by 2050. The latest statewide GHG emissions inventory for Connecticut indicates that gross GHG emissions in Connecticut have shown a slight decline from 2001 to 2007 (CTDEEP, 2010). CO₂ emissions constitute the majority of Connecticut's total gross GHG emissions. Nearly 92 percent of the total state GHG emissions per year are the result of fossil fuel combustion. Transportation (44%) is shown to be the leading source of GHG emissions, followed by electric utilities (22%), and residential combustion (21%).

5.5.6.2 Impact Analysis

Under the No Action alternative, Terminal B would not be constructed and no increase in on-road vehicle trips, parking facility usage, or stationary source emissions would be generated due to the proposed terminal. Note that the increase in aircraft operations and resulting aircraft GHG emissions are forecasted to occur regardless of the Proposed Action. However, one key finding of the *Global Climate Change Impacts in the United States* (USGCRP, 2009) is that climate changes are underway in the United States and are projected to grow. Climate-related changes are already observed in the United States and its coastal waters. These include increases in heavy downpours, rising temperature and sea level, rapidly retreating glaciers, thawing permafrost, lengthening growing seasons, lengthening ice-free seasons in the ocean and on lakes and rivers,

earlier snowmelt, and alterations in river flows. These changes are projected to continue in the future.

The Proposed Action may result in an increase in the use of gasoline-powered passenger vehicles and associated GHG emissions due primarily to the increase in car rentals at the ConRAC facility. A conservative estimate of CO₂ equivalent emissions was determined to be 15,200 metric tons per year. This estimate uses a conservative assumption for the number of rental cars used, and the EPA-recommended annual travel distances, vehicle efficiencies, and an emission factor of 8.8 kg of CO₂/gallon is assumed for gasoline (*Appendix C*; EPA, 2005).

The Council on Environmental Quality (CEQ) has issued guidance on when and how federal agencies should consider GHG emissions and climate change in NEPA. The guidance includes a presumptive effects threshold of 25,000 metric tons of CO₂ equivalent emissions on an annual basis from an action (CEQ, 2010). The anticipated GHG emissions associated with the Proposed Action are below the CEQ threshold. Therefore, GHG emissions from the Proposed Action would not contribute appreciably to climate change or global warming compared to the No Action alternative, nor affect the State's GHG initiatives or plans.

5.5.6.3 Mitigation

Since the anticipated GHG emissions associated with the Proposed Action are well below the CEQ threshold, no mitigation measures are necessary.

5.6 Noise

5.6.1 Existing Conditions

Many metrics have been developed for describing the impacts of environmental noise, but the most commonly used indicators for assessing environmental noise impacts are the energy-averaged equivalent sound level (Leq) and the day-night average sound level (DNL or Ldn). The DNL is the standard Federal metric for determining cumulative exposure of individuals to noise and it is used by FAA as the primary metric to evaluate cumulative noise effects on people due to aviation activities. The DNL noise indicator is a 24-hour weighted average sound level that is derived from hourly Leq values. DNL is designed to reflect the increased sensitivity of receptors to noise at night in areas where people normally sleep, and is defined as the total sound energy over 24 hours, with 10 decibels added to nighttime (10 PM to 7 AM) noise levels prior to summation.

Noise is produced by numerous airport activities, including traffic, parking facilities, and building mechanical systems. Noise produced by these sources generally attenuates within a few hundred feet and typically does not cause off-airport impacts. Noise associated with aircraft operations is the greatest concern in off-airport areas.

Bradley International Airport prepared a 14 CFR Part 150 Study (Part 150 Study) that documents predicted existing and future aircraft noise and examines the compatibility of land uses surrounding the airport with anticipated noise impact areas. The document was the result

of detailed investigation and analysis that began in 1999 and was completed in August of 2004, resulting in Noise Exposure Maps (NEMs) and a Noise Compatibility Program (NCP) (HNTB, 2004). The Part 150 Study contains predictions of aircraft noise impacts on areas surrounding the airport, focusing on an annualized DNL expressed in A-weighted decibels (dBA). Additionally, the 2005 AMPU presents additional analysis, including a comparison of 2003 and 2008 NEMs, and the 2008 NEM and future 2012 and 2022 NEMs.

The NEMs presented in the Part 150 Study were determined using the Integrated Noise Model (INM), version 6.0b. INM is developed and maintained by the FAA for predicting noise exposure around airports. It is designed to estimate long-term average effects using annual input conditions. Input data and parameters for the model are discussed in detail in Chapter 3 of the Part 150 Study. The input data include details of the airport geometry, operations, climate, flight paths, and other factors (HNTB, 2004).

The majority of these input data, including airport geometry, climate, operations, and flight paths remain constant during the analysis periods considered. Factors that are most likely to change include number of aircraft operations and fleet mix. The limits of noise exposure are sensitive to these factors since increasing noise levels are associated with increasing number of operations, increasing size and weight of aircraft, and older aircraft production dates.

Average daily flight operations and fleet mixes used in the Part 150 Study were developed for 2003 and 2008 using forecasts developed by PB Aviation and supplemented by the Official Airline Guide (OAG) and FAA Automated Radar Terminal System (ARTS) radar data. These projections were approved by FAA in 2003 (HNTB, 2004).

FAA has determined that residential land uses are considered compatible with noise exposure levels below 65 dB LDN. *Figure 5-6* shows the predicted 2003 and 2008 NEMs with surrounding land use within noise contours spaced at 5 dB DNL intervals beginning at 65 dB DNL (PB Aviation, 2005).

Table 5-11 presents a summary of off-airport land use within the predicted 2003 and 2008 NEM contours without mitigation.

The data presented in *Table 5-11* show that there are non-compatible uses located within the predicted 65 dB DNL contour. BDL has prepared and is implementing an NCP to reduce noise-related impacts within this contour. The current NCP was developed during preparation of the Part 150 Study and was approved by FAA in 2004. The NCP currently being undertaken by the airport includes both land use and noise abatement measures:

- ***Land Use Measure 1 – Zoning for Compatible Use.*** This measure includes amendment of zoning maps and guidelines to prevent new non-compatible development within the Mitigated 2008 NEM 65 dB DNL contour unless it met the Noise Level Reduction guidelines of 14 CFR Part 150.



Figure 5-6. Year 2003 and 2008 65, 70, and 75 dB DNL Contours with Existing Land Use

Table 5-11. Off-Airport Land Use within Predicted Noise Exposure Contours

Map	Land Use	65-69 dB DNL			70-74 dB DNL			Within 75 dB DNL		
		Acreage	Units	Pop.	Acreage	Units	Pop.	Acreage	Units	Pop.
2003 NEM	Residential	194	327	748	0	0	0	0	0	0
	Non-Residential	1,047			207			1		
	Total Area	1,241			207			1		
	Schools		1			0			0	
	Places of Worship		1			0			0	
	Nursing Homes		0			0			0	
	Pre-schools		2			0			0	
	Historic		0			0			0	
	Cemetery		1			0			0	
2008 NEM	Residential	226	367	850	1	2	3	0	0	0
	Non-Residential	1,087			230			2		
	Total Area	1,313			231			2		
	Schools		1			0			0	
	Places of Worship		1			0			0	
	Nursing Homes		0			0			0	
	Pre-schools		2			0			0	
	Historic		0			0			0	
	Cemetery		1			0			0	

Compiled from Tables 4.4, 4.5, and 4.6 of the Part 150 Study (HNTB, 2004).

- **Land Use Measure 2 – Amending Building Codes.** This measure supports the revision of State building codes to ensure interior NLR techniques per Part 150 guidelines to areas of new construction and substantial reconstruction within the Mitigated 2008 NEM 65 dB DNL contour.
- **Land Use Measure 3 – Fair Disclosure Policy.** This measure includes incorporation of aircraft noise information in sales documents for existing (if ownership changes) and new residential development, including a signed acknowledgement from the buyer, for properties within the Mitigated 2008 NEM 65 dB DNL contour.
- **Land Use Measure 4 – Purchase Undeveloped Land.** This measure includes purchase of selected parcels of undeveloped land within the Mitigated 2008 NEM 70 dB DNL contour to be maintained as vacant, sold for development into compatible uses, or developed for a compatible public use.
- **Land Use Measure 5 – Purchase Development Rights.** Development rights for parcels within the Mitigated 2008 NEM 65 dB DNL contour could be acquired and disposed of by BDL, thus precluding additional non-compatible development.
- **Land Use Measure 6 – Avigation Easements.** This measure includes a requirement for the granting of avigation easements (an easement granting limited permission for aircraft to fly above or near a property) and non-suit covenants to the airport owner as a

condition of building permits for specified non-compatible land uses within the Mitigated 2008 NEM 65 dB DNL contour.

- ***Land Use Measure 7 – Airport Noise Overlay Zone.*** An Airport Noise Overlay Zone would be established for areas within the Mitigated 2008 NEM 65 dB DNL contour, with provisions for aviation easements, fair disclosure, and noise level reduction construction techniques.
- ***Land Use Measure 8 – Property Purchase Assurance.*** This measure consists of a guarantee that an owner-occupied property within the Mitigated 2008 NEM 65 dB DNL contour would be acquired by CTDOT at a fair market value and would then be returned to residential use with appropriate sound insulation measures, releases, and restrictions.
- ***Land Use Measure 9 – Purchase Non-Compatible Land.*** Selected parcels of developed non-compatible land within the Mitigated 2008 NEM 70 dB DNL contour would be acquired and converted to compatible use.
- ***Land Use Measure 10 – Sound Insulation Program.*** This measure includes provision of sound insulation to residential properties within the Mitigated 2008 NEM 65 dB DNL contour. Those properties participating in the Sound Insulation Program provide an aviation easement and a waiver of claim in exchange for the sound insulation to the property. BDL has completed a nine-home pilot program and is currently performing the first 100 retrofits under this program.
- ***Noise Abatement Measure 1 – Preferential Departure Flight Tracks.*** Alternative flight tracks were proposed as part of the Part 150 Study to reduce noise exposure in non-compatible areas. This measure was accepted and has been implemented.
- ***Noise Abatement Measure 2 – Distant NADP.*** Noise Abatement Departure Profiles (NADPs) are flight procedures that are intended to reduce noise in targeted areas. These measures tend to transfer the noise to other areas. Close-in NADPs provide a slight reduction in noise with approximately four miles of an airport while a distant NADP would provide a reduction in noise beyond 4 miles from the airport. NADPs are generally beneficial when used by older aircraft; noise generated by newer aircraft manufactured to Stage 3 noise standards have improved climb performance, with no difference between close-in and distant NADPs. Distant NADPs have been used at BDL since before the Part 150 study was implemented. The Part 150 study recommends continuing the use of Distant NADPs; air carriers prefer them since they are safer due to include higher air speeds. However, this noise abatement measure is declining in significance as older aircraft are phased out.
- ***Continuing Program Measure 1 – Public Information Program.*** This measure includes establishment of a program to enhance public awareness of aircraft noise issues and the NCP.

- ***Continuing Program Measure 2 – BDL Airport Noise Committee.*** This measure includes establishing a standing committee to encourage dialogue between community representatives and BDL.
- ***Continuing Program Measure 3 – Operations and Noise Monitoring.*** An operations and noise monitoring system has been acquired to track and analyze ongoing aircraft flight operations at BDL, and aircraft induced noise exposure to nearby communities.
- ***Continuing Program Measure 4 – Periodic Noise Evaluation.*** This measure includes updating the NEMs when needed to account for significant changes in airport operations or procedures at BDL. Operations at BDL are consistent with the current NEMs.
- ***Continuing Program Measure 5 – Noise Abatement Officer.*** An additional staff position at BDL has been created to facilitate communication with neighboring communities, and facilitate the implementation of the NCP measures. The position is currently vacant.

CTDOT is proceeding with the measures approved in the Part 150 Noise Compatibility Program and will continue to implement such measures. The Part 150 Noise Study contains an additional NEM created using the INM with the NCP elements implemented as described above. The majority of the NCP measures, including the Land Use Measures and Continuing Program Measures serve to reduce impacts by keeping incompatible activities out of the airport’s noise exposure area. However, the Noise Abatement Measures do result in changes to the noise exposure contours. The resulting NEM is referred to as the “2008 Mitigated NEM” and is presented in *Figure 5-7*. This NEM represents approximately 101,988 annual passenger operations (PB Aviation, 2005). 2009 BDL annual passenger operations were 82,021 and are not anticipated to exceed 100,000 until after 2013 (InterVISTAS, 2010). Therefore, the 2008 Mitigated NEM is a conservative estimate of noise exposure under existing conditions. CTDOT is in the process of updating the NEM based on the significant changes in forecast operations used to development the current NEM and actual operations at the airport.

The 2008 Mitigated NEM 65 dB DNL contour contains 211 acres of residential land area, which is less than the 226 acres within the unmitigated 65 dB DNL contour, although it does contain a slightly larger number of dwelling units and population (378 units and 860 persons in the mitigated condition, respectively, compared to 369 units and 853, respectively). It should be noted that the focus of many measures of the NCP is to reduce future development in the affected areas and provide sound insulation for existing structures, which is not reflected in the values of acreage, dwelling units, and population.

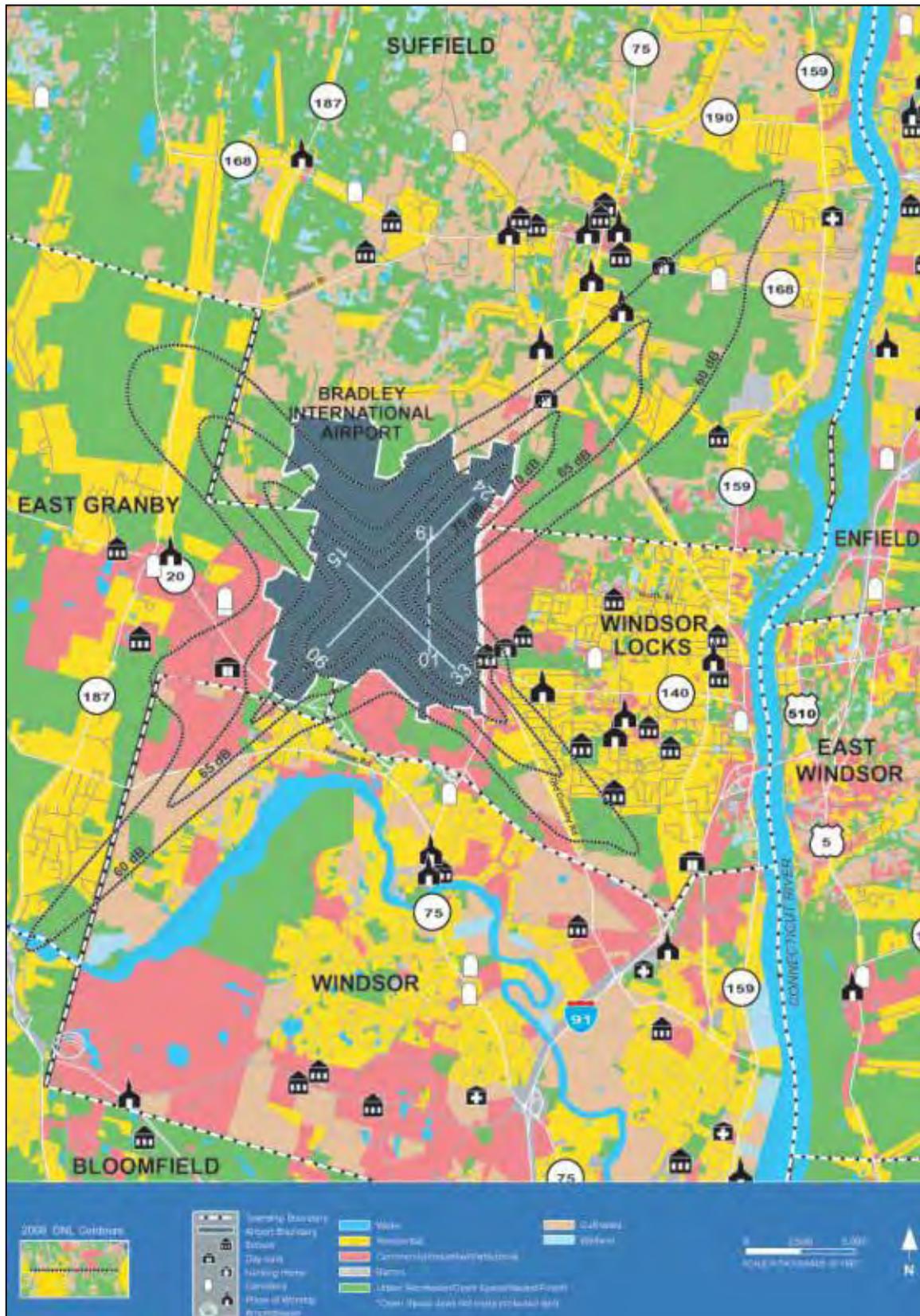


Figure 5-7. Mitigated Year 2008 60, 65, 70, and 75 dB DNL Contours with Existing Land Use

Projections of future population and number of dwelling units in 2008 were also made in the Part 150 Study to estimate non-compatible land use under both mitigated and unmitigated 2008 future land use conditions. However, actual population growth in the towns surrounding the airport has been significantly slower than the projections in the Part 150 Study, averaging less than 1% over the period 1990-2010 (see *Section 5.7*), compared to the near doubling of population forecast in the Part 150 Noise Study. Consequently, the future land use conditions for 2008 presented in the Part 150 Noise Study are not used to establish existing conditions for this EA/EIE. Instead, land use and population in 2004 are assumed to have remained essentially constant.

5.6.2 Impact Analysis

The greatest potential for noise impact due to aviation operations is associated with aircraft operations. The results of the INM model output in the Part 150 Study (HNTB, 2004) are used to assess potential noise impacts associated with the No Action and Proposed Action alternatives, consistent with the guidance in FAA Order 1050.1E (FAA, 2006). Significant impacts are expected if a proposed action causes noise sensitive areas to experience an increase of 1.5 dB or more in the DNL at or above the DNL 65 dB noise exposure when compared with the No Action alternative for the same timeframe. Alternatively, the area equivalent method (AEM) can be used if a proposed action would change the area but not the shape of the 65dB DNL contour. To determine impact, the AEM analysis compares the future condition under a no action alternative to the future condition under a proposed action. If there is an increase of less than 17% in the area within the 65 dB DNL contour, then no significant impacts are anticipated to result from the proposed action. Otherwise, INM analysis is required to determine impact (FAA, 2006).

As discussed in *Section 2*, the need for the Proposed Action is to meet future demand for passenger and aircraft handling facilities based on unconstrained forecasts of air passenger traffic. Unconstrained forecasts consider travel demand only and do not consider the capacity of the airport facilities. The current forecasts that are included in this document were prepared in 2010 (InterVISTAS, 2010) to update forecasts presented in the 2005 AMPU. The AMPU passenger aircraft operations and revised passenger aircraft operation forecasts are presented in *Table 5-12* and *Table 5-13*, respectively. As shown by a comparison of the 2012 and 2013 years and 2022 and 2023 years in the tables, the AMPU forecasts that are the basis for the NEMs in the Part 150 Study show substantially higher aircraft operations at BDL. The AMPU projection for 2012 is 22% higher than the updated projection for 2013, and the AMPU projection for 2022 is 16.5% higher than the updated projection for 2023. As such, the resulting noise contours that were developed in the Part 150 Study, shown in *Figure 5-8*, over-estimate the impacted area, and are thus conservative.

Under the No Action alternative, changes in noise-sensitive land area within the 65 dB DNL contours from the Mitigated 2008 NEM to the predicted 2012 and 2022 noise exposure contours are expected to occur (*Table 5-14*). No increase in number of impacted noise-sensitive facilities, such as schools, places of worship, hospitals is anticipated (HNTB, 2004).

Table 5-12. Forecast Annual and Average Daily Passenger Operations

Year	Annual Operations			Total Average Daily Operations
	Major Carrier	Commuter Carrier	Total	
2012	82,693	36,523	119,215	326
2022	102,677	42,035	144,712	396

Source: PB Aviation, 2005.

Table 5-13. Forecast Annual and Average Daily Passenger Aircraft Operations

Year	Annual Operations			Total Average Daily Operations
	Domestic Passenger	International Passenger	Total	
2008*	75,333	5,736	98,194	269
2009*	65,361	4,349	81,021	222
2013	76,800	5,900	97,600	267
2018	86,500	7,500	112,100	307
2023	95,000	8,600	124,200	340
2028	103,000	9,700	135,800	372

Source: InterVISTAS, 2010.

Table 5-14. 2008 With Mitigation Contour Compared to 2012 and 2022 DNL Contours

	Generalized Land Use	Acreage within DNL Contour Internal		
		65-69 dB	70-74 dB	Within 75 dB
2008 DNL Contour with NA-1 and NA-2 (with mitigation)	Residential	211	1	-
Future 2012 Contour	Residential	294	3.5	-
Future 2022 Contour	Residential	315	7.3	-

Source: 2004 HMMH and HNTB analysis (2004 14 CFR Part 150 Study), PB Aviation (2004).

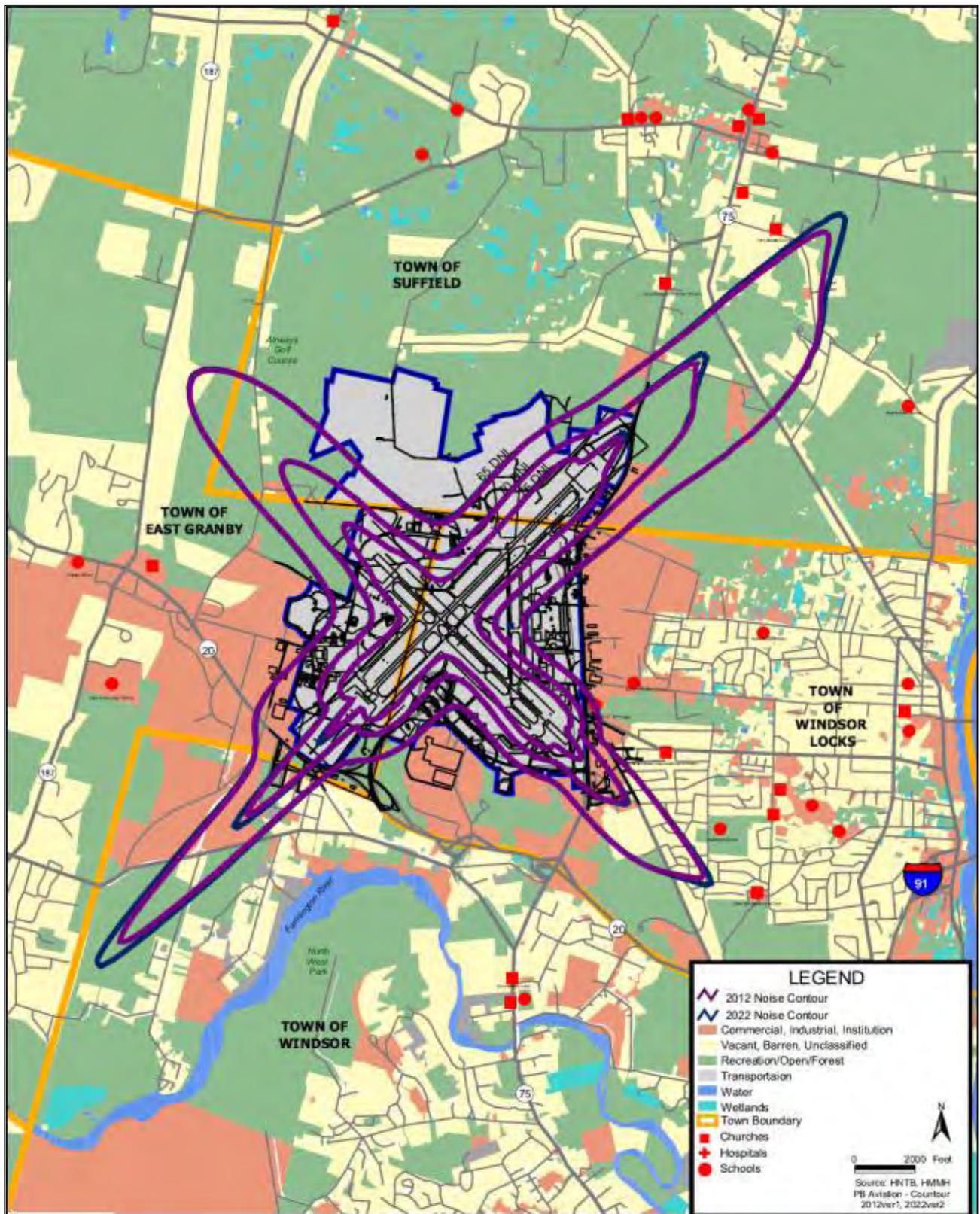


Figure 5-8. Predicted 2012 and 2022 65, 70, and 75 dB DNL Contours (2005 AMPU)

The analysis presented in the AMPU indicates that the area of impacted developed residential land would increase by 40% between 2008 and 2012 and by another 7% by 2022. These predicted impacts are conservative, however, considering that they were based on aircraft operations that are substantially higher than the number of operations that are currently anticipated based on updated forecasts.

Increases in aircraft operations are expected to occur regardless of the Proposed Action, meaning that relative to the No Action alternative, the activities associated with the Proposed Action would not result in an increase in off-airport noise exposure.

In addition, other than temporary construction-related increases in noise, no substantial changes in noise resulting from on-airport traffic or building mechanical systems are anticipated. In fact, the potential decreased operational efficiencies and increased delays that may occur as part of the No Action alternative could potentially increase off-airport noise exposure; if the number of average daily flights are the same but more flights are scheduled or delayed for nighttime hours as a result of inadequate terminal capacity, they would occur at a time of day when residential areas are more sensitive to noise, which could increase the number of residences contained within the 65 dB DNL contour.

5.6.3 Mitigation

No adverse noise-related impacts are anticipated to occur under the Proposed Action, and although the NCP implementation will continue, no project-specific mitigation is proposed.

5.7 Socioeconomic Effects, Environmental Justice, and Children's Health and Safety

5.7.1 Existing Conditions

Socioeconomics

Bradley International Airport is located within four Connecticut communities – Windsor Locks, Suffield, East Granby, and Windsor. The Proposed Action would occur entirely in Windsor Locks, located in Hartford County, Connecticut. This section provides an overview of the socioeconomic conditions, including demographics, employment, and income, in these communities (referred to in this section as the “study area”) based on information available from the U.S. Census Bureau, the Connecticut Economic Resource Center, and EPA.

According to 2010 data from the Connecticut Economic Resource Center (CERC, 2011), the study area's population is approximately 61,207, with 34% of the population between the ages of 25 and 49. While the population in the study area increased by approximately 0.6% per year from 1990 to 2010, projections for 2010 to 2015 provided by the CERC indicate that the population increases in the study area and Hartford County are expected to slow to approximately 0.3% per year and 0.2% per year, respectively.

As expected for a suburban area, the study area has an average population density of 750 persons per square mile, slightly more than the state-wide population density of 701 persons per square mile (*Table 5-15*). The area immediately around the airport has a very low population density due to the commercial/industrial character of the area. Population density within the residential portions of the study area is similar to the population density of Hartford County and is in the range of 1,000-7,500 persons per square mile (EPA, 2000) (*Figure 5-9*).

Table 5-15. Study Area Population (2010)

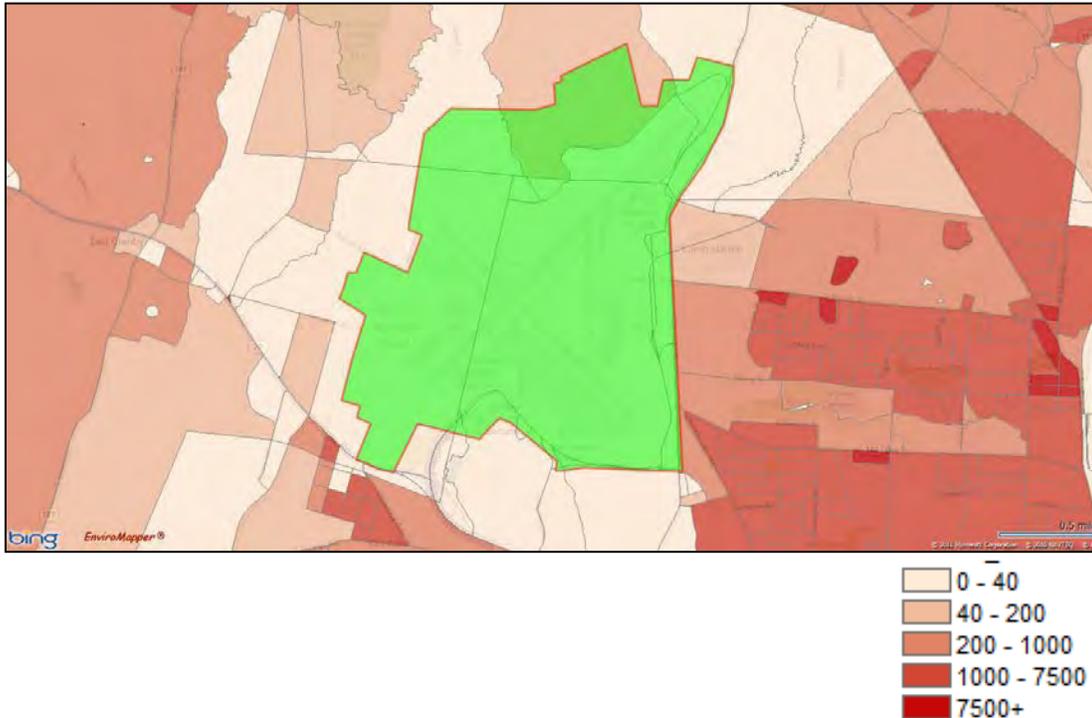
Municipality	Population	Population Density (pop./sq.mile)	Population Change 1990-2010	Projected Change 2010-2015
East Granby	5,277	302	975 (1.1%/yr)	101 (0.4%/yr)
Suffield	14,387	341	2,960 (1.3%/yr)	-39 (-0.1%/yr)
Windsor	29,119	983	1,302 (0.2%/yr)	214 (0.1%/yr)
Windsor Locks	12,424	1,376	66 (0.03%/yr)	514 (0.8%/yr)
Hartford County	880,467	1,197	28,684 (0.2%/yr)	10,097 (0.2%/yr)
State of Connecticut	3,511,137	701	224,021 (0.4%/yr)	34,032 (0.2%/yr)

Source: Connecticut Economic Resource Center, 2011

Table 5-16. Study Area Population Age (2010)

Municipality	Median Age	Pop. Ages 25 – 49
East Granby	42	35%
Suffield	41	35%
Windsor	42	33%
Windsor Locks	41	34%
Hartford County	40	33%
State of Connecticut	40	33%

Source: Connecticut Economic Resource Center, 2011



Source: U.S. Census Bureau PL-171 File for 2000. Figure generated at <http://epamap14.epa.gov/ejmap/entry.html> on September 8, 2011.

Figure 5-9. Population Density (Persons per Square Mile)

A total of 24,443 housing units were reported in the study area in 2009, with approximately 82% of those being single units and approximately 72% owner occupied (CERC, 2011) (Table 5-17). These statistics, which are higher than the percentages for Hartford County and the State as a whole, reflect the single-family, non-rental housing typical of a suburban area.

Table 5-17. Study Area Housing Statistics (2009)

Municipality	Housing Units	Single Units	Owner Occupied
East Granby	2,119	82.6%	78%
Suffield	5,372	85.5%	75%
Windsor	11,550	83.3%	68%
Windsor Locks	5,402	78.2%	67%
Hartford County	368,391	61.3%	55%
State of Connecticut	1,452,007	64.8%	57%

Source: Connecticut Economic Resource Center, 2011

Bradley International Airport has a significant impact on the local, regional, and state-wide economies, not only as an economic generator but also as an economic facilitator, stimulating economic growth for regional businesses. Based on the 2005 economic impact analysis by the Connecticut Department of Economic and Community Development, approximately 9,100 jobs are directly related to BDL through employment with airlines, vendors, contractors, suppliers and cargo handlers. Another approximately 13,000 jobs result from indirect economic impacts created by the airport including off-airport economic activity. Personal earnings tied to these jobs are estimated at \$618.4 million (CTDECD, 2005). The economic impact analysis also stated that over the next twenty years BDL will contribute, on average, more than \$34 billion in output, nearly \$11 billion in income for Connecticut's residents and sustain nearly 140,000 jobs. In 2006, the last year for which data is available, BDL was one of the top five employers in Windsor Locks (CERC, 2011). The wages directly or indirectly earned by local residents as a result of the airport are in turn circulated back into the local economy by the purchase of goods and services including food, clothing, housing, and transportation.

Although BDL is not typically a destination airport, visitors also have an indirect and positive impact on the local economy through spending on lodging, food, parking, and retail items.

Environmental Justice

In accordance with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Population and Low Income Populations*, and subsequent procedures developed by the U.S. Department of Transportation (US DOT), activities that have potential to generate an effect on human health or the environment must include explicit consideration of their effects on minority and low-income populations (i.e., "Environmental Justice" effects or impacts). These regulations aim to prevent minority and low-income populations from exposure to disproportionately high adverse human health or environmental effects as a result of US DOT programs, policies, and activities.

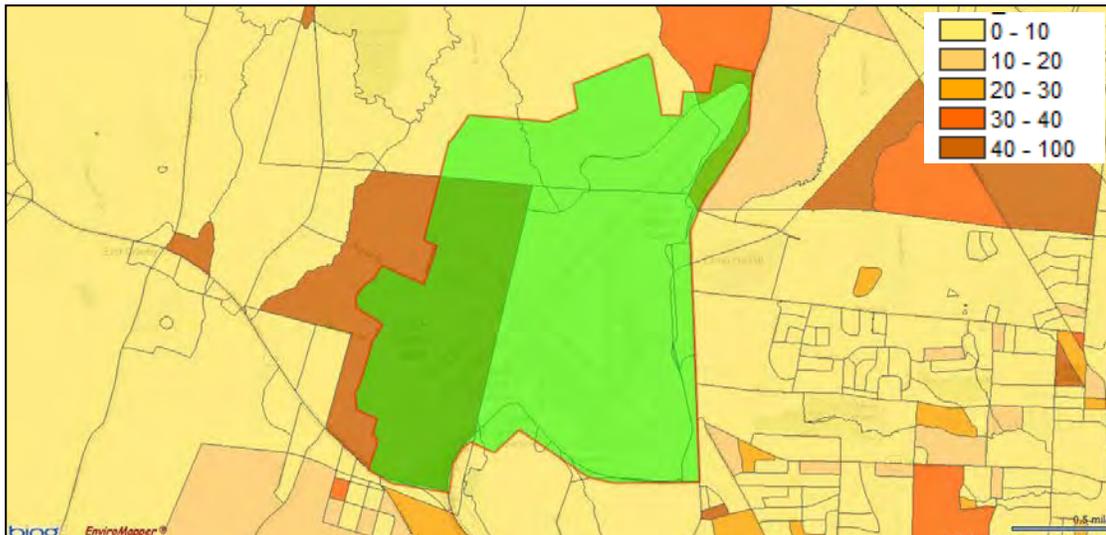
Table 5-18 presents selected demographic and sociodemographics for the study area, including Hartford County and the State of Connecticut. The project area is located entirely within airport property, an established non-residential area. As shown in *Table 5-18*, minority populations in the study area communities are relatively low. According to the 2010 U.S. Census, the study area's racial and ethnic composition is, on average, 79.7% white, 9.9% Black or African American, 2.9% Asian, 0.1% Native American, 3.2% other, and 4.2% Hispanic or Latino of any race. The study area population has a higher percentage of white residents compared to the U.S. population average of 72.4% and has lower Black or African American and Asian populations compared to the U.S. averages of 12.6% and 4.8%, respectively. There is also a lower population of residents of Hispanic or Latino ethnicity in the study area, as compared to 16.3% nationally. In the area surrounding BDL, there are Census block groups to the north, east, and west with 30% or greater of the residents belonging to a minority group (U.S. Census Bureau, 2010) (*Figure 5-10*).

Table 5-18. Study Area Population Race/Ethnicity (2010)

Municipality	White	Black	Asian Pacific	Native American	Other/ Multi-Race	Hispanic (any race)
East Granby	4,898 (91%)	140 (3%)	96 (2%)	7 (<1%)	136 (3%)	130 (2%)
Suffield	12,491 (82%)	1,113 (7%)	243 (2%)	26 (<1%)	514 (3%)	769 (5%)
Windsor	18,324 (59%)	8,080 (26%)	1,334 (4%)	36 (<1%)	1345 (4%)	1857 (6%)
Windsor Locks	11,116 (87%)	471 (4%)	479 (4%)	14 (<1%)	344 (3%)	405 (3%)
Hartford County	662,355 (66%)	109,346 (11%)	32,224 (3%)	1,595 (<1%)	74,947 (8%)	118,777 (12%)
State of Connecticut	2,786,761 (71%)	337,299 (9%)	128,651 (3%)	6,418 (<1%)	252,008 (6%)	411,629 (11%)

Source: Connecticut Economic Resource Center, 2011
 * Percentages may not total to 100% due to rounding.

According to the U.S. Census data for 2009, the average percentage of families and individuals below the poverty level in the four communities surrounding BDL is 3.3%, less than the U.S. average of 14.3% (Table 5-19), and Census data shows that less than 10% of the population in the immediate area of the airport is below the poverty level (USEPA, 2010). Of the four surrounding communities, only Windsor Locks had a lower median household income than the state-wide average.



Source: U.S. Census Bureau PL-171 File, 2000. Figure generated at <http://epamap14.epa.gov/ejmap/entry.html> on September 8, 2011.

Figure 5-10. Percent Minority Population

Table 5-19. Study Area Labor Force

Municipality	Median Household Income (2010)	Labor Force (2009)	Poverty Rate (2009)	Unemployment Rate (2009)
East Granby	\$82,245	3,036	0.9%	6.5%
Suffield	\$81,367	7,552	2.5%	6.7%
Windsor	\$75,116	16,595	3.4%	7.9%
Windsor Locks	\$57,769	7,247	6.4%	8.8%
Hartford County	\$60,177	465,383	10.1%	8.7%
State of Connecticut	\$65,686	1,889,947	8.7%	8.2%

Source: Connecticut Economic Resource Center, 2011

Children’s Health and Safety

Pursuant to Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, Federal agencies are directed to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children.

Locations where children are consistently likely to be located in the vicinity of the airport include the Poquonock Elementary School, which is located approximately 1.7 miles to the south of the airport, and two preschools that are within approximately 1 mile of the airport.

5.7.2 Impact Analysis

Socioeconomics

No changes in demographics would result from either the No Action or Proposed Action alternatives. No displacement of residences or taking of residential land would occur under either alternative, so no impact to demographics is anticipated.

The No Action alternative would provide demolition-related employment during the demolition of the existing Terminal B and would not have a negative affect on the area’s employment or economy. Similarly, the Proposed Action would provide construction-related employment during the project construction and would not have a negative effect on the area’s employment or economy. The terminal expansion is anticipated to provide additional employment opportunities within the proposed expanded retail and food and beverage services, and in general would contribute to BDL’s strategic planning efforts to operate a safe, secure, and efficient facility while supporting economic growth in Connecticut (BDL, 2010).

Environmental Justice

No impacts to either minority or low income populations are anticipated to result from either the No Action or Proposed Action alternatives. The proposed construction activity is located on existing airport property and any construction-related impacts, such as traffic delays, in the immediate vicinity of the airport would be temporary in nature. Since the Proposed Action is in response to, not the cause of, expected increases in aircraft operations, the Proposed Action would not result in any direct or indirect disproportionately high and adverse human health and environmental effects on minority or low-income populations.

Children's Health and Safety

No impacts to children's health and safety are anticipated to result from either the No Action or Proposed Action alternatives. Demolition and construction activity would occur on existing airport property, and the proposed activities are not located near areas where children are likely to be present on a consistent basis. Consequently, no direct or indirect disproportionately high and adverse environmental health or safety impacts on children are anticipated as a result of the Proposed Action or No Action alternatives.

5.7.3 Mitigation

Since the Proposed Action would not result in direct or indirect adverse impacts to socioeconomic conditions, Environmental Justice populations, or children's health and safety, no mitigation is necessary or proposed.

5.8 Hydrology and Floodplains

5.8.1 Existing Conditions

Bradley International Airport is located in the Connecticut River basin, within CTDEEP subregional basin #4000 - Connecticut River; #4100 - Stony Brook, and #4300 - Farmington River. The northern portion of the airport drains north into Stony Brook via several named and unnamed tributaries. Kettle Brook to the east receives a small portion of drainage from the eastern portion of the airport property. The southern portion of the airport drains into the Farmington River via Rainbow Brook and Seymour Hollow Brook. Kettle Brook, Stony Brook, and the Farmington River all drain into the Connecticut River, which is located approximately 2.3 miles east of the airport. *Figure 4-11* depicts the airport and the surrounding hydrology.

The western side of the terminal complex drains into Rainbow Brook and Seymour Hollow Brook via an existing stormwater drainage system described in *Section 5.18*. This system generally does not include measures to reduce peak flows or runoff volumes, but is consistent with accepted drainage design practices at the time of the airport's development. The volume, timing, and peak flow rate of stormwater discharges to these brooks are likely to reflect the heavily developed nature of the contributing drainage areas.

No mapped floodplains are located near the airport terminal complex. The nearest floodplain within the watershed that receives drainage from the terminal complex area is the Farmington River floodplain, which is located approximately one mile south of the airport. This floodplain area includes a 100-year flood zone and a floodway. Floodplain areas associated with DeGraves Brook, Stony Brook, and Spencer Brook are north and west of the airport, but are located more than one mile away and receive no drainage from the project area. No State-jurisdictional stream channel encroachment lines (SCEs) are located in the vicinity of the airport.

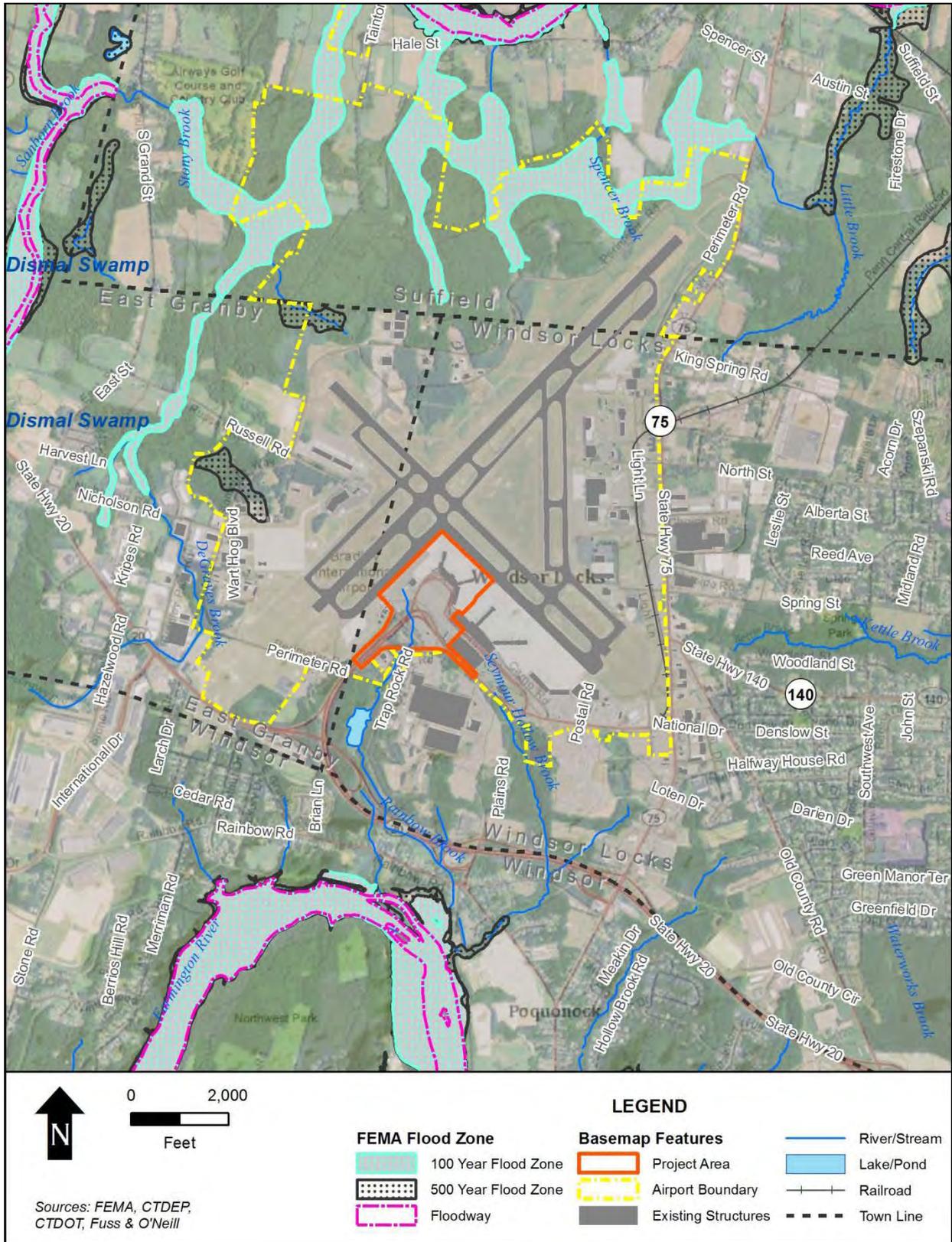


Figure 5-11. Hydrology and Floodplains

5.8.2 Impact Analysis

Neither the Proposed Action nor No Action alternative includes any work in floodplain areas. As discussed in *Section 5.18*, impervious cover is not expected to increase under the Proposed Action or No Action alternatives; changes in the volume and timing of peak stormwater discharges are not expected to result from either alternative. Therefore, no direct or indirect impacts to hydrology or floodplains are anticipated.

Additionally, the Proposed Action may result in a benefit to hydrologic conditions in Rainbow Brook and Seymour Hollow Brook as a result of stormwater management measures that would be incorporated into the design of the new terminal complex. The stormwater management design to be prepared during the design development phase of the project would be consistent with the requirements of the *CTDOT 2000 Drainage Manual*, the *CTDEEP 2004 Connecticut Stormwater Quality Manual*, as amended, and the *Connecticut's High Performance (Green) Building Standards for State Agency Buildings and School Buildings*, an improvement over the existing stormwater drainage system in the project area, which includes no significant peak flow or runoff volume controls.

5.8.3 Mitigation

The Proposed Action is not anticipated to result in direct or indirect adverse impacts to hydrology or floodplains, and no mitigation is required.

5.9 Water Quality

5.9.1 Existing Conditions

Surface Water

As described in *Section 5.8*, the southern portion of the airport drains into the Farmington River via Rainbow Brook and Seymour Hollow Brook, which then flows into the Connecticut River, located approximately 2.3 miles east of the airport. *Figure 5-12* shows surface water and groundwater quality classifications in the project area.

The western side of the terminal complex drains into Rainbow Brook and Seymour Hollow Brook via an existing stormwater drainage system described in *Section 5.18*. This system generally does not include measures to treat stormwater, typical of accepted drainage design practices at the time of the airport's development. The quality and quantity of stormwater discharges to these brooks are likely to reflect the heavily developed, impervious nature of the contributing drainage areas.

Inland and coastal waters in Connecticut are assigned a Water Quality Classification based on Connecticut's Water Quality Standards (CTDEEP, 2011). These classifications, which were revised and updated in 2011, define designated uses that a waterbody can support. Both Rainbow Brook and Seymour Hollow Brook are designated Class A waters. The Water Quality Standards designate Class A waters for habitat for fish, other aquatic life and wildlife, potential

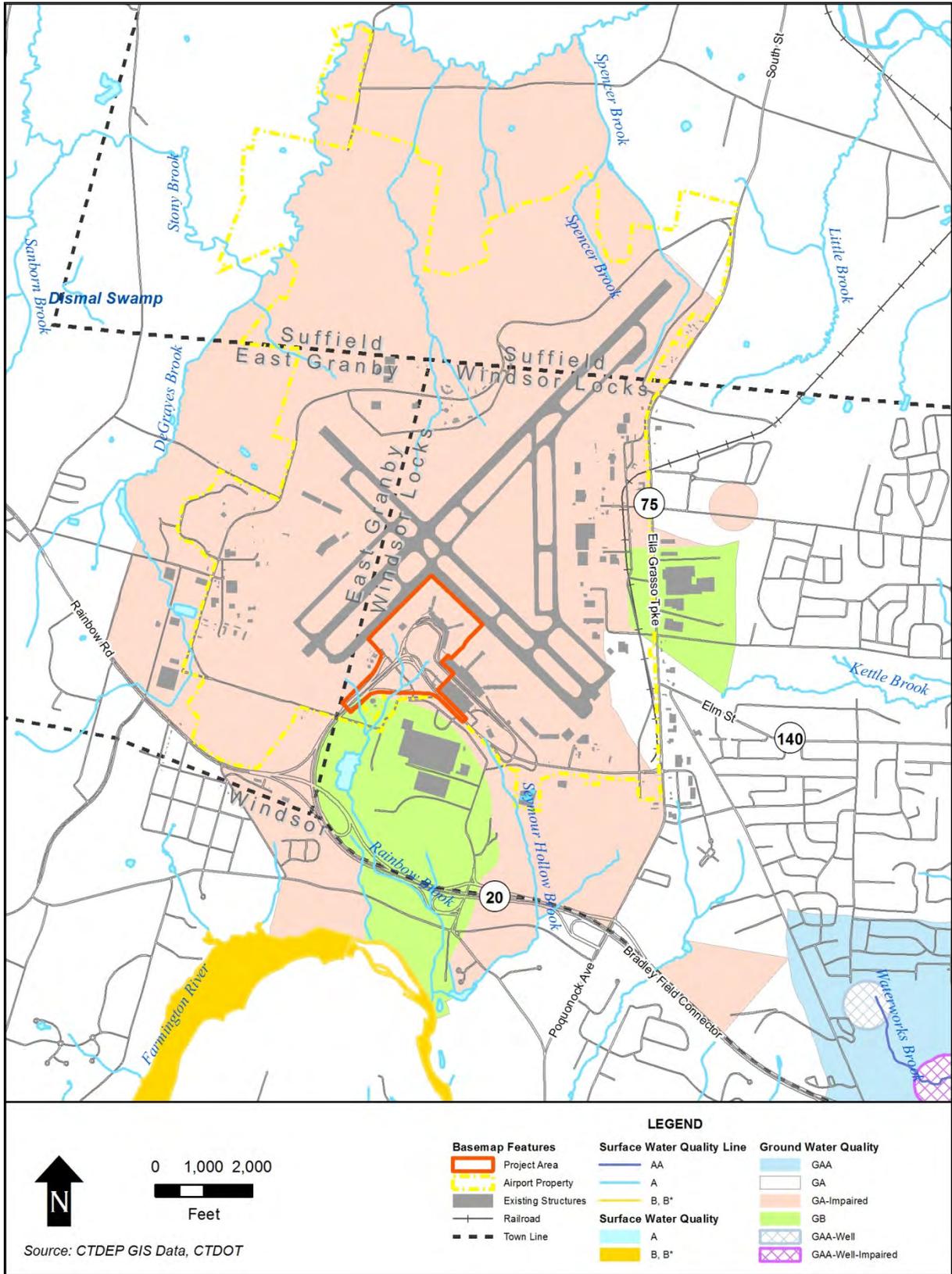


Figure 5-12. Water Quality Classifications

drinking water supplies, recreation, navigation, and water supply for industry and agriculture. Both of these brooks are listed as impaired for habitat for fish, other aquatic life, and wildlife in the 2010 State of Connecticut Integrated Water Quality Report (CTDEEP, 2011), with the causes identified as Ethylene Glycol and Propylene Glycol and the airport listed as the source. This impairment is Category 4a, which means that a Total Maximum Daily Load (TMDL) has been established.

A TMDL is either a maximum quantity of a pollutant that a water body can receive while still meeting water quality standards or an allocation of the pollutant that is acceptable. A combined TMDL for Rainbow and Seymour Hollow Brooks was accepted by EPA in 1999 (CTDEEP, 1999). The TMDL goal is zero discharge of glycol compounds since glycol is not naturally present in the environment.

The TMDL is the result of complaints received by CTDEEP during 1987 and 1988 reporting unusual color and odor from Rainbow Brook and Seymour Hollow Brook. CTDEEP collected samples and found elevated levels of glycol and the brooks' waters to be moderately toxic to aquatic life. Glycol compounds are used by BDL and other cold-climate airports to deice aircraft prior to departure since ice accumulation disrupts smooth airflow over control surfaces. Deicing agent is applied by the airlines, but spent material that is present in runoff becomes the responsibility of the airport. BDL began undertaking a series of steps to reduce glycol discharges, achieving a 50% reduction in glycol discharges during the 1995/1996 winter season. In 1997, increased enforcement by U.S. EPA resulted in a formal consent order between CTDOT and CTDEEP to further address deicing activities, and BDL began requiring tenants to phase out the use of ethylene glycol in favor of propylene glycol-based deicer, which is less toxic.

The consent order and TMDL outlined a number of improvements to eliminate the impairments in the brooks. These included construction of a remote deicing facility and improvements to "at-gate" deicing through construction of the expanded Terminal A, associated airside apron improvements that separate stormwater and glycol drainage systems, and elimination of nonconforming drainage systems.

To date, the only uncompleted measure is the elimination of a combined glycol/stormwater drainage system associated with the existing Terminal B, although no airlines or aircraft currently use this facility. The other measures have been completed, including a separate glycol drainage system associated with Terminal A that conveys glycol-contaminated runoff to a recovery facility for treatment (this system is discussed in additional detail in *Section 5.18*). As a result, glycol discharges to Rainbow Brook and Seymour Hollow Brook have been effectively eliminated. Although the brooks are still listed as impaired, the goals of the TMDL have been met.

In general, stormwater discharges from the airport are regulated by the consent order. CTDOT has applied for coverage for stormwater discharges under an individual National Pollutant Discharge Elimination System (NPDES) discharge permit from CTDEEP. Meanwhile, the consent order requires BDL to maintain and follow a Stormwater Pollution Prevention Plan (SWPPP) that is reviewed and approved by CTDEEP to document measures and controls to prevent stormwater pollution. The SWPPP is maintained and implemented by BDL, and BDL

requires airport tenants (except two United States military facilities) to implement applicable sections of the SWPPP for airport facilities that are under their control. The military facilities are responsible for permitting their own stormwater discharges.

The reach of the Farmington River where Rainbow Brook and Seymour Hollow Brook join the Farmington River is designated as a Class B water. Class B waters are designated for habitat for fish and other aquatic life and wildlife, recreation, navigation, and industrial and agricultural water supply. This reach is also listed as impaired for habitat for fish, other aquatic life, and wildlife, with the cause listed as flow modification and the source listed as an upstream impoundment. This impairment is listed as a Category 4c, which is a non-pollutant impairment and is not associated with airport activities.

The Wild and Scenic Rivers Act of 1968 was legislated to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. In Connecticut, the Eightmile River and the West Branch of the Farmington River from Colebrook to Canton are designated rivers. The Lower Farmington River from Canton to Windsor is a study river, which is in the process of attaining Wild and Scenic River designation. Rainbow Brook is a tributary to the Lower Farmington River segment which is a River Wild and Scenic River study river. Rainbow Brook flows approximately 1.3 miles from the boundary of the project area to the confluence with the Lower Farmington River.

Groundwater

Similar to surface waters, groundwater in Connecticut is also classified following the Connecticut Water Quality Classifications (CTDEP, 2011). Groundwater below the majority of the terminal complex area is classified as Class “GA - Impaired” (*Figure 5-12*). This designation indicates that, although the groundwater should be appropriate for existing or potential private or public water supply that is suitable for drinking without treatment, or to provide baseflow to hydraulically connected streams, it may be impacted or contaminated, impairing one or more of the uses. The water quality standards severely limit the types of discharges that may be permitted to Class GA groundwater.

Groundwater immediately south of the terminal complex is designated Class GB, which are presumed to be unsuitable for human consumption. These waters are generally present in historically highly urbanized areas where public water supply service is available. Discharge requirements to Class GB groundwater are less restrictive than to Class GA groundwater.

5.9.2 Impact Analysis

Surface Water

Under either the No Action or Proposed Action alternative, the existing Terminal B complex would be demolished, eliminating the potential for aircraft to use the remaining gates and associated glycol discharges to Rainbow Brook.

Following the Proposed Action, the new Terminal B would include separated glycol and stormwater runoff collection systems as described in *Section 5.18*, ensuring no discharge of glycol consistent with the TMDL.

Additionally, the Proposed Action is anticipated to result in improvements in the quality of stormwater discharges from the project area since the stormwater management design for the new terminal complex would be consistent with the requirements of the CTDEEP 2004 *Connecticut Stormwater Quality Manual*, as amended, the CTDOT 2000 *Drainage Manual*, as amended, and *Connecticut's High Performance (Green) Building Standards for State Agency Buildings and School Buildings*. The airport SWPPP would be revised to reflect the new terminal complex and associated changes to the airport stormwater drainage system. The airport would also adhere to the conditions and requirements of its individual NPDES discharge permit (see *Section 5.18.1*).

Consequently, no direct or indirect impacts to surface water quality are anticipated from either the No Action or Proposed Action alternatives.

Groundwater

Under either the No Action or Proposed Action alternative, the existing Terminal B would be demolished, eliminating potential remaining pollutant sources (e.g., old oil-filled operational equipment, such as transformers) associated with the existing Terminal B complex.

As part of the Proposed Action, buried jet fuel distribution and glycol collection pipes would be constructed. The glycol piping system would be constructed of ductile iron pipe (DIP) rather than traditional drainage pipe materials to reduce the potential for future cracking or corrosion of the pipe barrels or failure of the piping joints, greatly reducing the potential for leakage and subsequent groundwater contamination. Buried jet fuel piping will include a number of elements to prevent a leak from occurring. Although the system has not yet been designed, potential leak prevention elements include:

- A SCADA-based emergency fuel shutoff system that could deactivate pumps, close valves, or both.
- Cathodic protection to prevent corrosion, such as a sacrificial galvanic anode or impressed current system.
- A leak detection system.

The airside apron surrounding the proposed Terminal B would be concrete rather than asphalt, similar to the existing airside aprons for Terminal A. Asphalt is subject to damage from incidental discharge of oil that may occur during fuel transfer or other operations and may eventually allow oil to penetrate into the subsoil. Concrete is less susceptible to this damage, thereby providing better protection of soil and groundwater from airside operations.

No wastewater discharges to groundwater are currently anticipated under the Proposed Action.

Neither the No Action nor the Proposed Action alternative is anticipated to result in direct or indirect impacts to groundwater.

5.9.3 Mitigation

The measures required by existing permitting and regulatory programs – eliminate glycol runoff, treat stormwater discharges, and prevent discharges of pollutant to groundwater – would

protect surface water and groundwater quality from adverse impacts under the No Action and Proposed Action alternatives. Consequently, no mitigation specific to water quality is proposed, beyond mitigation which will be incorporated into the design as required for permitting.

5.10 Wetlands

The project area was investigated for the presence of wetland resources as part of the 2000 EA/FONSI (FAA and CTDOT, 2000). At that time, two wetland areas were identified in the current project area, and inland wetlands and watercourse boundaries were estimated based on field observations (FAA and CTDOT, 2000).

In the preparation of this document, a Professional Wetland Scientist and Registered Soil Scientist with Fuss & O'Neill, Inc. initially reviewed the previously estimated wetland boundaries and determined that the boundaries reported in the 2000 EA/FONSI (FAA and CTDOT, 2000) are generally valid. In addition, other areas within the project area were evaluated for the presence of wetlands or watercourses.

Fitzgerald & Halliday, Inc. (FHI), under contract to the project design consultant, Urban Engineers, Inc., subsequently field-delineated wetland resources in the project area in accordance with state and federal definitions and guidelines (*Appendix E*). Wetlands within the project area were delineated as well as portions of those wetlands that extend beyond the project area, to encompass potential staging and access areas that might be needed during construction. The boundaries of 5 wetlands were flagged and surveyed. A sixth wetland, originally identified by Fuss & O'Neill (Wetland Area 6), was not field-delineated by FHI because it was not anticipated to be impacted by the Proposed Action.

The identification of inland wetlands and watercourses, as regulated by Connecticut, were based upon the definitions contained in Section 22a-38 of the General Statutes of Connecticut. Connecticut inland wetland boundaries are determined by the limit of any of the soil types designated as poorly drained, very poorly drained, alluvial, and flood plain by the National Cooperative Soils Survey, as may be amended from time to time, of the Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture (§22a-38-15). NRCS soil surveys were consulted to compare observed soil types to those generally expected in the study area. Hydric soils were identified for conformance with the *Field Indicators for Identifying Hydric Soils in New England Version 3* (2004) and *Field Indicators of Hydric Soils in the United States, Version 7.0* (2010).

Federal wetlands were identified per the U.S. Army Corps of Engineers (ACOE) 1987 *Wetland Delineation Manual* and the ACOE 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region – Version 2.0*. The federal wetland boundary was determined by the presence of wetland vegetation (limit of plant community dominated, 50% or more cover, by species adapted to living in wetland conditions) by visual inspection, as well as indicators of hydric soils and wetland hydrology.

Wetlands, watercourses and water bodies may provide a variety of functions and values, such as wildlife habitat, fish habitat, educational potential, visual/aesthetic quality, water-based recreation, flood flow alteration and desynchronization, groundwater and surface water use

potential, nutrient retention, sediment trapping, shoreline stabilization and dissipation of erosive forces. Ecological functions and societal values vary with each wetland. Factors affecting wetland function include size, location in the watershed, number and interspersions of plant cover types, and the degree of disturbance.

A wetland function and value assessment was initially performed by Fuss & O'Neill based on the U.S. Army Corps of Engineers Highway Methodology Workbook Supplement (USACE, 1995). Because the FHI wetland delineations were conducted outside of the normal growing season, the wetland delineations were revisited in May of 2012 for verification. Also during the May 2012 revisit, detailed documentation, including wetland function and value assessments and transects, were performed.

5.10.1 Existing Conditions

Figure 5-13 shows the boundaries of wetlands and watercourses present within the project area. A total of six wetlands and watercourses ("wetland areas" or "WAs") are present and are identified as WA-1 through WA-6. Two of the wetland areas (WA-1 and WA-5) were identified in the 2000 EA/FONSI. These and four additional wetland areas (WA-2, WA-3, WA-4, and WA-6) in the vicinity of the project area were initially identified in 2011 by Fuss & O'Neill. FHI subsequently field-delineated these wetland areas in February 2012 in support of the project design and permitting. WA-6 was not field-delineated since this wetland area is located outside of the anticipated project impact area. Below is a discussion of each of the wetland areas within the project area.

Wetland Area 1

Wetland Area 1 (WA-1) is a $0.07 \pm$ acre wetland located at the northern corner of the Bradley Field Connector and Hamilton Road. This emergent wetland is situated within a basin between the two roads and a parking lot to the northwest. The northernmost mapped portion of Rainbow Brook, which is fed by multiple storm drain outlets, begins within this wetland. This wetland appears to be connected to Wetland Area 3 and Wetland Area 5 via culverts under the roads and ramps in the project area. WA-1 is a defined depression and has formed as a result of a combination of natural groundwater discharge, stormwater flow, and human disturbance. WA-1 is fed from the north by stormwater conveyed through a bituminous swale and from the west by groundwater seepage. Surface water is discharged to the bituminous swale from surface water runoff originating from impervious surfaces to the east, north and west. Water is detained in WA-1 before entering a 24-inch diameter reinforced concrete pipe (RCP) and flowing south. Connectivity between WA-1 and other wetlands or watercourses within or near the project area is limited to the culverted stormwater system. There are no intermittent or perennial watercourses associated with WA-1.

The NRCS mapped soil associated with this wetland is Urban Land. Because there is an area of detained runoff, the dominant vegetation in WA-1 consists of emergent hydrophytic vegetation. The dominant vegetation in WA-1 is common reed (*Phragmites australis*)*⁴, which forms a dense monoculture throughout most of the wetland. Other common vegetation in WA-1 includes Asiatic bittersweet (*Celastrus orbiculatus*)*, elderberry (*Sambucus canadensis*), silky dogwood (*Cornus*

⁴ Invasive or noxious species are denoted herein with an asterisk - *.

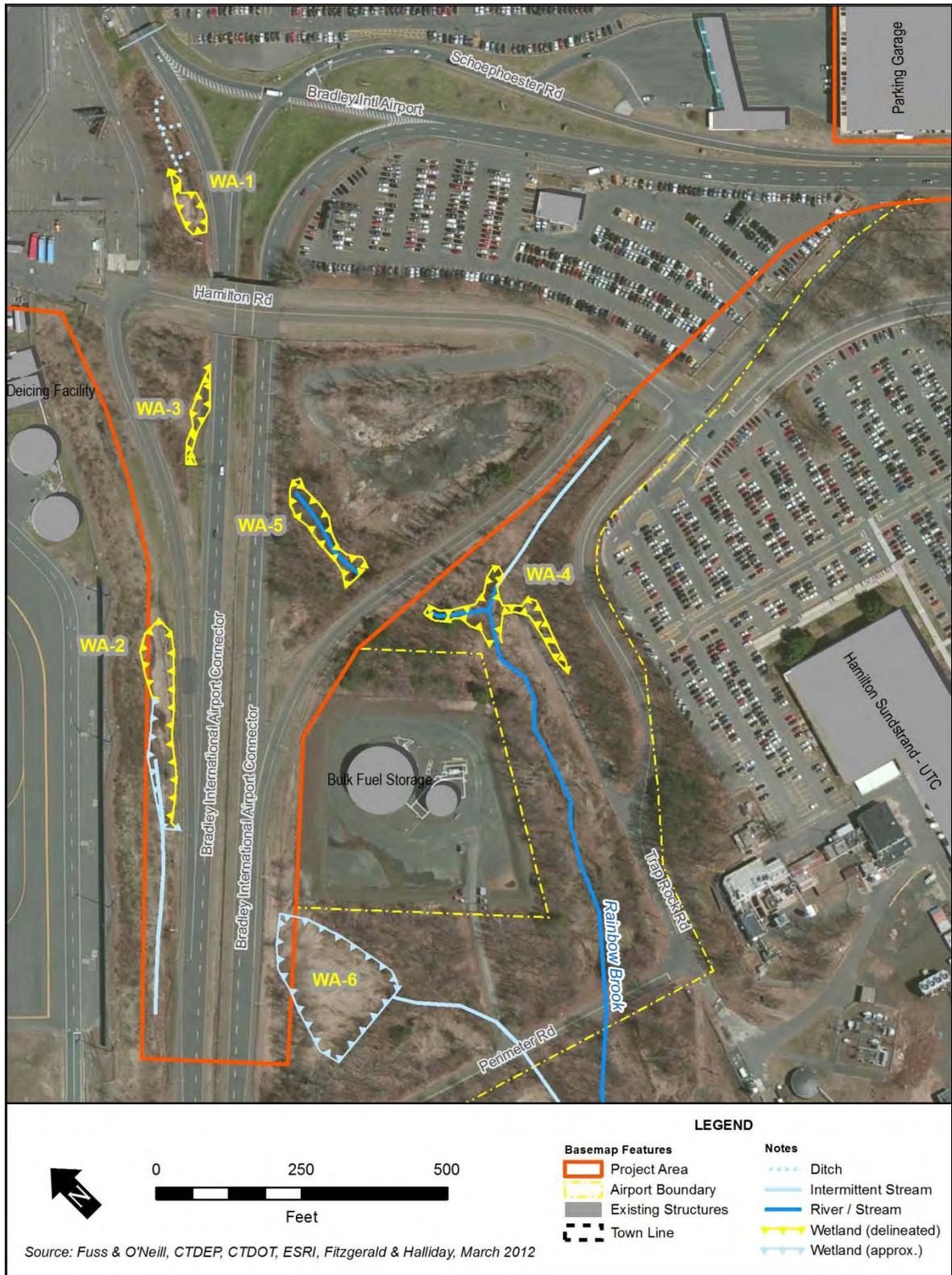


Figure 5-13. Wetland Areas

amomum) and grape (*Vitis* sp.) Vegetation surrounding this wetland includes white oak (*Quercus alba*), eastern cottonwood (*Populus deltoides*), and Asiatic bittersweet (*Celastrus orbiculatus*). The principal functions and values of this wetland are small-scale floodflow alteration for Rainbow Brook and sediment and toxicant retention from the nearby roadways (Table 5-20).

Wetland Area 2

Wetland Area 2 (WA-2) is a $0.33 \pm$ acre wetland and approximately 450 feet of intermittent stream located south and west of the Hamilton Road/Route 20 On-Ramp at the merge with Route 20. This emergent wetland is situated within a depression between the highway portion of the Bradley Field Connector and an airport access road (named Approach Road) at Runway End 9. Historical mapping shows that WA-2 is in the general location of an intermittent stream, which was a tributary to Rainbow Brook to the south. The hydrologic source for WA-2 currently appears to be groundwater seepage from the embankment and storm water runoff from the adjacent roadways. Water within WA-2 flows in a southwesterly direction, where it is collected by an 18-inch diameter RCP culvert, and is discharged across Route 20 to WA-6.

The NRCS mapped soil associated with this wetland is Udorthents-Urban Land Complex. Common reed* is the dominant vegetation in WA-2, which forms a dense monoculture throughout most of the wetland. Other common vegetation species include elderberry, grape, Asiatic bittersweet*, eastern cottonwood, staghorn sumac (*Rhus typhina*), cattail (*Typha latifolia*), jewelweed (*Impatiens capensis*), and poison ivy (*Toxicodendron radicans*). The principal functions and values of this wetland are small-scale floodflow alteration for the unnamed tributary to Rainbow Brook and sediment and toxicant retention from the nearby roadway (Table 5-20).

Wetland Area 3

Wetland Area 3 (WA-3) is a $0.06 \pm$ acre wetland located southwest of Hamilton Road and between the Hamilton Road/Route 20 on-ramp and the Bradley Airport Connector (Route 20). This emergent scrub-shrub wetland is situated in a depression directly adjacent to the southbound highway. The hydrologic source for WA-3 includes groundwater seepage from the embankment and stormwater runoff from the adjacent roadways. Water from WA-3 flows in a southwesterly direction and is collected by a catch basin where it then flows southerly through a culvert system and discharges to WA-5.

The NRCS mapped soil associated with this wetland is Udorthents-Urban Land Complex. The dominant vegetation in WA-3 includes common reed*, elderberry, grape, Asiatic bittersweet*, bedstraw (*Galium* sp.), staghorn sumac, softstem bulrush (*Schoenoplectus tabernaemontani*), cattail, jewelweed, pussy willow (*Salix discolor*), and late goldenrod (*Solidago gigantea*). The principal functions and values of this wetland are small-scale floodflow alteration for the small stream within the wetland and sediment and toxicant retention from the nearby roadway (Table 5-20).

Wetland Area 4

Wetland Area 4 is a $0.21 \pm$ acre wetland located between the Bradley Field Connector Hamilton Road off-ramp and Trap Rock Road. This emergent, scrub-shrub, forested wetland lines the banks of Rainbow Brook and an unnamed tributary to Rainbow Brook. There is a culvert at the northeast end of the wetland and a culvert at the northwest end of the wetland that forms a

Table 5-20. Summary of Functions & Values of Wetland Areas

Wetland Area			WA-1	WA-2	WA-3	WA-4	WA-5	WA-6
Wetland Functions & Values	GWRD		X	X	X	X	X	X
	FFA		P	P	P	P	P	P
	FSH					P	P	
	STPR		P	P	P	X	X	P
	NRRT							P
	PE							
	SS					P	P	
	WLH							X
	REC							
	EDS							
	UH							
	VQA							
	ES	ES	X ¹					

¹Potential endangered species habitat based on proximity to a mapped CTDEEP Natural Diversity Database area (see Section 5.12).

FUNCTION & VALUE ABBREVIATIONS

GWRD = Groundwater Recharge/Discharge
 FFA = Floodflow Alteration
 FSH = Fish and Shellfish Habitat
 STPR = Sediment/Toxicant/Pathogen Retention
 NRRT = Nutrient Removal/Retention/Transformation
 PE = Production Export
 SS = Sediment /Shoreline Stabilization
 WLH = Wildlife Habitat
 REC = Recreational Value
 EDS = Educational/Scientific Value
 UH = Uniqueness/Heritage
 VQA = Visual Quality/Aesthetics
 ES = Endangered Species

FUNCTION & VALUE DESIGNATION

P = Principal Function or Value
 X = Function or Value Present
 Unchecked indicates Function or Value absent

connection to WA-5 on the other side of the off-ramp. The southern end of this wetland follows Rainbow Brook as it extends beyond the project area.

The NRCS mapped soils associated with this wetland are Udorthents-Urban Land Complex and Hinckley Gravelly Sandy Loam. Dominant vegetation is comprised of common reed, oriental bittersweet, pussy willow, white oak, and eastern cottonwood. WA-4 has been significantly disturbed and is affected by stormwater discharges from the surrounding land use. The principal functions and values of this wetland are floodflow alteration for Rainbow Brook and unnamed tributary to Rainbow Brook, fish habitat within the streams, and shoreline stabilization for the streams.

Wetland Area 5

Wetland Area 5 (WA-5) is a 0.15± acre perennial stream (Rainbow Brook) and scrub-shrub, forested wetland located southwest of Hamilton Road between the Hamilton Road/Route 20 off-ramp and Route 20. The stream originates from twin 48-inch diameter RCP culverts beneath Route 20, flows in a southerly direction through a deeply-incised channel for a distance of approximately 200 feet, and is re-culverted beneath the Hamilton Road/Route 20 Off-Ramp before flowing to WA-4 on the other side of the off-ramp.

WA-5 passes through the western corner of a disturbed, vacant area of the airport. It is a mostly open, sandy or tar and gravel area with several fill piles. The stream is incised in a channelized wooded valley with 6- to 8-foot high banks on either side. The stream is 10-15 feet wide, with 6 inches to one foot depth of water at normal low flow. The stream channel bottom is formed of sand and gravel with numerous strewn boulders and riprap along its course.

The stream shows evidence of episodic high flows, most likely associated with the stormwater drainage system from the airport runway as well as Route 20 and Hamilton Road. There are some areas of scour along the banks of the stream, as well as areas of sediment deposition located within the stream and narrow floodplain. Indicators of high flow were observed to a height of 2-3 feet above the bed of the stream.

The NRCS mapped soil associated with this wetland is Udorthents-Urban Land Complex. The common wetland vegetation along the stream consists of red maple (*Acer rubrum*), eastern cottonwood, white oak, willow saplings (*Salix* sp.), elderberry, silky dogwood, and honeysuckle (*Lonicera* sp.)*, multiflora rose (*Rosa multiflora*)*, skunk cabbage (*Symplocarpus foetidus*), cinnamon fern (*Osmunda cinnamomea*), sensitive fern (*Onoclea sensibilis*), jewelweed, Jack-in-the-pulpit (*Arisaema triphyllum*), common reed*, poison ivy, autumn olive (*Elaeagnus umbellata*)*, and Asiatic bittersweet*.

WA-5 is a severely degraded riparian wetland and perennial stream. Culverting, channel armoring, episodic stormwater flows and poor water quality have limited the functions and values that this wetland area provides. The principal functions and values of this wetland are floodflow alteration for Rainbow Brook, fish habitat within the stream, and shoreline stabilization for the stream.

Wetland Area 6

Wetland Area 6 (WA-6) is a $0.71 \pm$ acre wetland located south of Route 20 and west of the existing bulk fuel storage facility near the Hamilton Road/Route 20 Off-Ramp. Historical mapping shows that WA-6 is in the general location of a wetland complex and intermittent stream, which is a tributary to Rainbow Brook to the south. This emergent wetland receives flow from multiple sources including two separate 18-inch diameter RCPs and one 36-inch diameter RCP. One of the 18-inch RCPs collects groundwater discharge and stormwater runoff from WA-2. The other RCPs primarily collect stormwater from developed portions of the project area, notably the Route 20/Bradley Airport Connector and a portion of the airport deicing area.

Common reed* is the dominant vegetation in WA-6. Other common vegetation species include red maple, elderberry, grape, Asiatic bittersweet*, bedstraw, staghorn sumac, cattail, jewelweed, skunk cabbage, and poison ivy. WA-6 has been significantly disturbed and is affected by stormwater discharges from the surrounding land use. However, WA-6 offers some principal functions and values. Notably, the large area of the wetland and organic soils provide sediment and toxicant retention, nutrient removal/retention/transformation capacity, and small-scale flood flow alteration.

5.10.2 Impact Analysis

The No Action alternative would result in no direct or indirect impacts to wetlands or watercourses.

Under the Proposed Action, direct and indirect impacts to wetland areas would occur primarily as a result of the landside roadway construction. As discussed previously in *Section 2*, two landside roadway configuration alternatives were evaluated in the schematic design for traffic leaving or re-circulating the Terminal B area – a flyover ramp alternative and an at-grade intersection alternative. Both alternatives would have direct and indirect impacts on wetland areas in the project area.

Figure 5-14 shows the proposed alignment of the flyover alternative relative to the wetland areas identified in the project area. *Table 5-21* summarizes approximate wetland impacts for both alternatives. The flyover alternative would have direct impacts to WA-1, WA-2, WA-3 and WA-5, resulting in approximately 0.28 acres of permanent wetland impacts. *Figure 5-15* shows the proposed alignment of the at-grade intersection alternative relative to the wetland areas identified in the project area. The at-grade alternative would have direct impacts on WA-3 and WA-5, resulting in approximately 0.09 acres of permanent wetland impacts.

The flyover alternative would almost completely eliminate or alter WA-1. While the at-grade intersection alternative would avoid this wetland, WA-1 is located near the proposed development limits of the parking garage/ConRAC facility and may be impacted regardless of the roadway configuration selected. The flyover alternative would also alter WA-2 and WA-3, while the at-grade intersection alternative would avoid WA-2 and result in only limited impacts to WA-3. Both alternatives would impact WA-5 and completely avoid WA-4 and WA-6. Overall, the at-grade alternative would result in lower total wetland impacts and would avoid impacts to WA-2 and possibly WA-1.

Table 5-21. Summary of Wetland Impacts

Wetland	Area (acres)	Impact Area (acres)	
		Flyover Alternative	At-Grade Intersection Alternative
WA-1	0.07	0.06	0
WA-2	0.33	0.11	0
WA-3	0.06	0.06	0.01
WA-4	0.21	0	0
WA-5	0.15	0.05	0.08
WA-6	0.71	0	0
Total	1.53	0.28	0.09

Under the at-grade intersection alternative, a realigned roadway would be constructed through portions of WA-3 and WA-5. Based on field observations, the existence of WA-3 is a result of the historical disturbance of the site and directed groundwater and surface water flow. WA-3 does not support finfish and, given its size and isolation from other wetlands or watercourses, offers minimal wildlife habitat. WA-5 is a degraded riparian wetland and perennial stream that serves as a stormwater conveyance originating from the airfield and flowing toward Rainbow Brook. WA-5 provides shoreline stabilization, potential fish habitat in the stream, and small-scale floodflow alteration. The at-grade intersection alternative would result in the loss of these principal wetland functions and values, and other limited functions or values that these wetland areas provide including groundwater recharge/discharge and sediment and toxicant retention.

5.10.3 Mitigation

Wetland mitigation requirements could include wetland restoration, creation, enhancement, or preservation in order to retain/restore lost wetland functions or values. The Proposed Action would result in the loss of some principal wetland functions and other limited functions or values. Mitigation could include enhancement of other on-site wetlands that would remain undisturbed by the Proposed Action, such as implementation of an invasive species removal program for and restoration of WA-4 and/or WA-6. Stormwater design for the landside roadway system could mitigate the impact to principal and other wetland functions and values, including groundwater recharge/discharge, small-scale floodflow alteration, and pollutant reduction (see *Table 5-20*). The design will consider primary stormwater treatment practices and Low Impact Development measures such as water quality swales, bioretention, and other stormwater infiltration techniques.

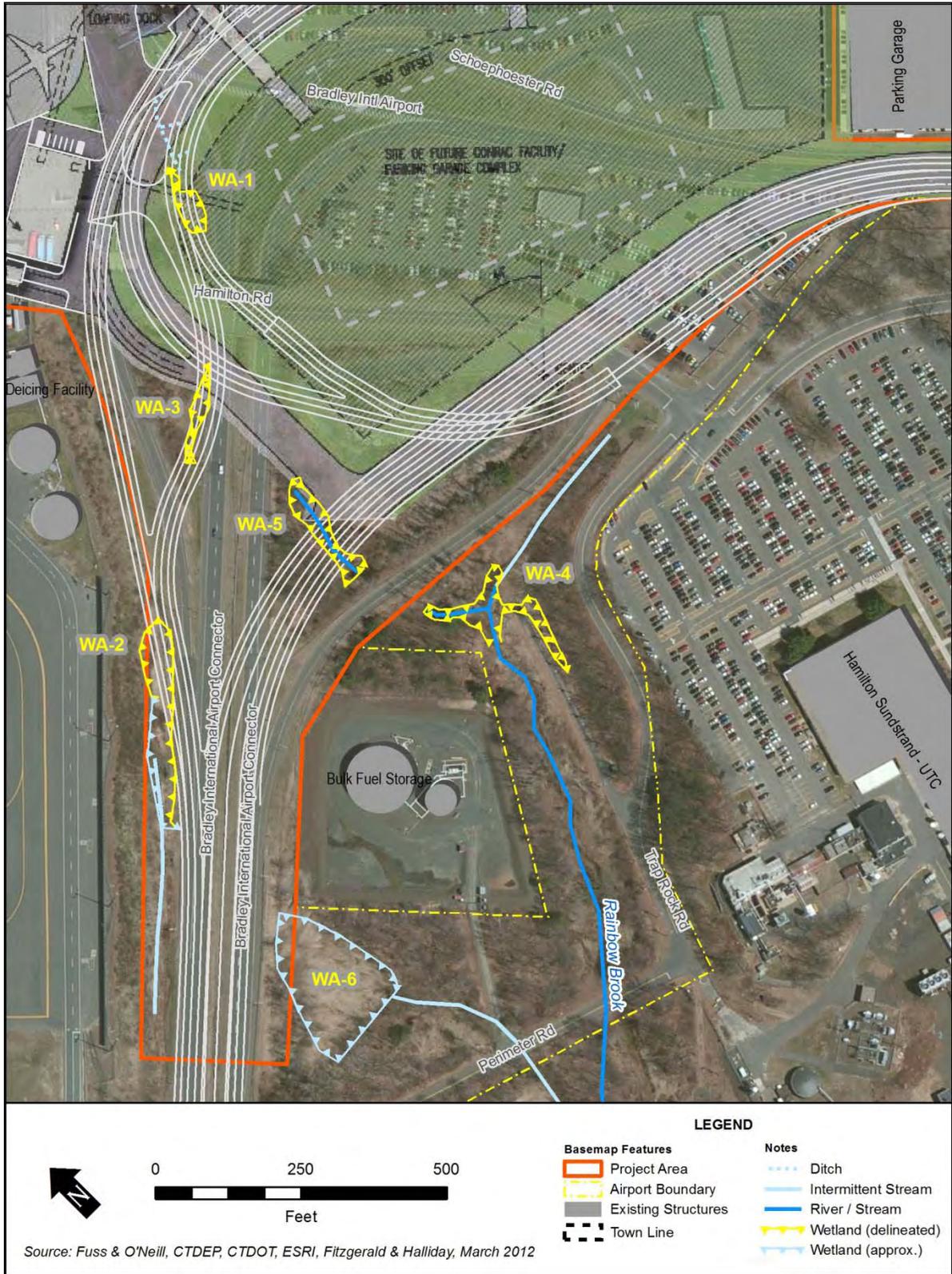


Figure 5-14. Wetland Impacts – Flyover Alternative

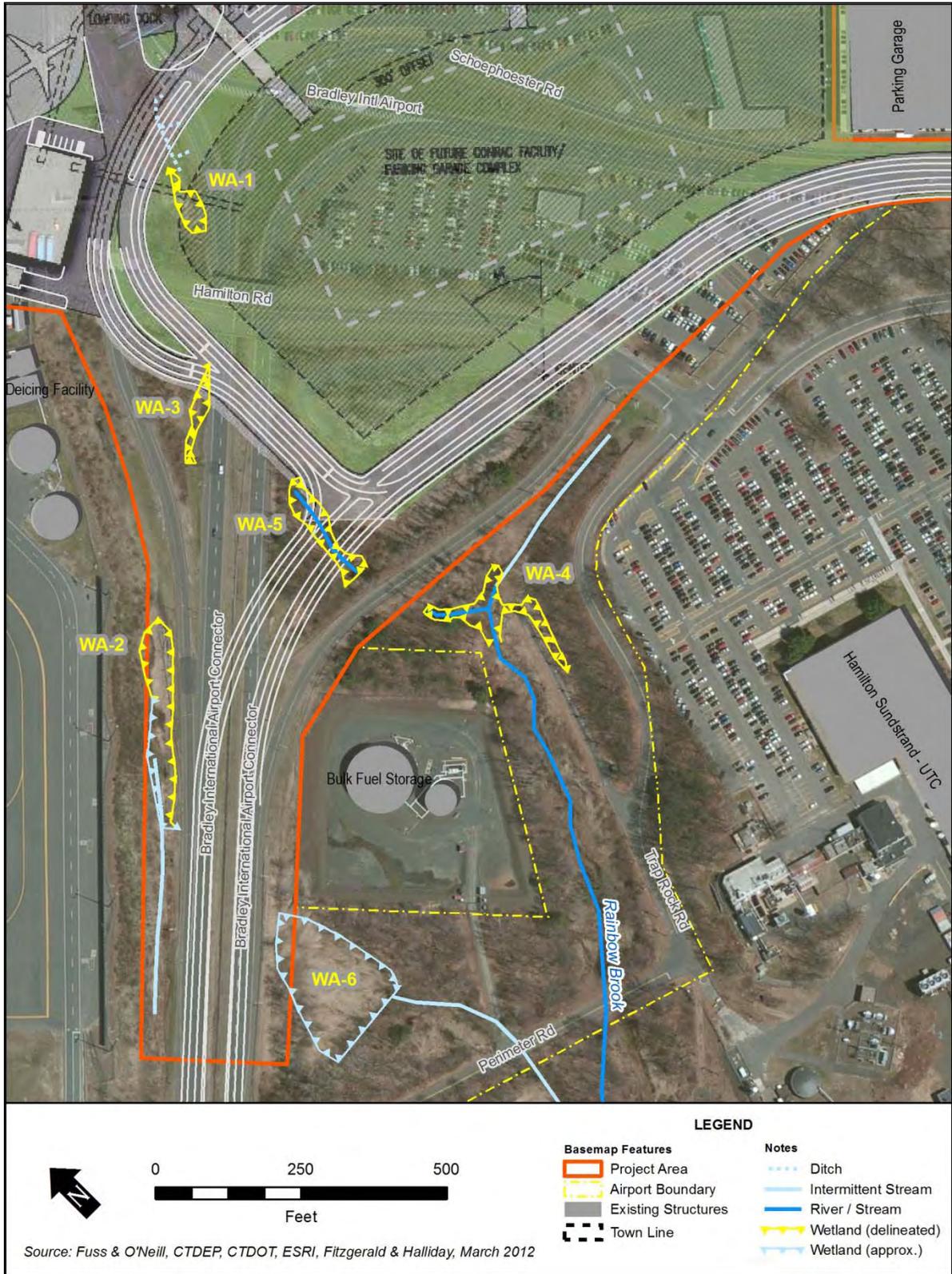


Figure 5-15. Wetland Impacts – At-Grade Intersection Alternative

Specific mitigation measures would be developed during subsequent project design and permitting in coordination with the U.S. Army Corps of Engineers and the CTDEEP. Potential Federal and State wetlands and watercourses permits that may be required include:

- Clean Water Act Section 404 Permit. Given the extent of impacts to on-site wetlands, the Proposed Action may qualify as a Category 2 activity under the Connecticut General Permit as administered by the U.S. Army Corps of Engineers. A wetland mitigation plan and invasive species management plan would also be required.
- Clean Water Act Section 401 Water Quality Certification as administered by the CTDEEP.
- Inland Wetlands and Watercourses Permit as administered by the CTDEEP in accordance with the Connecticut Inland Wetlands and Watercourses Act.

5.11 Coastal Resources

5.11.1 Existing Conditions

The project area is located outside both the Connecticut Coastal Area and Connecticut Coastal Boundary. There are no coastal resources on or near the site.

5.11.2 Impact Analysis

Neither the No Action nor Proposed Action alternatives would affect coastal resources.

5.11.3 Mitigation

No coastal resources would be affected by the Proposed Action; therefore, no mitigation is required.

5.12 Vegetation, Wildlife, and Threatened and Endangered Species

5.12.1 Existing Conditions

Vegetation and Wildlife Habitats

The project area and surrounding land has been extensively altered over the last 70 years and has become fragmented by construction and expansion at the airport. The majority of the project area consists primarily of impervious surfaces, including asphalt, buildings, and concrete. Based on field observations conducted by Fuss & O'Neill, the project area provides minimal ecological diversity and wildlife habitat. The ecological habitats that are present are limited to wetland areas described in *Section 5.11*, turfgrass/mowed fields, disturbed open fields, riparian woodland and urban woodland (*Figure 5-16*).

- The turf grass/mowed field habitats are composed primarily of planted grass species that are mowed on a regular basis. Some ornamental trees are also planted in these areas. The turf grass/mowed field areas are not equivalent to the protected grassland habitat area associated with other portions of the airport. Because this area is regularly mowed and maintained the quality of habitat is unfavorable for protected grassland bird species.
- The disturbed open field areas consist of grasses and herbaceous species that are occasionally mowed. Common species in these areas include common reed (*Phragmites australis*)*⁶, ragweed (*Ambrosia trifida*), little bluestem (*Schizachyrium scoparium*) and various species of goldenrod (*Solidago* spp.) and asters (Asteraceae).
- The urban woodland areas are those areas where there is a distinct tree canopy and a dense understory typically dominated by invasive species. The urban woodland areas are dominated by pin oak (*Quercus palustris*), red oak (*Quercus rubra*), eastern cottonwood, sugar maple (*Acer saccharum*), black locust (*Robinia pseudoacacia*)*, and tree of heaven (*Ailanthus altissima*)* in the canopy. The understory consists of honeysuckle (*Lonicera* spp.)*, greenbrier (*Smilax* sp.), Asiatic bittersweet and poison ivy.
- The riparian woodland areas are associated with Wetland Areas 4 and 5 (WA-4 and WA-5) in the project area. The common species observed in this habitat are described in *Section 5.11*.

The habitats within the project area are largely fragmented, relatively small in size, or isolated from similar habitats in the landscape by roads and other development. Given these conditions, the wildlife migration as well as cover, feeding and breeding habitat is greatly limited. Furthermore, the existing vegetative cover combined with on-site and surrounding land uses perpetuate the presence and proliferation of nuisance and invasive species at the site. A list of potential breeding birds in this area was obtained from the Connecticut Breeding Bird Atlas (Breeding Bird Atlas Explorer, 2011) (*Table 5-22*). This list is based upon historical observations of breeding birds within the particular subsection of the Windsor Lock USGS 7.5-minute quadrangle that includes the project area. The list does not necessarily imply that these birds are currently using the habitats in the project area for breeding purposes. Other wildlife observed or suspected to use the habitats within the project area or adjacent areas is summarized in *Table 5-23*.

⁶ Invasive or noxious species are denoted herein with an asterisk.



Figure 5-16. Vegetation and Wildlife Habitats

**Table 5-22. Summary of Potential Breeding Birds
(Windsor Locks Quadrangle – 22D)**

Red-tailed Hawk	Horned Lark	Chipping Sparrow
Killdeer	Northern Rough-winged Swallow	Field Sparrow
Upland Sandpiper	Black-capped Chickadee	Vesper Sparrow [^]
Rock Pigeon	Tufted Titmouse	Savannah Sparrow [^]
Mourning Dove	American Robin	Grasshopper Sparrow [^]
Black-billed Cuckoo	Gray Catbird	Song Sparrow
Chimney Swift	Northern Mockingbird	Swamp Sparrow
Hairy Woodpecker	European Starling	Northern Cardinal
Northern Flicker	Cedar Waxwing	Indigo Bunting
Willow Flycatcher	Blue-winged Warbler	Bobolink [^]
Great Crested Flycatcher	Yellow Warbler	Eastern Meadowlark [^]
Eastern Kingbird	House sparrow	Common Grackle
Warbling Vireo	Black-and-white Warbler	Brown-headed Cowbird
Upland Sandpiper ^{^7}	American Redstart	Brown Thrasher [^]
Red-eyed Vireo	Common Yellowthroat	Baltimore Oriole
American Crow	Eastern Towhee	House Finch
American Kestrel [^]		

Source: Breeding Bird Atlas Explorer, 2011.

**Table 5-23. Summary of Potential Mammals,
Reptiles and Amphibians**

Mammal Species	Reptile & Amphibian Species
Chipmunk	Common garter snake
Coyote	Ribbon snake
Eastern cottontail	Northern ringneck snake
Gray squirrel	American toad
Little brown myotis	Spring peeper
Northern myotis	Gray treefrog
Opposum	Green frog
Raccoon	Northern redback salamander
Red fox	
Striped skunk	
Short-tailed shrew	
White-tail deer	

Source: DeGraaf & Yamaski, 2001.

⁷ ^ indicates that this species is listed as endangered, threatened or of special concern by the State of Connecticut

Federal and State Listed Endangered, Threatened and Special Concern Plant and Animal Species

The Federal Endangered Species Act (ESA) [16 U.S.C. 1531 et seq.] of 1973 provides for the listing, conservation, and recovery of endangered and threatened species of plants and wildlife. Section 7(a)(2) of the ESA states that Federal agencies shall ensure that actions it authorizes, funds, or carries out are not likely to jeopardize the continued existence of a listed species or result in destruction or adverse modification of designated critical habitat. Section 9 of the ESA prohibits the take of listed species. Take is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect” by the ESA. The definition of harm further includes adverse habitat modification. Federal actions that could result in take, but not jeopardize or adverse modification, must still be coordinated under Section 7.

The minimal biological evaluation under Section 7 of the Endangered Species Act (ESA) requires the determination of the presence of listed or proposed species or critical habitat in the project vicinity. If protected species or habitats are known not to occur in the action area, the environmental analysis with respect to the ESA is complete. This project was reviewed for the presence of Federally-listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website (http://www.fws.gov/newengland/EndangeredSpec-Consultation_Project_Review.htm). Based on this review, no Federally-listed species exist within the project area (*Appendix A*). This finding is consistent with the 2005 Master Plan Update, which stated that the U.S. Fish and Wildlife Service (USFWS) New England Field Office determined that there are no known occurrences of Federally-listed or proposed threatened or endangered species or critical habitats within the project area.

State Endangered and Threatened Species

Information on Connecticut State listed endangered, threatened, and special concern plant and animal species in accordance with Connecticut General Statutes (C.G.S.) Sections 26-306-4 through 26-306-6 is maintained by the Connecticut Natural Diversity Database (CT NDDB). This mapping identifies general areas of concern for known occurrences of State- and Federally-listed endangered, threatened and special concern species and significant natural communities. The existing CT NDDB mapping, updated July 2011 (*Figure 5-17*), indicates that substantial areas of concern exist in and adjacent to the project site. The NDDB areas are identified to the northeast and southwest of the project area and relate to the critical habitat areas.

A formal NDDB query was made to the CTDEEP, and a response was received from the CTDEEP Wildlife Division on September 26, 2011. The mapped NDDB areas, which are outside of the project area, have historically been grassland areas and are habitats to several species of grassland birds. Only grassland bird species were identified in the CTDEEP Wildlife Division letter dated September 26, 2011. These species are listed in *Table 5-22* and include grasshopper sparrow (E)⁸, vesper sparrow (E), upland sandpiper (E), horned lark (T), savannah sparrow (SC), American kestrel (T) and brown thrasher (SC).

⁸ E – Endangered, T – Threatened, SC – Special Concern

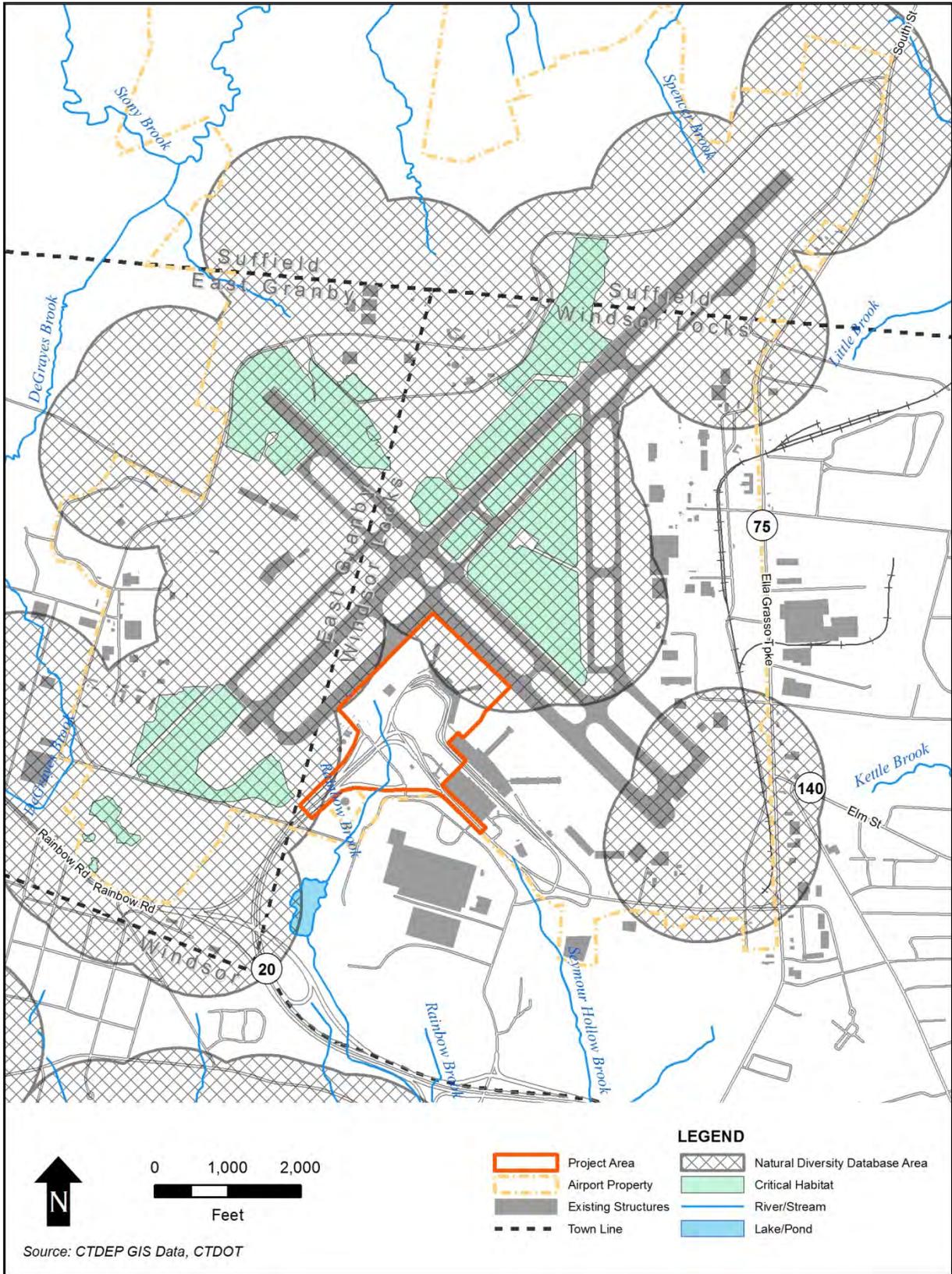


Figure 5-17. Ecological Resources

5.12.2 Impact Analysis

The No Action alternative would not result in direct or indirect impacts to wildlife or vegetation at the site.

As discussed in *Section 4.4*, two landside roadway configuration alternatives were evaluated using design simulations for traffic leaving or re-circulating the Terminal B area: A flyover ramp alternative and an at-grade alternative. Based on preliminary design evaluations, the at-grade alternative was identified as the preferred configuration. The at-grade alternative would have some direct and indirect effects on the identified habitats within the project area. However, under existing conditions, the project area and adjacent areas have been extensively developed and wildlife habitats are fragmented. Therefore, loss and fragmentation of wildlife habitat would not result in significant direct or indirect impacts under the Proposed Action.

With regard to the grassland bird habitats and species, State-listed species would not be affected by the Proposed Action. The majority of the project would occur within areas that are currently developed. The critical habitat areas with which the State-listed species are associated are outside of the project area. Furthermore, the grassed areas that are located within the project area are not ideal habitat for grassland bird species as they are mowed frequently and subject to regular disturbance. Therefore, no direct or indirect impacts to State-listed species are anticipated provided that appropriate construction and operational best management practices are implemented, as described below.

5.12.3 Mitigation

The existing habitats identified in the project area are largely fragmented, relatively small in size or isolated from similar habitats in the landscape, and are primarily associated with roads and other development. As such, these areas provide limited ecological diversity or wildlife habitat. For this reason, the proposed activity would not have an adverse effect on wildlife or habitats within or adjacent to the project area. Therefore, mitigation to compensate for the loss of these habitat areas is not necessary.

Due to the presence of State-listed grassland bird species on the airport property, best management practice would be developed in consultation with the CTDEEP Wildlife Division to minimize disturbance to the species during construction. Typical best management practices would include maintenance of a buffer zone between nesting sites and construction activity and restriction of construction activities to paved areas. Although not anticipated given the location of the Proposed Action, time of year restrictions could be required for areas near habitat to prevent disturbance.

5.13 Soils and Geology/Farmland

5.13.1 Existing Conditions

The project area is located in a developed portion of the airport. Soils in the project area are designated by the Natural Resources Conservation Service (NRCS) as almost entirely (over 99%) Urban Land (including Urban Land Complex) (*Figure 5-18*). Urban Land is defined by NRCS as land mostly covered by streets, parking lots, buildings, and other structures of urban areas (NRCS, 2010). The bedrock geology in the area is primarily Portland Arkose, locally known as brownstone – a reddish-brown, medium- to coarse-grained, sandstone-like, sedimentary rock containing quartz, feldspar, and rock fragments (CTDEP, 1990; reprinted 1996).

The Federal Farmland Protection Policy Act (FPPA) (Public Law 97-98, 7 U.S.C. 420) and implementing regulations (7 CFR 658) apply to projects undertaken by a Federal agency or that receive assistance from a Federal agency and that may irreversibly directly or indirectly convert farmland to nonagricultural use. At the State level, under Title 22 Chapter 466 of the Connecticut General Statutes, Section 22-6, the Commissioner of the Connecticut Department of Agriculture is responsible for the review of any proposed State-funded project that would result in the conversion of 25 or more acres of prime farmland to non-agricultural use. While there are pockets of Prime Farmland Soils or Soils of Statewide Importance within the airport's boundaries, none are present within the area of proposed activity under the No Action or Proposed Action alternatives (*Figure 5-19*).

5.13.2 Impact Analysis

The No Action alternative includes the demolition of Terminal B; however, no soils or geologic features of national, state, or local importance are located near this building. Therefore, no direct or indirect impacts to soils or geology would occur.

No soils or geologic features of national, state, or local importance are located near the existing terminal complex, so no direct or indirect impacts to soils or geology are anticipated for the Proposed Action.

Farmland soils on the airport property would not be directly affected by either the No Action or Proposed Action alternatives. Since no agricultural activity is currently occurring, no indirect or secondary impacts to farmland soils would occur as a result of activities associated with passenger handling facilities.

5.13.3 Mitigation

Since no direct or indirect adverse impacts to soils or geology are anticipated, no mitigation is necessary or proposed.

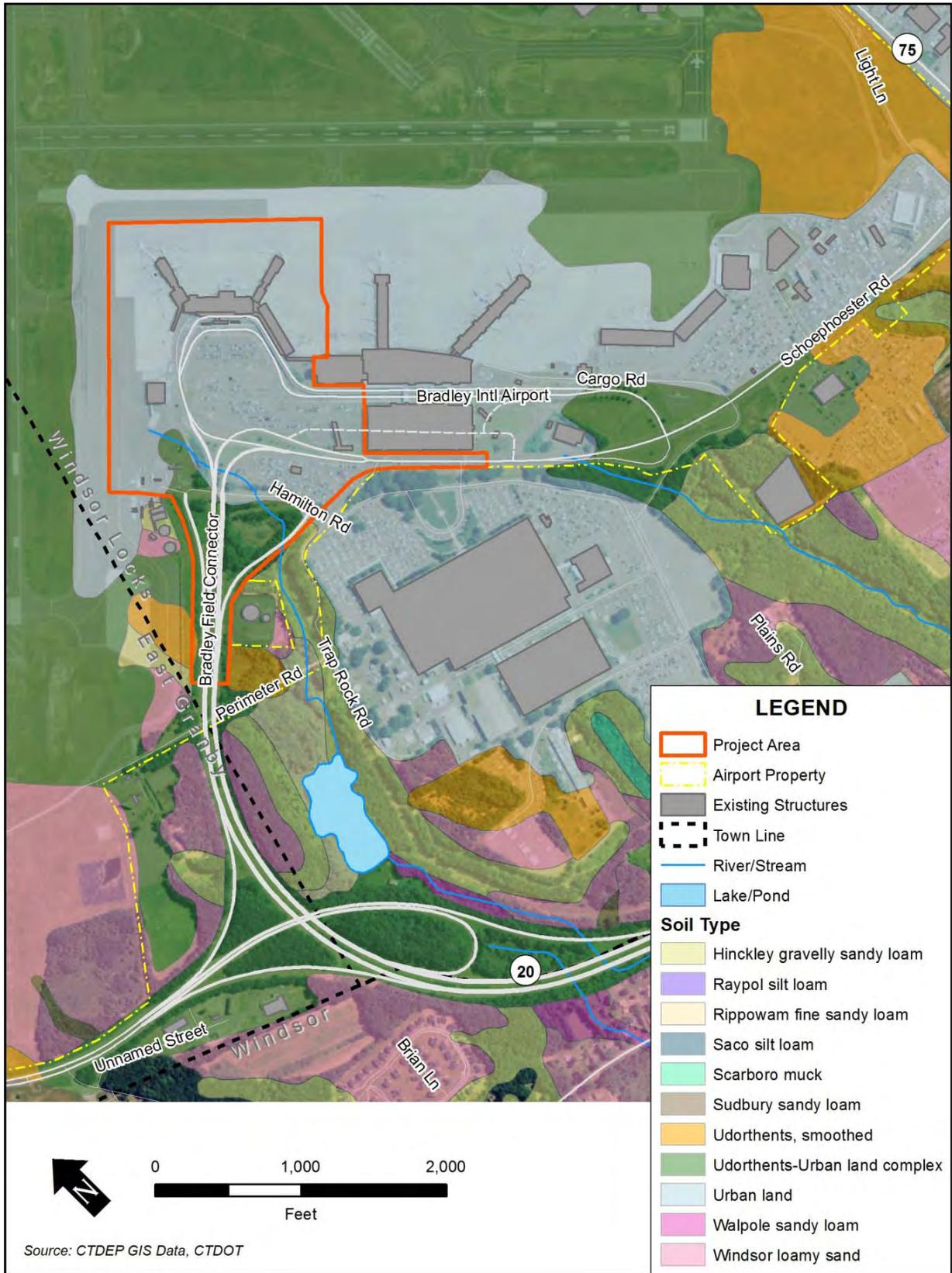


Figure 5-18. Soils

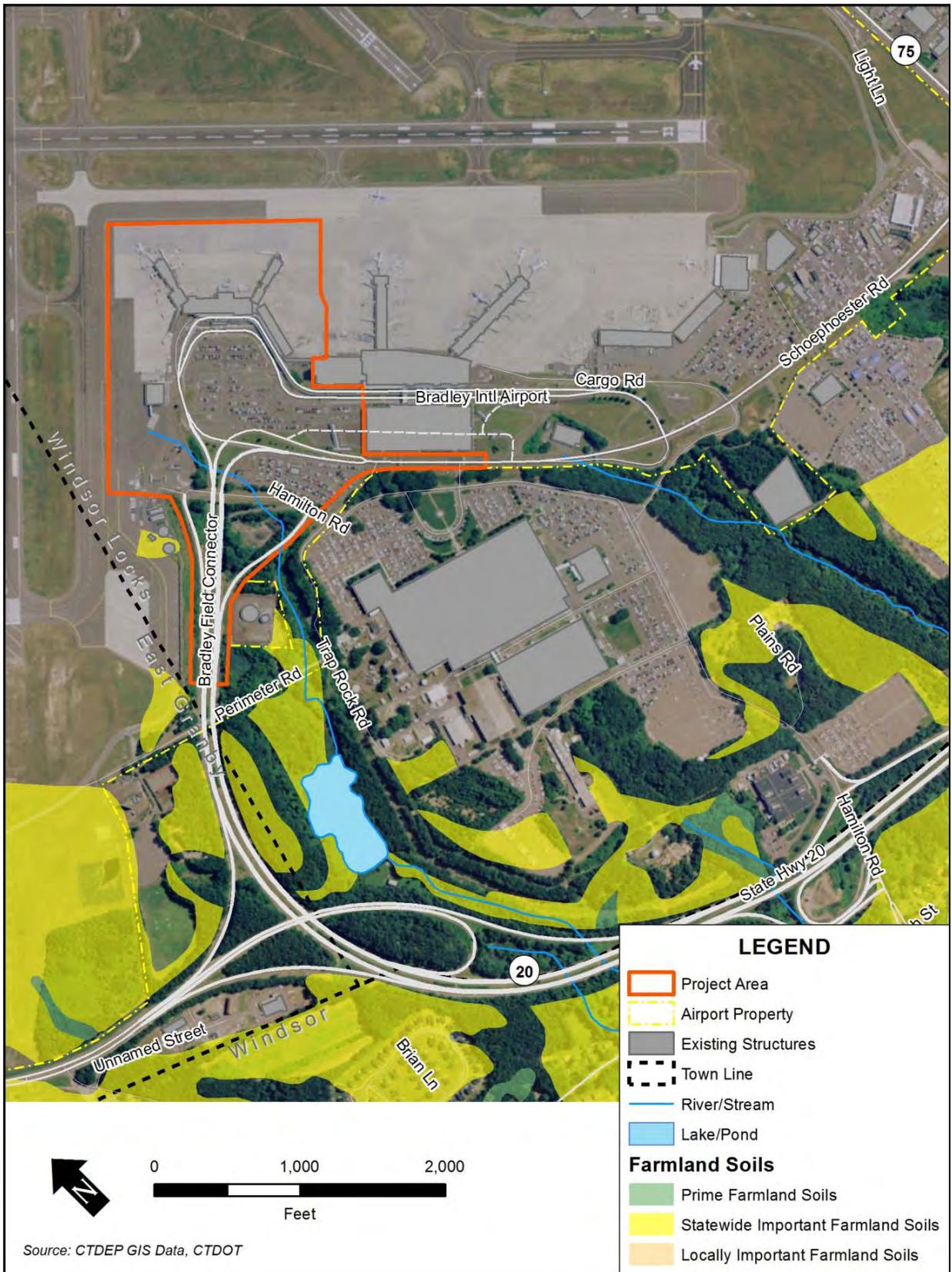


Figure 5-19. Farmland Soils

5.14 Cultural Resources

Section 106 of the National Historic Preservation Act of 1966 requires Federal agency actions to consider the effect of a project on a historic property as well as on tribal entities.

Coordination with the Connecticut State Historic Preservation Office (SHPO) was first initiated in 2007 during the planning process for the Proposed Action (*Appendix A*). Coordination with the Tribal Historic Preservation Offices (THPOs) of Federally recognized tribes - the Mohegan and Mashantucket Pequot Tribes – was conducted by FAA in 2012 (*Appendix A*).

Section 4(f) of the Department of Transportation (DOT) Act prohibits the Secretary of Transportation from using land from a significant historic site, publically-owned park or recreation area, or wildlife and waterfowl refuge unless “(1) there is no prudent and feasible alternative to using that land; and (2) the program or project includes all possible planning to minimize harm to the... historic site resulting from the use.”

5.14.1 Existing Conditions

As stated in an October 29, 2007 letter from SHPO, the existing Terminal B complex lacks historic architectural integrity and is not eligible for the National Register of Historic Places. The Proposed Action would have no effect on historic, architectural, or archaeological resources.

Correspondence between FAA and the Mohegan and Mashantucket Pequot THPOs in February and March 2012 indicates that no properties of historical, religious or cultural significance to the tribes would be affected by the Proposed Action. The Mohegan Tribe has requested consultation in the event of an inadvertent discovery of human remains during construction. Documentation regarding this finding is included in *Appendix A*.

5.14.2 Impact Analysis

Based on review of the project by the SHPO and THPOs, neither the No Action (i.e., the demolition of the existing Terminal B) nor Proposed Action alternative would affect cultural resources.

5.14.3 Mitigation

There are no cultural resources that would be affected by the Proposed Action; therefore, no mitigation is required.

5.15 Solid Waste, Toxics, Pesticides, and Hazardous Materials

5.15.1 Existing Conditions

Hazardous Materials

A preliminary site assessment was conducted for the portion of the BDL property within the project area. The assessment was completed to identify potential environmental concerns and to evaluate the potential for hazardous materials and/or petroleum products to be encountered during future site construction activities. The 2000 EA/FONSI (FAA and CTDOT, 2000) was reviewed to provide background information on existing condition of the project area as well as to identify nearby areas of concern which may have affected the environmental quality of the soil and/or groundwater within the project area. Additional documents reviewed include historical environmental investigation reports, Sanborn insurance mapping, records present in State of Connecticut and Federal environmental databases (copies of relevant source documents are included in *Appendix D*). Fuss & O'Neill personnel visited the site on September 12, 2011 accompanied by Mr. Marc Holland, Chief of Engineering Services at Bradley Airport and, for a portion of the time, with Mr. Daniel Reynolds, Environmental Analyst at Bradley Airport. Information obtained from these sources was used to evaluate the potential for hazardous material to be present within the project area.

The project area is located along the southern boundary of the BDL property, along Schoephoester Road in Windsor Locks, Connecticut. Structures included in the assessment are the existing Terminal B (Murphy Terminal), Concourses A and B and surrounding airplane aprons and taxiways, the International Arrivals Building (IAB), Federal Inspection Services (FIS) Building, short-term and long-term surface parking lots, and portions of Arrivals Road, Hamilton Road and the Bradley Airport Connector. The FIS Building was not included in the site inspection due to access restrictions. Given the age and function of this facility, it is unlikely that hazardous materials are stored in this area.

Prior to the construction of the airport and airfield at the site, the land was used for agricultural cultivation, specifically tobacco. Many of the original farm structures remained incorporated in the initial airport layout in order to better camouflage the airfield from above. Construction of the airport began in the 1940s; during this time the facility included three runways, maintenance buildings and refueling stations on the taxiways. According to the *Task 120: Preliminary Site Evaluation* prepared for the entire Bradley International Airport property (GEI, 2003), in 1945, the U.S. Army compiled an inventory of equipment and operations of the airport. This assessment listed “gasoline storage and pumping, oil and coal storage, ammunition and chemical warfare storage, maintenance and repair garages, and wastewater disposal.” Historically, an oil storage hangar and squadron armament building were located within the current Terminal B footprint. The buildings have since been demolished to accommodate the construction of the existing Terminal B. Since this building was constructed during the 1950s, it is unlikely that any environmental testing was conducted in this area to determine whether a release had occurred from the oil storage structures and/or the armaments building. Terminal B was completed in 1952, during the approximate time that the airport transitioned from military to civilian use. Expansions to the runway and additional buildings, including Concourses A and

B and the IAB, were constructed throughout the 1950s, 1960s and 1970s. The FIS Building was constructed in 2002.

The airport currently has status as a Conditionally Exempt Small Quantity Generator (CESQG) of hazardous wastes, generating between 100 and 1,000 kilograms of hazardous waste per month. Wastes generated at the site include paint-related material, environmental hazardous substances, combustible liquids, acid solutions, aviation fuel, corrosive liquids, flammable liquids and aerosols. The status of CESQG was put into effect as of August 2011. Between September 2006 and August 2011, the airport was a Small Quantity Generator (SQG) and prior to September 2006, the airport was a Large Quantity Generator (LQG) (Reynolds, pers. comm., Sept 28, 2011).

This analysis of existing conditions indicates that the following potential sources of hazardous materials and/or contamination exist either within the project area or at a nearby location, which may have migrated into the project area.

- Above-ground storage tanks (ASTs)
- Underground storage tanks (USTs)
- Transformers
- Glycol and deicing
- Buckeye jet fuel line
- Sewage pump areas (former and current)
- Indoor and outdoor floor/ground drains
- Elevators
- Spills on the taxiways, roadways and parking lots
- Generator and boiler rooms within Terminal B
- Waste storage
- Potential sources outside of the project area

These existing conditions are described in the sections below.

Above-ground Storage Tanks (ASTs) and Underground Storage Tanks (USTs)

Table 5-24 summarizes the known above-ground and underground storage tanks that were either historically or are currently located within the project area.

Existing underground storage tanks have been abandoned and are considered to be closed. During the site inspection performed on September 12, 2011 for this assessment, several above-ground storage tanks were observed within and surrounding Terminal B. These tanks contain fuel oil and glycol and are used to fuel the emergency generators and for plane deicing, respectively. Although many of the above-mentioned underground storage tanks were abandoned in accordance with prevailing standards in the State of Connecticut, it is unknown whether soil testing was performed in these areas to determine whether a release of the tank contents had historically occurred.

Table 5-24. Storage Tanks in the Project Area

Location	Tank Description	Installation Date	Size (gallons)	Current Status
Terminal B	UST - Fuel oil for boilers	1952	30,000/50,000	Removed in 1990; No closure documentation, but no water detected in tank in 1989
	UST – Diesel fuel oil for emergency generator	Unknown	2,000/2,500	Abandoned in place in 1998; Filled with w/cement-sand mix
	UST – Diesel fuel oil for FAA runway light emergency generator	Unknown	2,000/2,500	Abandoned in place in 1998; Filled with w/cement-sand mix
	AST – Diesel fuel oil for Terminal B runway emergency generator	Unknown	500	Existing
	AST – Diesel fuel oil in FAA generator room	Unknown	500	Out of use since 2002
	AST – Glycol (owned by American Airlines)	Unknown	8,000	Relocated; Existed within a secondary containment
	Tanker – Glycol (owned by American Airlines)	N/A	5,000	Existing within a secondary containment; Has likely been relocated
	UST – Fuel oil for emergency generators	1954	2,500	Removed either in 1990 or 1998; Water detected in tank in 1989
	Possible UST – Fuel oil for original emergency generator	1966	560	Existence is unknown; May have been a 2,500-gal tank removed in 1990 or 1998
	Day tank – Diesel fuel oil	1986	50	Believed to be existing
	Day tank – Diesel fuel oil	1976	50	Believed to be existing
Terminal B – Gate B20	AST – Glycol (owned by Northwest)	Unknown	9,000	Relocated; Existed within a secondary containment
	Fuel cart (owned by Northwest)	N/A	300	Historically used within the project area; Has likely been relocated
Terminal B – Gate B2	AST – Glycol (owned by Delta)	Unknown	8,000	An inspection made for the 2003 <i>Task 120</i> noted stormwater coming out of the secondary containment
	Fuel cart (owned by Delta)	N/A	300	An inspection made for the 2003 <i>Task 120</i> noted stormwater coming out of the secondary containment; Has likely been relocated
Terminal B – Southwest	Gasoline and diesel fuel cart (owned by Southwest)	N/A	300	Historically used within the project area; Has likely been relocated
Sewer Ejection Station	AST – Diesel fuel oil for emergency generator	1987	350	Located within a secondary containment
Federal Inspection Station	AST – Diesel fuel oil for emergency generator	2002	336	Below the generator; Double-walled
	UST – Heating oil for former Building 85-574	Unknown	Unknown	Removed around 1990

Source: 2003 *Task 120*, 2003 Building 85-574 Closure Report, and airport personnel.

Transformers

Transformers exist throughout the basement of the Terminal B building and on the concrete grounds located airside of the building. No information regarding PCB content was displayed on the transformers' exteriors. Three large transformers, owned by Siemens, are located along the airfield side of Concourse A and B on concrete pads. The concrete pads were in good condition and the transformers outside the building looked newer than those located within the boiler and generator rooms in Terminal B. Staining was observed on the concrete around the transformers.

Smaller transformers are located in the electrical and mechanical rooms in the basement of Terminal B, some of which are not located within secondary containment. The age of these units is unknown; however transformers manufactured and installed in Connecticut prior to 1976 typically use PCB-containing oil. According to historical environmental reports, three switches located in Terminal B were the last remaining PCB-containing electrical equipment at the site and were removed in 1990 (GEI, 2003). Although the equipment containing PCB oil may have been removed from the site, leaks from the transformer containments may have resulted in a release of PCBs to the surrounding concrete and/or building material.

Glycol and Deicing

Deicing operations at the airport are accomplished by spraying a glycol solution onto the exterior of an aircraft. Typically, this technique is performed at the airline gates or on the taxiways, including portions of the concrete apron along the airfield side of Terminal B⁹. The use of ethylene glycol for deicing has been phased out and now propylene glycol is used (GEI, 2003). Circular and trench ground drains are located throughout the apron and covered by a metal grate. Prior to glycol application, the drains were manually closed to prevent the glycol solution from entering the municipal sewer system or from impacting the subsurface soil and/or groundwater. Currently, the glycol is captured by a recovery system; however, historically the glycol was not collected and drained into the ground and nearby waterways.

The deicing facility is located southwest of the project area. This is where deicing equipment is kept and where the glycol recovery system is located. Smaller above-ground storage tanks containing either a propylene glycol solution or concentrated glycol are located along the airfield side of Terminal B. These tanks are owned and maintained by the airlines. Dispensers are attached to the sides of the tanks. The above-ground tanks around Terminal B appeared to be slightly corroded, but no holes were observed. They were situated on concrete pads, some of which showed slight staining and/or rusting of the surface.

Glycol-contaminated runoff is transported to the glycol recovery system site from the airside apron surrounding Terminal A via buried dedicated piping that runs beneath the short-term paved parking lot south of the Terminal B building. According to *the Preliminary Engineering Report*, "the existing glycol collection system will be realigned to avoid the new Terminal B foot print" (Urban Engineers and STV, Inc., 2010). Excavation and removal of the existing glycol piping system would result in the disturbance of soil surrounding the lines.

⁹ State of Connecticut Correspondence from a survey of the airport dated 1988.

Buckeye Jet Fuel Utility Line

Jet fuel is transported to the site via an underground pipeline owned by the Buckeye Pipe Line Company of New Haven, Connecticut. Several above-ground storage tanks are located south of the project area within the bulk fuel storage facility along the southern property boundary. Above-ground pipes in this area connect to an underground pipeline which runs from the storage tanks to a fueling station east of Terminal A. The pipeline crosses the eastern limit of the project area as it crosses Schoephoester Road. The pipeline would not be disturbed during future site construction activities; however a release of petroleum products from the pipeline could potentially migrate to the project area.

Sewage Pump Areas

A sewage ejection station is located in the area south of the FIS Building adjacent to the Bradley Airport Connector. Station equipment is located on concrete and gravel within a chain-link fence and includes a diesel fuel oil day tank to power an emergency generator.

The former sewer system plant was located in the cleared area northeast of Hamilton Road. This area is partially wooded except for a clearing in which street sweepings and debris are currently stockpiled. CTDOT enters this portion of the site via a paved access road off of Hamilton Road running east-west. Roughly four stockpiles were observed consisting of the following materials: street sweepings, gravel, asphalt, concrete fragments and brush.

Floor Drains and Ground Drains

Floor drains are located throughout the airport buildings in the project area that were inspected. During the site inspection, liquid was visible within several floor drains located in the basement and mechanical rooms of Terminal B. Drains provide a preferential pathway for contaminants released to the floor surface of a building to impact the underlying soil and/or groundwater. Although most drains are currently connected to the sanitary sewer system, material within the conduits may have impacted surrounding soil through cracks in the piping system or leaking between pipe joints.

Ground drains are located throughout the parking lots, roadways and Terminal B apron. Catch basins in the short-term parking lot in front of the existing Terminal B drain to an oil/water separator at the eastern side of the parking lot. Historically, glycol was discharged to ground drains near the terminal gates during deicing practices. Prior to the glycol recovery system being installed at the airport, the deicing solution was not recaptured before discharge to the subsurface. Leaks and spills of jet fuel, glycol or other chemicals associated with aircraft maintenance may have been historically discharged to the drains located airside of Terminal B.

Elevators

Two elevators as well as electric-powered escalators are located within Terminal B and the IAB. Due to the age of the elevators, it can be concluded that they are conventional hydraulic elevators. The storage location of hydraulic fluids associated with elevator operations and maintenance is unknown. Several closet-sized rooms were noted in the basement; however the interior of these spaces could not be viewed. It is possible that hydraulic fluids are contained within the elevator sumps. The elevator in the IAB contains a 75-gallon hydraulic oil reservoir (GEI, 2003).

One elevator is located within the FIS Building. This elevator contains a 75-gallon hydraulic oil reservoir (GEI, 2003).

Spills

A large number of spills have occurred within the project area (FirstSearch, 2011). Spills on the roadways, taxiways, apron and parking lots may have affected the environmental quality of soil and/or groundwater. Drains (floor and ground) are located throughout the areas in which a spill may have occurred; therefore a spill to the ground surface in these areas may have migrated to a nearby drain. Areas surrounding drains and catch basins would exhibit the greatest concentration of released contaminants.

One loading dock is located in the southwestern corner of Terminal B. The entrance is recessed and backs up to a platform adjacent to the coolers and freezers in the basement. According to site personnel, this loading dock was used for food and beverage deliveries only (Marc Holland, 2011). A trench drain is located at the base of the loading dock.

Generator and Boiler Rooms

Boilers, hot water heaters and a Freon storage tank are located in the basement of Terminal B. The basement is divided into a number of electrical and mechanical rooms. All the rooms have concrete flooring, and many floor drains were observed throughout the basement, several of which were observed to contain liquid at the time of the site inspection. A stormwater sump is located in the southwestern corner of the boiler room in the basement, near the loading dock entrance. Three boilers and associated day tanks are located within this room. A high water line is marked several feet above the basement floor on a concrete support beam in the basement, indicating that equipment within the boiler room is typically under several feet of water during a flood. Several electrical rooms are adjacent to the boiler room. Electrical controls for ATCT and runways are located in the basement of Terminal B. Regulators and other electrical equipment are located in this area as well.

Another mechanical and utility room is located on the ground floor, at the beginning of where Concourse A extends from Terminal B. Located within this room are a hot water heater, boiler, Freon tank, condenser pumps, expansion tank and a compressor. The main entrance into the underground utility corridor for electrical and cable lines begins in this room.

Emergency generators are located along the airfield side of Terminal B, between Concourses A and B. Two generators are contained within two separate rooms, one of which contains an above-ground storage tank used to fuel the two generators. Fuel feed lines extend through the ceiling between the two rooms. Staining of the concrete floor was observed in this area.

Waste Storage

During the site inspection, only one area with potential for waste storage was encountered within the project area. A locked storage room is located on the upper floor of the IAB with a label for lead acid batteries on the door. This room houses wireless communication equipment and batteries for backup power for Verizon Communications (Holland, pers. comm., 2011)

The FIS Building is located on the historic location of the Central Hazardous Waste Storage Area (Building 85-574). This building was constructed in the mid-1960s and was originally used as an aircraft hangar. Operations in this building included aircraft storage, maintenance and repair. The building was used for a variety of other purposes prior to the construction of the FIS Building in 2002, including cold storage, storage of State regulated waste consisting of soil cuttings from environmental borings and groundwater associated with the construction of Terminal A, and storage of waste paint and mineral spirits. A Closure Report from 2003 indicates that no hazardous waste or contamination associated with the former Central Hazardous Waste Storage Area (Building 85-574) remain at this location.

Historically, a small freight storage building (Building 85-581) was located east of the original footprint of Terminal B in the approximate location of the existing IAB. This building was constructed in the 1970s and was occupied by CTDOT from 1993 to 2000. At this time, vehicles used for runway painting were stored in this building. Between 1999 and 2000, this building housed the hazardous waste storage area (formerly stored in Building 85-574), consisting primarily of used paint and used light bulbs. Building 85-581 was demolished prior to the construction of the new Terminal A. A Closure Plan for Building 85-581, developed during its demolition, states that fuel contamination was encountered in the vicinity of this building during 1984. In this report, the source of the contamination is attributed to a historical fuel farm located southwest of the building that was used as a fuel loading station from the 1960s to 1980s (CTDOT, 2003).

Potential Sources Outside of Project Area

Based on the topography and hydrology of the project area, groundwater flow is towards the south/southwest and discharges to an unnamed tributary of Rainbow Brook located in the southern portion of the site in the vicinity of the former sewage treatment plant.

During the construction of Terminal A in the 1980s, a large quantity of jet fuel was discovered beneath the ground surface. Remediation, consisting of an air sparge system and horizontal soil vapor extraction (SVE) system, was designed and implemented at Terminal A. Due to its proximity to the project area and similarity in land usage (airport terminal and airfield), there is a possibility that the environmental quality of soil and/or groundwater beneath Terminal B is comparable in condition. The jet fuel plume has been since attributed to the former existence of a fuel tank farm in the approximate area of Terminal A. Although there is no evidence that the tank farm extended onto the footprint of the project area, contamination may have migrated onto the eastern portion of the project area.

The Connecticut Air National Guard (ANG) base is located northwest of the project area and is listed as a Federal Superfund site. There is the potential that historical and/or current releases at this location have impacted groundwater beneath the project area.

Pesticides and Toxics

Prior to the development of the site as an airport, land within the project area was used for tobacco farming. The method of application and type of pesticide is unknown; however arsenic-based pesticides were commonly used in the first half of the twentieth century.

Solid Waste

Non-hazardous solid waste generated at BDL is currently managed by an outside contractor, USA Town & Country. The contractor collects solid waste at the airport and transfers it to a variety of disposal contractors, with the exception of bulky waste, which is transported to the USA Town & Country facility in East Windsor, Connecticut, where the material is sorted and reused or disposed of.

The solid waste program inside the terminal and concourses includes source separation for recyclable materials including paper and plastics. Recycling containers are located throughout the terminal and concourses. The types of paper recyclables include mixed paper, magazines, newspaper, office paper, and cardboard. The mixed recyclables include plastic containers with recycling codes of 1 through 7, which include plastic beverage bottles and cups, Styrofoam cups, glass containers, and tin containers.

The BDL maintenance staff collects and transports recyclable materials to the appropriate airside and landside dumpsters. There is at least one wash station constructed where bottles and cans can be emptied and rinsed prior to placement in the accumulating dumpsters. The dumpsters are emptied by USA Town & Country when they are full, and the recyclable material is taken to a recycling facility.

Non-recyclable solid waste is collected in receptacles throughout the airport and removed by maintenance staff and placed in accumulating dumpsters. The refuse is transported by USA Town & Country to the Mid-Connecticut Resource Recovery Facility in Hartford. The resource recovery facility may employ techniques to separate recyclable materials that were placed into the refuse stream.

Universal waste, which may contain mercury, lead, Freon, and other hazardous constituents, could also be generated from building construction and daily operational activities. Such wastes potentially include:

- Batteries (e.g., for emergency lights and security systems)
- Sprinkler system contacts
- Fluorescent lamps including PCB ballasts
- Cathode ray tubes (e.g., computer monitors)
- Electronic equipment (e.g., circuit boards)
- Air conditioning equipment
- Gas regulators
- Thermostats

5.15.2 Impact Analysis

Hazardous Materials, Pesticides and Toxics

Under the No Action alternative, which includes the demolition of Terminal B, environmental risk associated with existing on-site conditions identified in the previous sections are limited to the following:

- Floor drains within Terminal B
- Elevators
- Spills within Terminal B
- Generator and Boiler Rooms
- Waste Storage Areas
- Above-ground storage tanks within Terminal B or adjacent to the exterior walls
- Underground storage tanks located beneath the building footprint or adjacent to the Terminal B exterior walls
- Transformers located within Terminal B or transformers that would require relocation to accommodate demolition activities

The environmental risks associated with the conditions, as related to the proposed demolition and construction areas, are summarized in the table in *Appendix D*. In addition to the existing conditions listed above, the Proposed Action would require the removal and proper disposal of underground storage tanks, transformers, utilities and potentially contaminated building materials. Handling and potential disposal of contaminated soil and groundwater would be required consistent with State and Federal regulations to avoid potential exposure during both the construction phase of the project and once the redevelopment is complete. As discussed below, alternative remediation strategies are possible to mitigate the presence of contaminated soil and avoid adverse effects from hazardous substances.

Although the majority of the project area was historically used for tobacco farming, the soil has been disturbed extensively to accommodate the construction of roadways and airport structures. The method application, type of pesticide and quantities used are unknown, however there is a very low potential for residual pesticide concentrations to remain in soil beneath the asphalt paved parking lots in the southern portion of the project area.

Solid Waste

Under the No Action alternative, the demolition of Terminal B would require the disposal of demolition materials. Impacts associated with demolition are discussed in *Section 5.20*. There are no anticipated direct or indirect impacts to ongoing solid waste management under the No Action alternative.

Increases in passenger trips and aircraft operations are expected to occur regardless of whether the Proposed Action occurs. Therefore, relative to the No Action alternative, the activities associated with the Proposed Action would not result in an increase in solid waste generation at the airport overall nor is it anticipated to result in direct or indirect impacts to solid or universal waste disposal. It is assumed that solid waste that would have been generated by passengers in Terminal A would be disposed of in the new Terminal B under the Proposed Action. Airside solid waste generation is anticipated to be similar to levels under the No Action alternative. Solid waste management would be handled in a similar manner to the current solid waste collection and disposal systems. Receptacles for refuse and recyclable materials would be located throughout Terminal B. A private waste hauler would be contracted to collect the solid waste, recycling, and bulky waste from the landside and airside and transport the waste off-site. Non-recyclable materials would be delivered to a resource recovery facility.

The State of Connecticut has developed guidelines and requirements that set environmental standards for State-funded facilities that are newly constructed or are undergoing major renovations (State of Connecticut Regulation Section 16a 38k 1 through 9: The Establishment of High Performance Building Construction Standards for State-Funded Buildings). The Proposed Action is subject to this requirement. The new facilities are required to include convenient areas to serve as collection points for recyclable materials and an area for the sorting and storage of such materials for pick-up by recyclers.

Solid waste generated by maintenance and operations at new buildings constructed under the Proposed Action would be disposed of in accordance with applicable Federal and State requirements. Universal waste generated on-site would be segregated from the general waste stream and recycled in accordance with Section 22a-449(c)-113 of the RCSA.

Construction-period impacts associated with solid waste are discussed in *Section 5.20*.

5.15.3 Mitigation

Hazardous Materials, Pesticides and Toxics

Construction activities associated with both the No Action and the Proposed Action alternatives would be undertaken in accordance with a site-wide soil management plan (SMP). The SMP would be utilized during the construction phase to ensure that pockets of contaminated soil and/or buried construction and demolition wastes are managed, disposed of, or reused in accordance with applicable regulations. The SMP would identify a specific course of action for the removal, treatment or encapsulation of the contaminated soil.

Site testing should be performed as part of the No Action and Proposed Action to characterize polluted building materials and to define areas of soil and groundwater contamination at the planned work areas. Areas of identified contamination and remediation strategies would be considered in subsequent phases of design. Alternative remediation strategies may include removal of contaminated soil for disposal or re-use at an approved landfill, encapsulation to make the soil inaccessible, or treatment the soil in place for reuse-removal.

Solid Waste

Solid and universal wastes generated during the on-going operation and maintenance of the proposed Terminal B would be handled and disposed of in accordance with local, State, and Federal regulations. Therefore, no mitigation is necessary.

5.16 Aesthetics/Visual Effects

5.16.1 Existing Conditions

The project area is heavily developed, located on airport property, and adjacent to a generally commercial/industrial area along the Route 20/Route 75 corridors. The project area is currently dominated by airport-related buildings (e.g., terminal, control tower, parking areas, etc) and an existing hotel (Sheraton Hotel). The majority of the site is impervious – either covered with pavement or buildings, with exception of the grassed areas surrounding the paved runways,

taxiways, and off-airport roadways. Lighting in the project area is provided by the airport lighting system. Photographs in *Figure 5-20* illustrate the existing aesthetic and visual conditions in the project area.

5.16.2 Impact Analysis

The No Action alternative includes the demolition of the existing Terminal B, which would reduce the overall building development in the project area. Other than short-term visual effects during demolition, which would be temporary in nature, demolition of the existing Terminal B complex is not anticipated to have any long-term negative effects on the aesthetic or visual environment.

Potential visual and aesthetic effects of the Proposed Action were assessed based on appearance of the proposed structures relative to the surrounding area. The Proposed Action would not result in any significant changes to the overall visual environment within the project area, which is dominated by similar airport facilities. Much of the project simply shifts and/or consolidates the location of facilities within an existing developed area and does not significantly add to it.

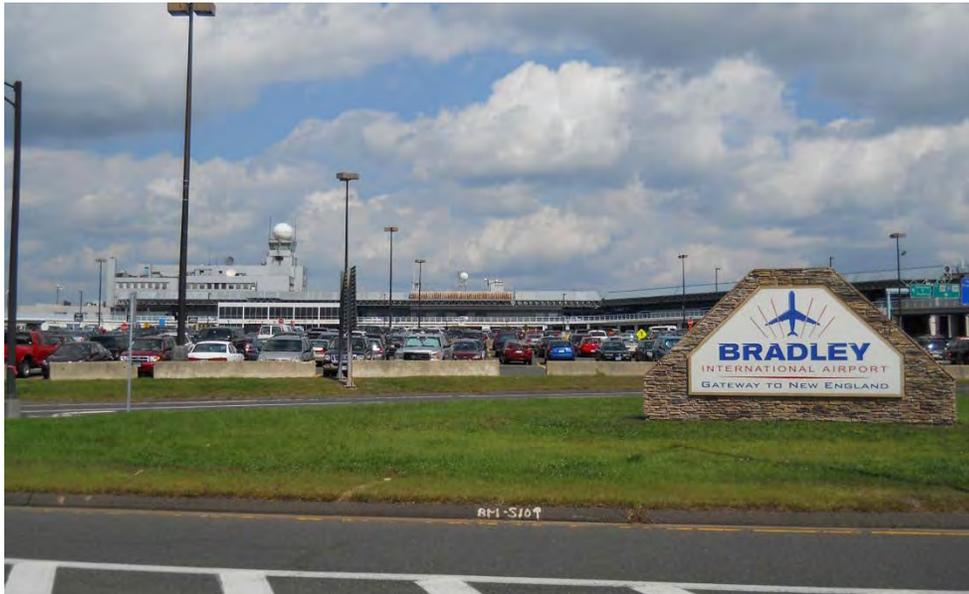
The primary goal of the lighting plan for the proposed project is to provide adequate lighting for way-finding and the safety and security of passengers, airport staff and visitors. Additionally, as stated in the Schematic Design Report (Urban Engineers and STV, Inc., 2011), the design uses lighting to “celebrate the terminal’s civic scale, to integrate illumination with public art, and coordinate architectural and structural expression,” with a goal of making the new terminal complex a pleasing focal point and not a public annoyance. The existing facilities in the project area already have active lighting systems.

Therefore, no negative effects on the lighting environment are anticipated as a result of the Proposed Action.

5.16.3 Mitigation

The Proposed Action is not anticipated to have an adverse impact on the aesthetics and visual setting of the project area or surrounding properties. Therefore, no mitigation is necessary or proposed.

Figure 4-20. Existing Visual Setting



Source: Fuss & O'Neill, Inc., September 12, 2011.

- a. Bradley International Airport, from the end of the Route 20 connector on Schoephoester Road facing east.**



Source: Fuss & O'Neill, Inc., September 12, 2011.

- b. Terminal B Building, view from Schoephoester Road facing northeast.**



Source: Fuss & O'Neill, Inc., September 12, 2011.

c. Terminal B Building, view from off-airport side parking lot.



Source: Fuss & O'Neill, Inc., September 12, 2011.

d. Terminal B Building, lighting on off-airport side.



Source: Fuss & O'Neill, Inc., September 12, 2011.

e. Surrounding Area, taken on Schoephoester Road facing southeast.

5.17 Energy Use and Conservation

5.17.1 Existing Conditions

Energy consumption within the existing Terminal B complex consists primarily of natural gas, electricity, and oil consumption. Natural gas is consumed by the building's boilers, which include three Weil-McLain gas-fired boilers that were installed since 2000. These relatively new boilers provide improved energy efficiency compared to the oil-fired fire tube steam boilers that they replaced, one dating from 1965 and two dating from 1951 (FAA and CTDOT, 2000).

The age of the facilities and equipment in the existing Terminal B affects their energy efficiency. The HVAC system that serves Terminal B and the IAB is a piecemeal system that was constructed as facilities were added and modified. Cooling in the building is provided by over 50 rooftop units, plus additional window units in second floor areas. The combination of heating of a large space constructed using obsolete methods and excess electricity consumption by piecemeal cooling equipment results in inefficient energy usage. A small quantity of fuel oil is used on a regular basis by Terminal B's two emergency generators while being tested and exercised.

Although the building currently has few tenants, including no airlines, it continues to be used for office space by the airport, CTDOT and Connecticut State Police. A Doppler radar antenna owned by a local television station is mounted on top of the abandoned air traffic control tower, which is part of the structure. Heating/cooling and electrical service is maintained to the structure to serve these ongoing uses.

5.17.2 Impact Analysis

The No Action alternative includes demolition of the existing Terminal B and IAB structures, and eliminating consumption of gas and electricity within these buildings. As discussed in *Section 5.18*, temporary electrical service would need to be supplied to the FIS Building to facilitate demolition.

The Proposed Action is anticipated to result in decreases in energy use and improvements in energy conservation through the use of more efficient building materials and mechanical systems and consideration of sustainability in the design of the new structures.

The State of Connecticut has developed guidelines and requirements that set environmental and energy efficiency standards for State-funded facilities that are newly constructed or are undergoing major renovations (RCSA Section 16a 38k 1 through 9: The Establishment of High Performance Building Construction Standards for State-Funded Buildings). The construction of the new terminal complex is subject to this requirement, which is based on the United States Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) Green Building Rating System, Silver Rating. The State has developed supporting materials for meeting the guideline. For State agency buildings, the regulation includes numerous requirements, including that buildings be 21% more energy efficient than minimum building codes or standards, use natural daylighting, use on-site renewable energy, minimize east/west glazing, and other elements. Some of these elements may not apply to parking garage areas since they are not enclosed or heated.

Additionally, Executive Order 13123, *Greening the Government Through Efficient Energy Management* (64 FR 30851, June 8, 1999), encourages each Federal agency to expand the use of renewable energy within its facilities and in its activities. E.O. 13123 also requires each Federal agency to reduce petroleum use, total energy use and associated air emissions, and water consumption in its facilities. Additionally, FAA policies encourage the development of facilities that exemplify the highest standards of design including principles of sustainability (FAA 1050.1E, 2004).

As discussed in the Schematic Design Report (Urban Engineers, 2011), the proposed Terminal B includes a combination of passive and active energy efficiency systems. Passive systems include reducing heating and cooling loads and providing a superior thermal environment. Specific measures that will be considered in the structure design include exterior shading on areas of high solar exposure, high performance exterior envelopes, radiant floors (a component of an overall displacement ventilation system), walkoff mats, and natural day lighting. The exterior envelope system is the most important component of this group, contributing to the performance by virtue of its mass and transmission properties. The envelope must have increased thermal transfer resistance; optimized glazing ratio; a highly insulated wall with air-tight, low infiltration construction; high-performance, double or triple-pane glazing that provides sufficient daylight and views while controlling glare; and/or exterior shading where needed to ensure control of glazing that has solar heat gain or glare (Urban Engineers, 2011).

Active systems that are proposed include elements to be incorporated into the terminal building and elements included in the proposed CUP. Proposed active measures for the structure itself include:

- Dedicated outside air-handling systems (DOASs). These systems provide ventilation for the building interior via heat exchangers that pre-condition supply air with the building's ambient air, reducing the heating or cooling load.
- Photovoltaic roof systems, which may include integration of thin film panels into the building (roof) and mount hard (crystalline) cells integrated into glazed facades. These systems would generate direct current (DC) electricity that can be converted to alternating current (AC) through an inverter or a series of inverters.

The proposed CUP would also promote energy efficiency. It contains the major energy-consuming building systems that would be required to support the proposed Terminal B and would use byproduct heat to power other processes. As described in *Section 5.18*, the CUP would generate electricity for use in Terminal B, paralleling the electrical grid supply, and using the residual heat for building heating and cooling. The proposed CUP includes the following elements:

- Gas-powered engine generators.
- Fuel cells, which convert chemical energy within a fuel, such as natural gas, into usable electricity. Several fuel cell manufacturers are located in Connecticut, and several initiatives are ongoing in the State of Connecticut to promote widespread use of fuel cells. The fuel cells would be located outside adjacent to the CUP and would return heat into the CUP for use in other processes.
- Heat exchangers using high-grade byproduct heat from the engine generators and fuel cells to provide the base heating load for the proposed Terminal B building and using the low-grade (low temperature) waste heat for heating the CUP, tempering domestic water, and other purposes.
- Gas-fired boilers to supplement the base load heating provided by the byproduct heat.
- Absorption chillers, which use waste heat collected by heat recovery silencers on the engine generators to provide cooling
- Supplemental centrifugal chillers to provide additional necessary cooling

Traditional separate generation of electricity, which is currently generated for Terminal B at off-site facilities, and usable heat has a combined efficiency of 45%, and the average energy efficiency of electricity generation by utilities has remained at approximately 34% since the 1960s (Oak Ridge National Laboratory, 2008). Combined heat and power systems can operate at 80% efficiency when running at optimum heating and generation rates (Oak Ridge National Laboratory, 2008).

The combination of passive and active energy efficiency measures that are proposed as part of the Proposed Action would improve energy use and conservation compared to the existing structure, and the cogeneration plant would provide increased energy efficiency compared to current grid-generated power. As such, a beneficial impact is anticipated.

5.17.3 Mitigation

The No Action and Proposed Action alternatives are anticipated to reduce energy consumption and improve energy conservation. No adverse impacts are anticipated from the Proposed Action, and no mitigation is required.

5.18 Public Utilities and Services

5.18.1 Existing Conditions

Electrical Service

Electrical service is provided to the airport by the Northeast Utilities subsidiary Connecticut Light and Power (CL&P). There are three primary electrical services to the area of the Proposed Action, including one service to Terminal A, one service to Terminal B, and one service to the glycol recovery facility. The services to Terminal A and the glycol facility would not be affected by the Proposed Action. The current Terminal B service is provided via a 5,000 kVA, 27 kV delta primary, 4.8 kV delta secondary transformer. Electricity is distributed via an underground duct bank.

The utility service to Terminal A runs in parallel to an existing cogeneration plant. The cogeneration plant is operated by Ameresco and occupies the former Sky Chef food building near Terminal A. The cogeneration plant has been in service since approximately 2002. The plant includes four engine generators with a total capacity of 5,760 kW, as well as chillers and boilers that serve Terminal A. The cogeneration plant constantly imports approximately 200 kW power from the grid (Urban Engineers, 2010). CTDOT staff report that excess electrical capacity is available (pers. comm., CTDOT Bureau of Aviation, Chief of Engineering Services, 9/12/11).

Gas Service

Gas service is provided to the existing Terminal B via a 4-inch gas main that connects to an 8-inch gas main on Schoephoester Road. From Schoephoester Road, the main parallels the northwest wall of the existing parking garage, then turns northwest and continues along the arrivals and departures roadway to Terminal B. The main emerges from the ground and is mounted below the overhead viaduct. It then enters a utility room located below the viaduct.

Water Supply

Potable water is supplied to the airport by the Connecticut Water Company, which has multiple supply sources in north-central Connecticut (FAA and CTDOT, 2000). Water supply for domestic use and fire protection is provided by a continuous-loop water main around the facility. These mains are generally 10 inches in diameter and are adequate to meet domestic water needs. The loop feeds the Terminal A and B buildings, Sheraton Hotel, FIS Building, and related buildings. 16-inch diameter mains with more capacity are available at the Terminal A parking garage and on Trap Rock Road, feeding the private industrial facility to the south. The current water distribution system provides inadequate system pressure for firefighting flow, requiring the use of fire suppression tanks and pumps to supplement distribution system supplies. CTDOT personnel report that an existing 90,000-gallon fire suppression tank is

located in the newer portion of Terminal A and services the unified Terminal A building. Terminal B and the IAB are not sprinklered. (pers. comm., CTDOT Bureau of Aviation, Chief of Engineering Services, 6/4/12) Adequate supply and pressure exists for domestic use in the facilities located in this area.

Wastewater/Sewer

Existing sanitary sewer service to the area of the Proposed Action is provided by a 10-inch gravity sewer in the vicinity of the existing Terminal B complex that carry discharges to a sanitary sewer pump station located between the arrivals and departures roadway and the airside grounds near the FIS Building. This pump station also receives sanitary discharges from other sources to the east, including the Sheraton Hotel, the existing parking garage (Urban Engineers and STV Inc., 2011) and the Terminal A complex (FAA and CTDOT, 2000). A network of sanitary sewers to the south that once discharged to the pump station was abandoned during the expansion of Terminal A in the early 2000s to accommodate realignment of Schoephoester Road. Wastewater billing records for fiscal years 2010 and 2011 indicate that current wastewater flows from the airport are approximately 0.22 million gallons per day (MGD).

The capacity of the pump station is not known (Urban Engineers and STV Inc., 2011). Sewage received by the pump station is pumped into an 8-inch force main that carries discharges to the west to the 15-inch diameter West Bradley Trunk, which connects to the Rainbow Trunk, which in turn discharges to the Poquonock Water Pollution Control Plant. This facility, which is operated by the Metropolitan District Commission, has a 5 MGD design flow, as reported in the facility's wastewater discharge permit.

Aircraft waste products are discharged to a triturator facility that is connected to the sanitary sewer. No current data is available on the facility (Urban Engineers and STV Inc., 2010). The triturator facility is not proposed for replacement or relocation as part of the Proposed Action and is assumed to have sufficient capacity to handle existing and proposed discharges.

Stormwater

The existing stormwater drainage system in the area of the Proposed Action collects runoff from developed areas and discharges it via gravity to one of two receiving waters. The majority of the project area discharges to Rainbow Brook via twin 48-inch storm drains followed by a 66-inch corrugated metal pipe. The drainage divide between the Rainbow Brook headwaters and Seymour Hollow Brook, a small tributary of Rainbow Brook, is located at the west end of Terminal A. The airside of the existing Terminal B facility is drained via a series of trench drains totaling approximately 1,000 feet in length. Catch basins are also present on the airside. These catch basins are constructed with sumps to capture sediment. The airport Stormwater Pollution Prevention Plan shows five gross particle separators and one oil/water separator in the vicinity of the project area, which provide additional stormwater treatment (these measures are associated with Terminal A, the existing parking garage, and airside improvements near the central deicing facility and do not treat stormwater from the project area). The landside of the existing Terminal B complex and the airport roadways are served by storm drains and catch basins with sumps. Airport staff report that existing drainage capacity is sufficient during precipitation events (pers. comm., CTDOT Bureau of Aviation, Chief of Engineering Services, 9/12/11).

The existing Terminal B airside apron does not include a separate drainage collection system for glycol, which is used for deicing, following application. As discussed in *Section 3.9*, glycol, when discharged untreated to surface waters, is toxic to aquatic organisms, and the TMDL developed for Rainbow and Seymour Hollow Brooks in 1999 limits the quantity of glycol that the airport can discharge. To meet the TMDL goals, BDL has eliminated direct discharge of glycol-contaminated runoff during storm events.

The Terminal A airside apron is drained by catch basins that discharge to a system of parallel pipes, with one set dedicated to stormwater and the other for used glycol. Under normal conditions, a valve directs runoff to the stormwater pipes which discharge to receiving waters. During a deicing event, valves are used to interrupt the discharge of the runoff via outfalls, conveying the runoff to a glycol recovery system that removes excess water, allowing the remaining glycol to be shipped off-site for reclamation. Following the deicing event, the discharge glycol concentration is monitored. The diversion valves are reset and flow returned to the receiving waters when pollutant concentrations associated with the deicer materials fall to sufficiently low levels. Biochemical oxygen demand (BOD) levels of 200 mg/L, propylene glycol concentrations of 125 mg/L, and chemical oxygen demand (COD) levels of 600 mg/L are the discharge criteria used to avoid receiving water impacts.

Since the existing Terminal B airside apron is not equipped with separate glycol and stormwater management piping systems, the existing trench drains have been retrofitted to accept caps that are placed during deicing events, blocking the discharge of glycol-contaminated runoff. The runoff is then removed with vacuum and sweeper trucks and discharged to the glycol reclamation facility. Deicing activities in this location have not been undertaken since aircraft operations ceased at Terminal B.

BDL has also constructed a centralized deicing pad located south of the end of Runway 6. This pad contains catch basins that convey stormwater to the adjacent glycol recovery facility. Aircraft are deiced at this location prior to departure.

The BDL glycol recovery facility receives runoff via two glycol pump stations. One is located adjacent to Terminal A and pumps glycol toward the recovery facility, and the second is located adjacent to the recovery facility. CTDOT staff report that the storage tanks associated with the glycol facility currently fill completely during large deicing events (pers. comm., CTDOT Project Manager, Facilities Design, 9/20/11).

Stormwater discharges from the airport are regulated by a Consent Order between CTDEEP and CTDOT dated September 23, 1998. CTDOT has applied for coverage for stormwater discharges under an individual NPDES discharge permit from CTDEEP. The Consent Order requires BDL to maintain and follow a Stormwater Pollution Prevention Plan (SWPPP) that is reviewed and approved by CTDEEP to document measures and controls to prevent stormwater pollution. The SWPPP is maintained and implemented by BDL, and BDL requires airport tenants, with the exception of two United States military facilities, to implement applicable sections of the SWPPP for facilities that are under their control. The military facilities are responsible for permitting their own stormwater discharges. The airport SWPPP would be revised to reflect the new terminal complex and associated changes to the airport stormwater

drainage system. The airport would also adhere to the conditions and requirements of its NPDES discharge permit, when issued.

Jet Fuel

The airport is provided jet fuel via the Buckeye Pipeline system, which carries jet fuel from New Haven to Westover Air Reserve Base in Chicopee, Massachusetts. A bulk jet fuel storage facility located southwest of the project area receives jet fuel from the pipeline, where it is stored in one of several tanks for use by the airport. A buried pipe carries jet fuel from the bulk storage facility to the central fueling facility located east of Terminal A.

5.18.2 Impact Analysis

Electrical Service

The No Action alternative, which includes the demolition of the existing Terminal B, would impact existing electrical service to the FIS Building, which passes through Terminal B. Temporary electrical service for the FIS Building would be established prior to undertaking the Terminal B demolition to avoid impacts.

The electrical demand of the new terminal complex would be met through public service provided by CL&P and a new cogeneration plant (the Central Utility Plant, CUP) running in parallel. The CUP would meet the electrical demand of the new terminal during typical conditions. The Schematic Design Report includes a projected electrical load, which was estimated based on National Electrical Code (NEC) volt-ampere/square foot unit loads (Urban Engineer and STV Inc., 2011). These estimates are presented in *Table 5-25*.

Table 5-25. Electrical Load Tabulation

Description	Unit load (VA/sf)	Total Connected Load (kVA)
Lighting	2	1,029
Receptacles	1	515
Elevators	N/A	300
Equipment	3	1,544
Miscellaneous	1	515
HVAC	7.5	3,860
Subtotal		7,763
Spare	15%	1,164
Total		8,928

The proposed CUP would provide service parallel to public utility service to meet the anticipated loads. The use of three 2,846 kW gas-powered engine generators that can supply a combined 8,538 KW is proposed, which would exceed typical electrical load requirements. These generators are capable of load cycling to match the terminal load profile. Fuel cells are also proposed as part of the CUP to provide electrical base load. The quantity and type of fuel cells would be determined during the detailed design phase. The parallel utility service would include a new 27 kV delta primary and a 4.8 kV delta secondary transformer that would be provided by CL&P to meet the load requirements. It is anticipated that a 10,000 kVA transformer would be appropriate. This is approximately twice the load rating of the existing service as discussed earlier in this section.

The existing electrical duct bank and manhole system that serve the existing Terminal B would be relocated to accommodate the proposed terminal, airside apron, and landside improvements. The proposed 5 kV electrical service would extend from the CL&P transformer to entrance switchgear. The entrance switchgear would include one incoming fused switch and two feeder switches. One of the outgoing switches would extend service to the primary 5 kV switchgear, which would be used to serve six load center unit substations. Each load center unit substation would serve a designated area. The second switch would be used to provide a connection from the CUP.

CTDOT personnel indicate that one of the four engine generators in the existing Terminal A cogeneration plant is not currently necessary to meet facility demand (pers. comm., CTDOT Bureau of Aviation, Chief of Engineering Services, 9/12/11). This generator may be available to provide electrical service to the proposed parking lot/ConRAC facility. In this case, the parking garage/ConRAC facility electrical service would be connected to the Terminal A electrical service instead of the proposed Terminal B service. This option would be considered during the project detailed design phase.

Gas Service

Gas service would be relocated to accommodate demolition of the existing viaduct and Terminal B as part of the No Action alternative. The Proposed Action includes extension of gas service to the CUP, which would be its primary location of use. Natural gas service would be developed and metered per the local utility requirements (Urban Engineers and STV Inc., 2011).

Water Supply

The No Action alternative requires disconnection of the existing water service from the existing structure but is unlikely to require relocation of buried water mains. The existing water service network surrounding Terminal B would be modified as part of the Proposed Action, including relocation of the existing lines and any increases in capacity to accommodate the new construction. As part of the detailed design phase for the project, additional flow testing would be performed to verify the current pressure and flow capacities of the system. A 90,000-gallon bladder-type fire storage tank is the preferred option for fire suppression and evaluation of the need for fire pumps would be conducted to ensure the fire suppression system is code compliant (Urban Engineers and STV Inc., 2011). The proposed water service would be oriented around the airside of the new Terminal B. It would likely consist of separate domestic

and dedicated fire service loops with fire hydrants and valves located at 300-foot intervals. Building fire suppression system service would tie into the fire service loop.

Wastewater/Sewer

The No Action alternative requires disconnection of the existing Terminal B and IAB sewer service from the sewer collection system but is unlikely to require relocation of sanitary sewer mains.

Under the Proposed Action, a new sanitary sewer main would be constructed to receive wastewater discharges from the proposed Terminal B, running along the airside portion of the facility and below the proposed concourses to shorten the length of piping required. Existing sanitary sewer lines to the south would be realigned to avoid the footprint of the proposed terminal and the parking garage/ConRAC facility.

The existing airport sanitary pump station would remain in service until a new triplex pump station is completed and operational, at which point the existing station would be demolished. The new pump station would serve the proposed Terminal B, the parking garage/ConRAC facility, the existing parking garage, and the Terminal A complex. Since no documentation of the capacity of the existing pump station is available, a detailed sewer analysis will be performed in subsequent design phases to determine existing contributing discharges, estimate pump station design flows, and confirm the capacity of the force main.

No changes to the existing triturator facility are anticipated to be necessary.

Stormwater

The No Action alternative is not expected to adversely impact the stormwater collection system. The Proposed Action consists of redevelopment of a heavily developed area. Impervious cover in the project area may actually decrease as a result of the elimination of surface parking lots (Urban Engineers and STV Inc., 2011). The peak rate and quantity of stormwater discharge following construction of the Proposed Action are anticipated to be similar to existing conditions. Therefore, the existing storm drainage system downgradient of the project area is believed to have sufficient capacity to accommodate drainage from the proposed terminal complex and associated redevelopment.

The existing landside stormwater system would be realigned and coordinated with the new roadway and parking garage/ConRAC layout and configuration. The existing airside stormwater system would be modified and coordinated with the new terminal configuration, new aircraft parking positions and new apron grading. Existing lines within the proposed building footprints and/or the proposed roadway would be removed or abandoned in place, as appropriate, to accommodate the new construction.

The existing twin 48-inch and 66-inch storm lines that run north to south are believed to have sufficient capacity to handle the proposed roadway and infield runoff. An existing 60-inch and 30-inch storm line under the exit roadway opposite the glycol storage tank area would be extended. The 60-inch storm line under the existing exit ramp would be extended to accommodate the relocated Schoephoester Road. Proposed storm lines would be sized to accommodate the proposed Terminal B and parking garage/ConRAC roof drainage, roadway

system, and infield drainage areas. Detailed drainage calculations would be performed during the design development phase. Further evaluation and design of the proposed stormwater management measures would occur during the design development phase to address stormwater quality and quantity requirements.

Unlike newer drainage systems associated with Terminal A, the parking garage, and airside improvements near the central deicing facility, the existing stormwater drainage system in the project area includes no stormwater quality controls beyond the separate glycol collection and treatment system and deep sump catch basins. The stormwater management design would be consistent with the *CTDOT 2002 Drainage Manual*, as amended, the *CTDEEP 2004 Connecticut Stormwater Quality Manual*, as amended, and Connecticut's *High Performance (Green) Building Standards for State Agency Buildings and School Buildings*.

The airside apron of the proposed Terminal B would include separate stormwater and glycol collection pipes in a similar manner to the Terminal A airside apron, allowing runoff to be directed to the glycol reclamation facility during a deicing event and to the receiving waters when deicer concentrations are below acceptable levels. The glycol reclamation facility may not have adequate capacity to collect and treat the additional runoff generated from the glycol collection system proposed as part of the new terminal. The capacity of the system would be evaluated during subsequent design phases. The facility may be expanded, if necessary, either through construction of additional storage tanks, increasing the processing capacity, or a combination of the two.

Stormwater from the parking garage associated with the parking garage/ConRAC facility would be managed following CTDEEP's parking structure drainage policy. Under the policy, runoff from the top deck, which receives a high quantity of direct precipitation, is required to be treated for sediment and oil and grease, such as in a gross particle separator, prior to discharge to a storm sewer system. This discharge must also meet the requirements of the *2004 Connecticut Stormwater Quality Manual*, as amended.

Drainage from lower decks must be collected and treated in an oil-water separator with a capacity of at least 1,000 gallons, and then discharged to the sanitary sewer system. The oil-water separator must be cleaned by a licensed waste oil hauler at least once per year. Additionally, washing the floors of the lower levels is eligible for coverage under the *General Permit for Miscellaneous Discharges of Sewer Compatible Wastewater* as building maintenance wastewater, although registration is required if greater than 5,000 gallons per day of wash water are generated.

Jet Fuel

The No Action alternative would not result in impacts to jet fuel supplies. As part of the Proposed Action, the airport is considering construction of a hydrant fueling system for Terminal B that would allow aircraft to fuel directly at the terminal gates, eliminating the need to use trucks to transfer fuel (pers. comm., Urban Engineers, 8/26/2011). This change in operation is anticipated to reduce the potential for spills during fueling by reducing the number of fuel transfers. If a hydrant fueling system is not constructed as part of the Proposed Action, aircraft at the proposed Terminal B would be fueled by trucks following existing practices. The trucks would either be filled at the existing centralized fueling facility or at a new facility with

more convenient access to Terminal B. Construction of a new fueling facility would be performed in accordance with applicable regulatory requirements.

5.18.3 Mitigation

Electrical Service

Although the required utility service for the proposed Terminal B is approximately double the size of the existing service, the improvements to electrical service included in the preliminary engineering report and draft schematic design report are expected to ensure that adequate service is available. Additionally, the CUP would meet typical demands of the facility and could be used to reduce grid demands during peak usage periods. Therefore, no mitigation is required.

Gas Service

Adequate gas service would be developed as part of the proposed project; no mitigation is anticipated to be necessary.

Water Supply

Adequate water service is available at the location of the proposed Terminal B to meet domestic water needs, and construction of an appropriate storage tank and fire pump would meet firefighting demand. Therefore, no mitigation is necessary.

Existing and projected water demand for the airport and projected water demand associated with the Proposed Action will be evaluated in more detail during the design development phase.

Wastewater/Sewer

Adequate wastewater service is available in the project area. The proposed replacement pump station and sewer system upgrades will be designed to address any remaining capacity issues identified during detailed design. Therefore, no further mitigation is anticipated to be required.

Existing and projected wastewater flows for the airport and projected wastewater flows associated with the Proposed Action will be evaluated in more detail during the design development phase.

Stormwater

The Proposed Action is not expected to result in increases in impervious cover or stormwater runoff and includes construction of a dedicated system to collect and treat deicer runoff, which previously did not exist for the project area. The proposed stormwater quality measures for addressing runoff from the parking garage/ConRAC facility, as well as other stormwater treatment measures that may be required by the *2004 Connecticut Stormwater Quality Manual*, as amended, and *High Performance (Green) Building Standards* may improve the quality of stormwater discharges compared to existing conditions. As a result, no additional mitigation measures are anticipated to be needed.

Jet Fuel

No adverse impacts to jet fuel supplies are anticipated; no mitigation is necessary.

5.19 Public Health and Safety

5.19.1 Existing Conditions

Emergency Preparedness

BDL maintains an emergency preparedness plan called the Airport Emergency Plan (AEP), which was approved by the FAA on May 03, 2005. A new AEP is currently being reviewed by the FAA for approval. The AEP is not a public document and was unavailable for review as of the writing of this report.

Public Safety and Emergency Services

The BDL Aircraft Rescue and Fire Fighting (ARFF) unit responds to all life, health safety, and aircraft incidents within the airport's boundaries. Currently there are two ARFF stations located at BDL. The first ARFF station is located near the threshold of Runway 33. This station is the main ARFF facility and was recently constructed in 2000. The second ARFF is located north of Runway 6/24 and serves as a secondary station. As of the 2005 Master Plan Update, there were approximately 14 ARFF vehicles in operation at BDL.

The Connecticut State Police (CSP Troop W), located within the airport property, handles all of the airport's police response situations. CSP Troop W is also routed all 9-1-1 calls made on the BDL property. The Transportation Security Administration (TSA) performs all Federally-mandated passenger screenings at BDL.

BDL has mutual-aid agreements with all four surrounding communities and the Connecticut Air National Guard (CTANG) for supplementary emergency assistance, as necessary.

A comprehensive security system exists at BDL including an access card system, photo identification (badges obtained after a background review and fingerprinting), and security cameras. This system is designed to prevent unauthorized persons from entering secure areas of the airport and to identify and respond to any security breaches if they occur.

Health Services

Saint Francis Hospital and Medical Center (Saint Francis) and Hartford Hospital are the two closest emergency providers to the airport at 11 miles and 12 miles away, respectively. Saint Francis is a 617-bed facility. It is one of the largest hospitals in Connecticut that provides emergency care services (Saint Francis, 2011). Hartford Hospital provides the only Level 1 Trauma Center in the region and operates the State's only air ambulance system (Hartford Hospital, 2011).

Restaurants and water and sewer systems at the airport are inspected by the North Central District Health Department to protect public and environmental health. The BDL ARFF Fire Marshalls work with State Fire Marshalls to inspect facilities for life safety concerns. BDL also employs in-house engineers and a Maintenance Department that work with State Inspectors regarding building/construction code issues.

5.19.2 Impact Analysis

The No Action alternative would not result in any anticipated direct or indirect impacts to the demand for or provision of public health and safety services in the area.

Emergency Preparedness

Under the Proposed Action, emergency preparedness would be ensured through the implementation of the existing measures and systems described in the Airport Emergency Plan. The proposed terminal and other facilities would be designed to provide for rapid patron evacuation and rapid emergency response personnel access for potential emergency scenarios.

Public Safety and Emergency Services

Under the Proposed Action, it is expected that the on-site CSP Troop W, ARFF, and TSA would address on-airport emergencies. There is believed to be adequate personnel and equipment to respond to routine and emergency calls at the project site (Parish, pers.comm, September 30, 2011).

Health Services

The Proposed Action is not expected to result in activities that would place an increased demand on hospitals or other health services in the area.

5.19.3 Mitigation

No direct or indirect adverse impacts to public health and safety services are anticipated. Therefore, no mitigation is necessary or proposed.

5.20 Demolition and Construction Period Impacts

The Proposed Action is the construction of a new passenger terminal in the area occupied by the existing Terminal B at Bradley International Airport (BDL) in Windsor Locks, Connecticut. A new Terminal B and associated airside and landside improvements would be constructed following demolition of the existing Terminal B complex.

Demolition of Terminal B was identified as part of the Proposed Action in the 2000 EA/FONSI. Alternatives to and analysis of potential environmental impacts associated with the Terminal B demolition were addressed in the 2000 EA/FONSI. Nevertheless, a revised summary of the demolition impacts are discussed in this section, as demolition is included under the No Action alternative in this document.

5.20.1 Impact Analysis

Traffic

Under the No Action alternative, the demolition of Terminal B and the associated viaduct would require the construction of a new connection down to the at-grade arrivals roadway. It is

anticipated that the arrivals roadway could maintain its current alignment after the demolition of the terminal complex.

Under the Proposed Action, construction of the Terminal B Arrivals/Departures Roadway and the realignment of Schoephoester Road would result in minor impacts to traffic circulation during the construction period. Construction of the new Terminal B as well as the parking garage/ConRAC facility would require the demolition of a significant portion of the existing roadway network. Therefore, construction of the new roadways must be complete before building construction can occur. The demolition of Terminal B and the associated viaduct would require the construction of a new temporary roadway until construction of the new viaduct is complete.

Considerations Relating to Pedestrian, Bicycle, and Transit Access

Construction impacts under either the No Action or Proposed Action alternatives within the project area are expected to minimally impact the pedestrian and bicycle environment outside of the project area. Transit routes and service may be disrupted by road closures and realignments as they occur.

Parking

Under the No Action alternative, it may be necessary to designate a portion of Lot 2 as a construction staging area during the demolition of Terminal B. This would not impact parking based on current estimates of demand, provided that at least 50% of the parking lot remained open for parking.

Under the Proposed Action, construction of the new Terminal B Arrivals/Departures Roadway would require the demolition of the existing surface Lot B, west of the existing parking garage. This would result in a temporary reduction in long-term and employee parking until the new parking garage/ConRAC facility is completed. It is expected that this would result in an additional demand of up to 550 parking spaces in other surface parking lots.

Air Quality

Potential construction air quality impacts can occur due to the use of diesel-powered construction vehicles. Diesel air emissions include carbon monoxide, hydrocarbons, nitrogen oxides, and particulate matter (PM10 and PM2.5). Emissions from construction equipment are anticipated to be significantly less than the total emissions from existing industrial and transportation sources in the region, and therefore, are expected to be insignificant with respect to compliance with the NAAQS. However, potentially localized air quality impacts could occur as a result of diesel exhausts from construction equipment in the vicinity of the project area.

Roadway traffic disruption due to lane closures, detours, and construction vehicles accessing the site can cause congestion which can increase motor vehicle exhaust emissions. Significant disruptions are not currently anticipated, but would be mitigated by implementing appropriate traffic management measures, as necessary.

Fugitive dust emissions can occur during ground excavation, material handling and storage, movement of equipment at the site, and transport of material to and from the site. Fugitive dust

is most likely to be a problem during periods of intense activity and would be accentuated by windy and/or dry weather conditions.

Noise

Construction activities are a potential source of short-term noise impacts, which can include both continuous and intermittent noise being received by nearby receptors. It is difficult to reliably predict the sound levels that may occur at a particular receptor or group of receptors as a result of construction activity. Heavy construction equipment is the principal source of noise during construction activity, and the pattern of heavy equipment use is constantly changing as a construction project progresses. *Table 5-26* presents noise levels generated from selected construction equipment that may be present as part of the proposed project (FTA, 2006).

Table 5-26. Typical Noise Levels From Construction Equipment

Equipment	Typical Noise Level (dBA) 50 Feet From Source
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Mobile	83
Dozer	85
Generator	81
Jack Hammer	88
Loader	85
Rock Drill	98
Saw	76
Shovel	82
Spike Driver	77
Truck	88

In general, sources of noise grouped close together constitute a point source, which have been shown to attenuate by approximately 6 dBA for each doubling of distance (FTA, 2006). The nearest noise-sensitive uses are greater than 0.5-miles from the Terminal B demolition and construction area, including the roadway construction. This distance is greater than 5 doublings of the 50-foot noise measurement distance presented in the table, or equivalent to a greater than 30 dBA reduction in noise level. The loudest anticipated noise during construction is from a truck at 88 dB, which at a distance of greater than 0.5-mile would be reduced to less than 58 dB.

Construction noise is exempt under 22a-69-1.8(g) of the Connecticut Regulations for Control of Noise due to the temporary nature of construction-related noise.

Stormwater and Water Quality

Activities that result in the disturbance of stabilizing groundcover, including pavement, buildings, landscaping, and natural vegetation, can leave soil exposed and subject to erosion. Eroded soil that is carried by stormwater can discharge to surface waters, resulting in sediment deposition and potential adverse impacts to water quality and aquatic habitat.

Soils may be exposed to precipitation during the majority of the construction period, from clearing and grubbing through stabilization of the site. The airport would develop and implement erosion and sediment controls consistent with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, as amended, to reduce the potential for soil erosion and sedimentation during construction. The airport would also obtain coverage under the CTDEEP *General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities*, as amended, and develop and implement a Stormwater Pollution Control Plan in accordance with the general permit and the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, as amended. The project design will also adhere to the guidelines contained in the CTDEEP *2004 Connecticut Stormwater Quality Manual*, as amended.

Vegetation, Wildlife, and Threatened and Endangered Species

Because of the presence of State-listed grassland bird species on the airport property, potential short-term, indirect impacts to these species could occur due to construction activity.

Solid Waste, Toxics, Pesticides, and Hazardous Materials

Under the No Action alternative, demolition of the existing Terminal B would result in a significant quantity of demolition debris that would be managed in accordance with applicable regulations, including disposal of materials at licensed solid waste facilities. Since the structure was constructed in the 1950s, the potential exists for asbestos-containing materials to be present. If disturbed, friable asbestos could be inhaled by workers or the public near the site during construction or released to soil or groundwater. Other hazardous regulated materials could potentially be present, including solvents, lights, ballasts, thermostats, and other similar items.

Construction machinery, fuels, maintenance fluids, paints, solvents, and other hazardous or toxic construction materials may be present during the construction period, with potential for exposure to workers and the public. Construction debris consisting primarily of concrete, asphalt, wood, glass, and sheetrock would be generated during construction activities and the realignment of roads. Wastes that cannot be reused would be hauled off-site and disposed of at a CTDEEP-approved landfill.

Concrete surrounding existing transformers and in locations where transformers have historically been located should be sampled prior to construction to determine whether it has been impacted by PCBs. PCBs detected at a concentration greater than a threshold of 50 ppm would require cleanup under the Federal Toxic Substances Control Act (TSCA) regulations.

Given the presence of the jet fuel plume beneath portions of the adjacent Terminal A, contaminated soils and/or groundwater may have migrated beneath the eastern portions of the project area. Contaminated soil and/or construction dewatering wastes may result from the proposed construction. A soil management plan would be implemented during the construction period to guide the handling and disposal of any contaminated materials resulting from excavation. Dewatering wastes would be regulated under the CTDEEP *General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities*. Contaminated material resulting from construction would be disposed of in compliance with State and Federal regulations.

Additionally, USTs are located within the proposed project area and would be relocated or removed as part of the proposed project. UST closure and/or removal would follow applicable State and Federal regulations and be performed by qualified personnel.

Utilities

The No Action alternative would require utility relocation to accommodate the planned demolition of the existing Terminal B complex. Affected utilities include:

- Electrical service to the FIS Building passes through the existing Terminal B. Temporary electrical service to the FIS Building would need to be established if it is to remain in service following demolition of Terminal B.
- The airfield lighting system is located within Terminal B, although it is scheduled to be relocated during late 2011.
- Gas service would be relocated to accommodate demolition of the existing viaduct and Terminal B building since it is currently carried by the viaduct supports.

Additionally, the No Action alternative would require disconnection of the existing Terminal B structure from existing water service and sewer collection piping.

The Proposed Action would require temporary electrical service to the project area during construction. Adequate utility service is available in the project area to facilitate construction activities. Planned, temporary electrical outages may be required to connect new construction to existing services. Additionally, sewer, water, stormwater, and glycol service lines would be relocated to accommodate the proposed construction. The jet fuel pipeline would not be affected by construction.

5.20.2 Mitigation

Traffic

Traffic management would be necessary during construction to maintain efficient traffic circulation in and around the project area. This mitigation would include appropriate construction phasing to minimize disruptions to traffic and access, establishing haul routes and staging areas, permissible hours of work, uniformed officers, and other traffic controls to direct traffic and assist with pedestrian crossings as needed.

As part of the semi-final design process for the roadways, detailed traffic management plans would be prepared providing further detail as to the specific maintenance and protection of traffic. Access to the existing terminal roadways and parking garage would be maintained during the operating hours of the airport. It is expected that any temporary roadway closures and traffic pattern changes would be scheduled to occur during limited overnight periods when traffic on the airport roadways is light.

Considerations Relating to Pedestrian, Bicycle, and Transit Access

Within the project area, if walkways and sidewalks must be narrowed to provide a safe distance between pedestrians and construction equipment, clear paths of a minimum of six feet in width should be maintained at all times to accommodate people, particularly those with luggage or in

wheelchairs. Construction equipment, temporary kiosks, and other project-related items should be located outside of the pedestrian travelway to avoid impeding traffic flow. Alternative but convenient transit route patterns should be identified.

Parking

It is recommended that Economy Lots #5A & 5B be reopened for general use during the construction period, until such time as the new parking garage/ConRAC facility is complete. This would require the restoration of frequent service for the airport parking shuttles that presently serve the other Economy Lots. Employees currently parking in Lot 2 would be required to park in Employee Lot 5C, which has sufficient capacity to accommodate the additional demand.

Air Quality

Potential air quality impacts from diesel exhausts would be addressed through the proper operation and maintenance of construction equipment, and prohibition of excessive idling of engines. Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies limits the idling of mobile sources to 3 minutes.

Additionally, CTDOT would consider requiring diesel powered non-road construction equipment to include retrofit emission control devices or to use clean alternative fuels to reduce diesel emissions, or both. In general, these requirements would apply to diesel powered non-road construction equipment with engine horsepower ratings of 60 that would be used on the project or assigned to the contract for a period in excess of 30 consecutive days.

CTDOT Standard Specifications for Roads, Bridges, and Incidental Construction (Form 816, 2004) requires contractors to control and abate dust and other potential air pollutants (Section 1.10.04). Potential air quality impacts from fugitive dust would be addressed through the following mitigation measures:

- Reducing exposed erodible earth area to the extent possible through appropriate construction phasing.
- Stabilization of exposed earth with grass, pavement, or other cover as early as possible.
- Application of stabilizing agent (i.e., calcium chloride, water) to the work areas and haul roads.
- Covering, shielding, or stabilizing stockpiled material as necessary.
- Use of covered haul trucks.
- Limiting dust-producing construction activities during high wind conditions.
- Rinsing of construction equipment with water or any other equivalent method to minimize drag-out of sediment by construction equipment onto the adjacent roads.
- Street sweeping of roads within construction areas.

Noise

Potential noise impacts during construction would be addressed through the following mitigation measures, which would be incorporated into the contract specifications for the project:

- Restriction of work to 7:00 AM to 9:00 PM local time. Although construction noise is exempt under the Connecticut Noise Regulations (22a-69-1 through 22a-69-7.4), those hours of work which are specified for lawn maintenance equipment provide a reasonable estimate of acceptable work hours.
- Proper maintenance of equipment, and advance notification of nearby sensitive receptors of activities that may produce excessive sound levels.
- The Connecticut Department of Transportation standard specification for noise pollution (Form 814A, Section 1.10.05), which states that the maximum allowable level of noise at the residence or occupied building nearest to a project site shall be 90 decibels on the "A" weighted scale (dBA).

Stormwater and Water Quality

Development and redevelopment projects that disturb one or more total acres of land are required to obtain coverage under the CTDEEP *General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities*. This general permit requires that the applicant develop and implement a Stormwater Pollution Control Plan in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*, as amended. Implementation of controls in accordance with the general permit and the guidelines would minimize the potential for construction-period impacts to stormwater and water quality. The project design will also adhere to the guidelines contained in the CTDEEP *2004 Connecticut Stormwater Quality Manual*, as amended.

Vegetation, Wildlife, and Threatened and Endangered Species

Best management practices would be developed in consultation with the CTDEEP Wildlife Division to minimize disturbance to State-listed species during construction. Typical best management practices would include maintenance of a buffer zone between nesting sites and construction activity, time of year restrictions on construction activity, and restriction of construction activities to paved areas.

Solid Waste, Toxics, Pesticides, and Hazardous Materials

The project design should address anticipated environmental conditions and construction activities, investigate remaining concerns, if any, and avoid increased risk to human health and the environment. Procedures for contractor health and safety, temporary waste stockpiles, polluted soil management, and dewatering activities should be developed.

A Soil Management Plan should be developed for the project to address potentially-contaminated soil encountered during construction. The plan would include provisions for the sampling, analysis, stockpiling, transportation, and disposal of potentially-contaminated soil. The plan would be consistent with the CTDEEP Guidance for Utility Company Excavation.

Construction and excavation activities should be performed in accordance with the CTDEEP *General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer)*. It is unknown whether groundwater at the subject site has been impacted by hazardous material and/or petroleum products. Discharge of uncontaminated dewatering water may be covered under the CTDEEP *General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction*

Activities. Discharge of contaminated groundwater to the sanitary sewer or surface waters would require a separate approval from CTDEEP.

Pre-demolition surveys would be performed for asbestos containing materials (ACM) prior to demolition. Written notice would be submitted to the Connecticut Department of Public Health (CTDPH) prior to demolition in accordance with RCSA Section 19a-332a-3 for buildings involving more than 10 linear feet or more than 25 square feet of ACM.

Demolition of the existing structures would generate a significant quantity of construction and demolition debris. The material would be segregated on-site and reused or recycled to the extent possible and the remainder disposed in a landfill. Disposal of ACM or other regulated wastes generated during demolition and construction activities would also require a CTDEEP *Special Waste and Asbestos Disposal Authorization*.

Construction machinery, fuels, maintenance fluids, paints, solvents, and other hazardous or toxic construction materials may be present at the site during construction. These materials would be managed following appropriate best management practices, regulatory programs, and manufacturer recommendations to avoid potential impacts.

Safety

Measures would be undertaken by CTDOT and the project contractor to avoid safety impacts during construction. Potential measures include:

- Using backup alarms on construction equipment
- Providing police details for directing traffic around construction equipment
- Providing safety cones and barrels indicating temporary roadway hazards
- Providing alternative routes for traffic and pedestrians
- Providing a continuous, accessible path of travel around or through construction
- Placement of effective barriers
- Ensuring that workers are properly trained in airport safety requirements and that required procedures are followed

Utilities

If planned electrical outages are required, CTDOT and/or the contractor would coordinate with the electrical utility and affected customers to minimize disruptions. Existing utilities would be relocated, maintained, and/or protected from disturbance or damage during construction in accordance with the requirements of each utility operator.

5.21 Secondary and Cumulative Impacts

CEPA and NEPA regulations require that the sponsoring agency consider the secondary and cumulative impacts of its actions, in addition to direct impacts. Secondary or indirect impacts are effects of an action that are removed in time or distance from the action itself. Cumulative impacts are those that result from the incremental impact of a project when added to other

past, present, or reasonably foreseeable future actions, regardless of the proponent of those actions.

5.21.1 Secondary Impacts

There are two primary types of secondary or indirect effects – induced growth (or growth influencing) and encroachment-alteration. Effects related to induced growth resulting from an aviation project are usually associated with an increase in airport capacity, which is generally directly related to the number and configuration of runways. Neither the No Action nor Proposed Action alternatives would result in a change to the number or configuration of runways at BDL. Consequently, no change to airport capacity is anticipated under either alternative.

As described in *Sections 5.1 and 5.2* of this EA/EIE, the airport area is recognized at the regional and state level as an Economic Development Area of Regional Significance (CRCOG, 2009), and the local communities recognize the opportunity to capitalize on the airport's presence for economic growth that is complementary with existing land use and zoning. Therefore, growth and development in the geographic area surrounding the airport is likely to occur regardless of the Proposed Action. Short-term secondary economic benefits are anticipated during the construction period as a result of construction-related employment and associated expenditures in the local area.

Indirect or secondary effects associated with encroachment-alteration can result in long-term degradation to a resource. Given the elements of the Proposed Action, the greatest potential for secondary encroachment-alteration effects are on traffic, air quality, and water quality. As described in *Section 5.3*, traffic volumes at intersections within the airport are expected to change under the Proposed Action as a result of the construction of the parking garage/ConRAC facility. Potential indirect effects (i.e., the anticipated effects at local intersections in the surrounding area and through the project horizon of 2028) resulting from the parking garage/ConRAC are considered in the traffic impact analysis described in *Section 5.3*, and no significant indirect effects on traffic are anticipated based on the analysis. Given proper maintenance of the stormwater drainage system and the stationary air pollutant sources resulting from the Proposed Action, no encroachment-alteration type indirect effects on water or air quality are anticipated.

5.21.2 Cumulative Impacts

Cumulative Impact Analysis Topics

Potential cumulative impacts can occur to those resources for which direct or indirect impacts from the Proposed Action are anticipated. The following resources were considered in the cumulative impacts analysis based on the direct and indirect impacts identified in previous sections of this EA/EIE. None of these direct and indirect impacts are anticipated to be significant, and several are reduced or offset by mitigation.

- Wetlands – Direct impacts to between 0.09 and 0.28 acres of regulated wetlands

- Traffic – Slight increases in traffic associated with the construction of the parking garage/ConRAC facility
- Demolition and Construction Period Impacts
 - Traffic – potential temporary disruptions to traffic in the immediate project area
 - Air and Noise – potential air quality impacts associated with emissions from construction equipment and fugitive dust, and potential construction-related noise impacts

Cumulative Impacts Analysis Area

The cumulative impacts analysis considers the geographic area within which previous or reasonably foreseeable future (i.e., planned and programmed) projects would be expected to have a cumulative effect in combination with the Proposed Action. Geographic boundaries of the resources that may be affected by direct or indirect impacts of the Proposed Action were reviewed to select an appropriate boundary for each resource category in the cumulative impacts analysis. These boundaries are presented in *Table 5-27*.

Table 5-27. Cumulative Impacts Analysis Area

Resource	Geographic Area
Traffic	Intersections immediately surrounding the project area, providing access to the airport
Wetlands	Rainbow Brook Watershed
Demolition and Construction Period Impacts:	
Traffic	Intersections in the immediate vicinity of the terminal complex
Air and Noise	Area immediately adjacent to or downwind of the project area

Cumulative Impacts Analysis Timeframe

The timeframe for analysis of cumulative impacts for traffic and wetlands begins with airport construction in approximately 1940, extends to the existing conditions as of 2011, when the majority of field investigations and data collection for this document were performed, and ends in 2028, which is the selected horizon year for the proposed project. The existing conditions for traffic and wetlands reflect the response to prior impacts and implicitly incorporate prior activities that may have contributed to cumulative impacts. Nevertheless, prior impacts are described in more detail below to assess their contribution to cumulative impacts to a particular resource. Major airport activities that have contributed to cumulative impacts are summarized in *Table 5-28*. The analysis timeframe for demolition and construction period impacts is limited to the construction period, which is anticipated to begin in 2012, with the first phase completed in 2018 and the entire project completed by 2028.

Table 5-28. Major Airport Events

Date	Event
1940-1941	Land acquired by State of Connecticut and turned over to U.S. Army for airfield construction
1947	Airfield begins civilian use
1950	Airport exceeds 100,000 passengers per year
1952	Murphy Terminal (Terminal B) opened
1950	Airport exceeds 500,000 passengers per year
1961	Bradley Connector opens
1971	International Arrivals Building opens
1986	Terminal A and Sheraton Hotel opens
2001	Construction of Parking Garage and terminal A expansion begins
2002	Terminal expansion (East Concourse) opens

Reasonably Foreseeable Future Actions

Relevant reasonably foreseeable future actions for this analysis include those actions that are likely to affect the resources listed in *Table 5-27*, within the geographic areas specified.

Development activity within the Rainbow Brook watershed that has the potential to impact wetlands would be relevant for analysis of cumulative impacts to wetland resources. Land use in this area is dominated by roadways and existing industrial development. Relatively little land appears available for new development, and no planned redevelopment activities have been identified in the watershed, other than actions associated with the Proposed Action.

Development in the local area also has the potential to result in additional impacts on traffic. Although no specific development projects were identified that would impact traffic in the immediate vicinity of the airport, the area surrounding the airport, particularly along Route 20 and Route 75 and to the north and west of the airport, is zoned for commercial and industrial land use and associated development. As described in *Section 5.3*, reasonably foreseeable background growth, as determined by the CTDOT Bureau of Policy and Planning, is included in the traffic impact analysis future traffic volumes.

Airport capital plan projects planned for the period 2012-2017, other than the Proposed Action, consist primarily of roadway repairs, ongoing Noise Compatibility Plan implementation, taxiway rehabilitation, and scheduled equipment maintenance and replacement (Bruno, personal communication, 2011).

The Airport Master Plan Update (PB Aviation, 2005) identified potential impacts to wetlands, floodplains, biotic communities, and threatened and endangered species as a result of the recommended capital improvement projects over the 2002-2022 timeframe. Impacts to wetland

resources, the only resource topic with potential for cumulative impacts associated with the Proposed Action, include the Perimeter Road on the north/northwest side of the airport, development of a new air cargo facility at the end of Runway 15, and improvements to the Connecticut Air Museum. The Perimeter Road project has been postponed with no anticipated start date identified (Bruno, personal communication, 2011); an additional hanger has already been constructed at the Connecticut Air Museum; and the development at the end of Runway 15 is currently underway. Furthermore, none of these projects are located within the Rainbow Brook watershed.

Potential Cumulative Impacts

Wetlands

Historically, the Rainbow Brook watershed has been impacted by roadway and commercial/industrial development and stormwater runoff (CTDOT, 2000). According to the total maximum daily load (TMDL) developed for Rainbow Brook (CT DEP, 1999), wetland impact dates back to the initial construction of the airport. The headwaters of Rainbow Brook originated in wetlands that were, for the most part, filled and graded for airport construction. A review of data from the University of Connecticut Center for Land Use Education and Research (CLEAR) and aerial photographs dating back to 1934 shows the conversion of the Rainbow Brook watershed from mostly undeveloped to approximately 80% developed in 2010. Based on estimates from the CLEAR data and aerial photos, approximately 70% of that conversion took place between 1934 and 1990, and an additional 8-10% of the watershed has been developed from 1990 to 2010 (*Figure 5-21 to Figure 5-24*). Although the area of direct and indirect impact to wetlands cannot be accurately quantified from the available historic information, it is reasonable to assume that both direct and indirect impacts to wetland in the Rainbow Brook watershed occurred since 1934 and the current status of the wetlands in the watershed reflects the effects of those prior actions.

According to CTDEEP and National Wetlands Inventory mapping (U.S. Fish and Wildlife Service, 2011), other wetland areas in the Rainbow Brook watershed exist outside of the airport property, along the stream corridor from the Bradley Airport Connector to the confluence with the Farmington River. The Proposed Action would result in impacts to wetlands and watercourses in the Rainbow Brook watershed, although the extent of wetland impacts would depend on the final roadway configuration. Other on-going or reasonable foreseeable actions at the airport do not involve disturbance in the Rainbow Brook watershed. The industrial/commercial land in the watershed is dominated by the existing Hamilton Sundstrand campus. Future development within the watershed is unlikely, and no plans for development or redevelopment have been identified at this time.

Impacts from the Proposed Action would be mitigated through the state and federal wetlands permitting process. Future private development outside of the airport would be subject to local inland wetlands and watercourses permitting and potentially subject to federal wetlands permitting. In general, these wetland permitting requirements and mitigation, considered collectively with the wetland mitigation required for the Proposed Action, would prevent or mitigate potential cumulative impacts to wetland resources.

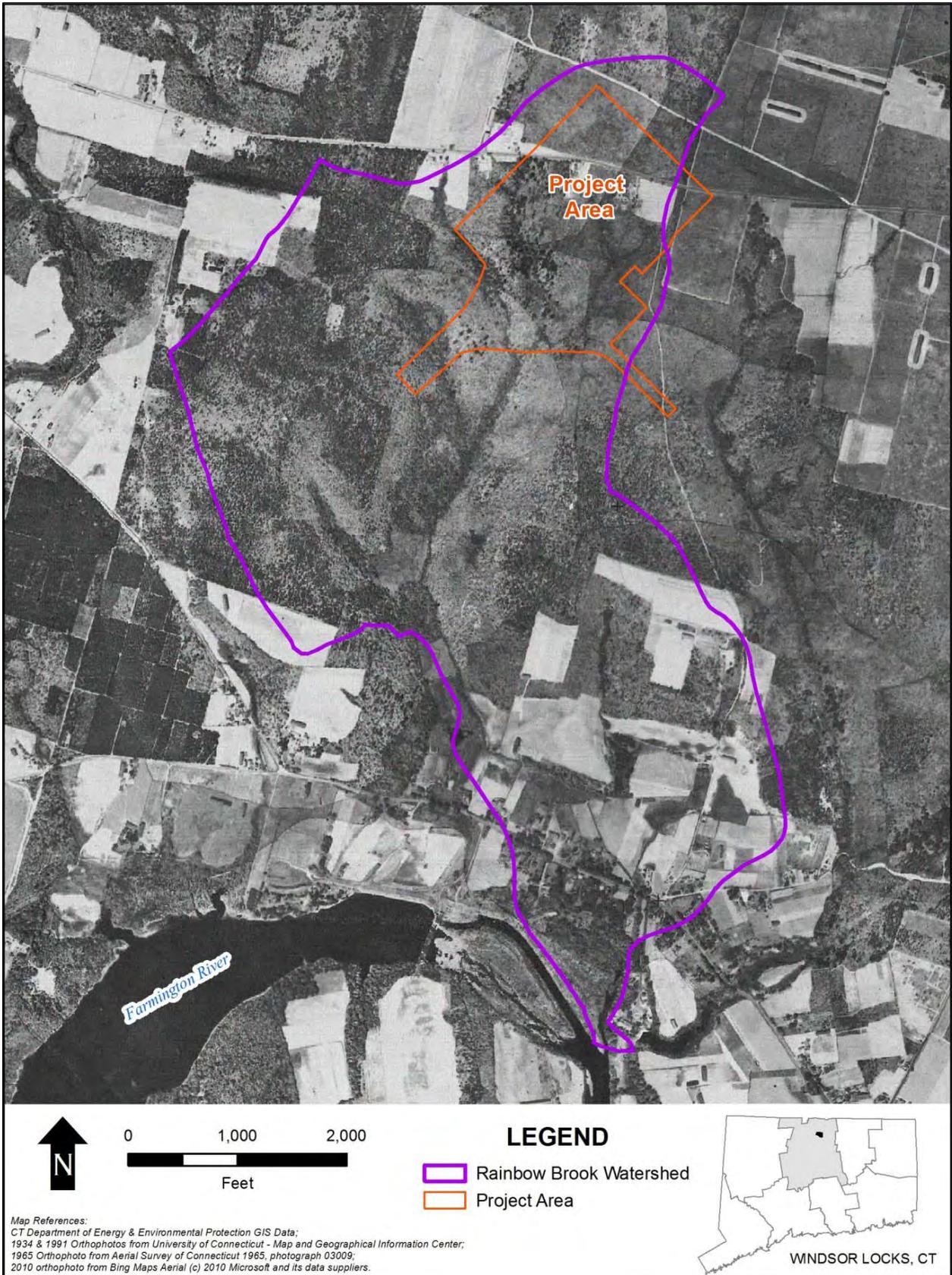


Figure 5-21. 1934 Land Use

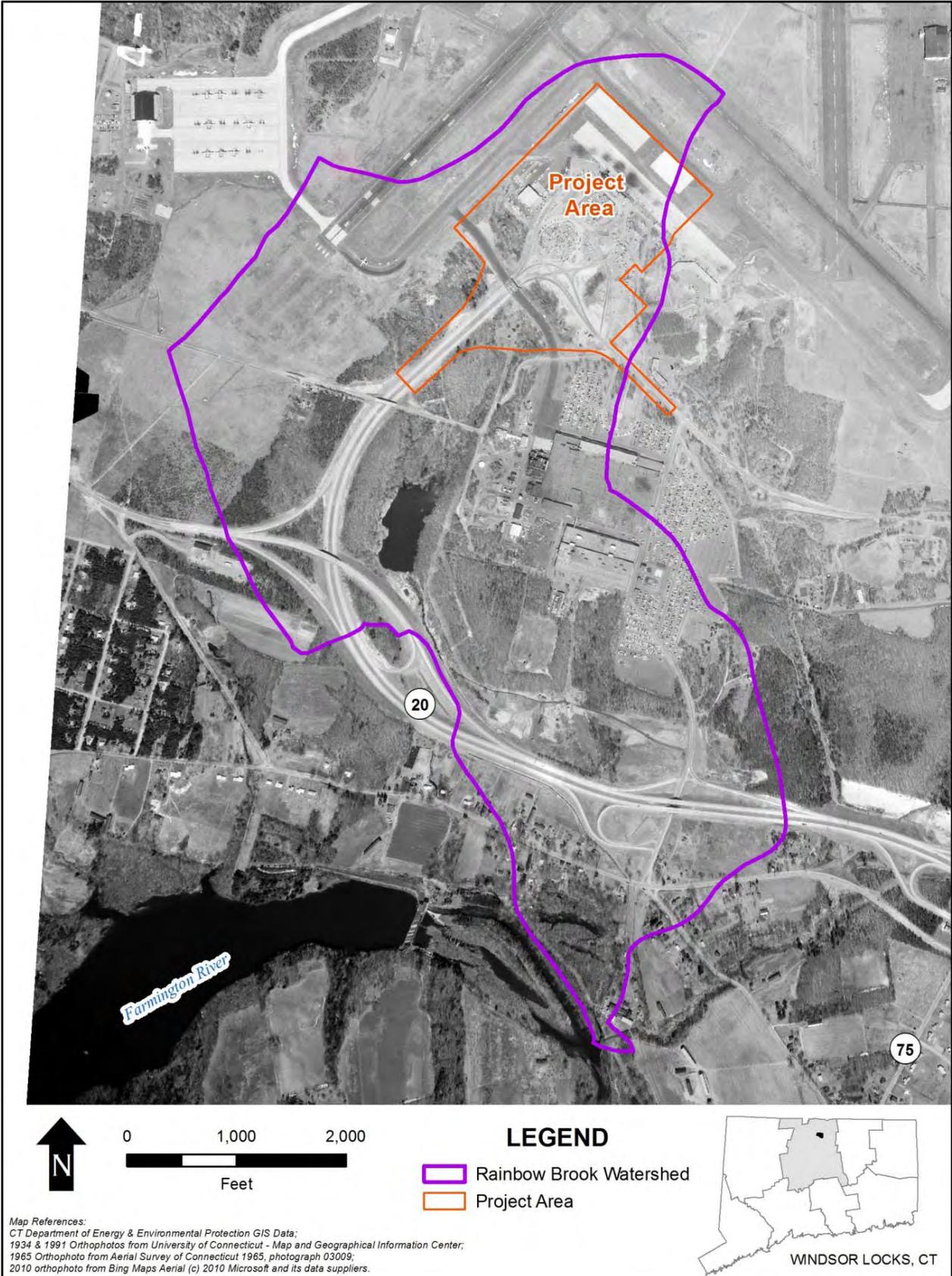


Figure 5-22. 1965 Land Use

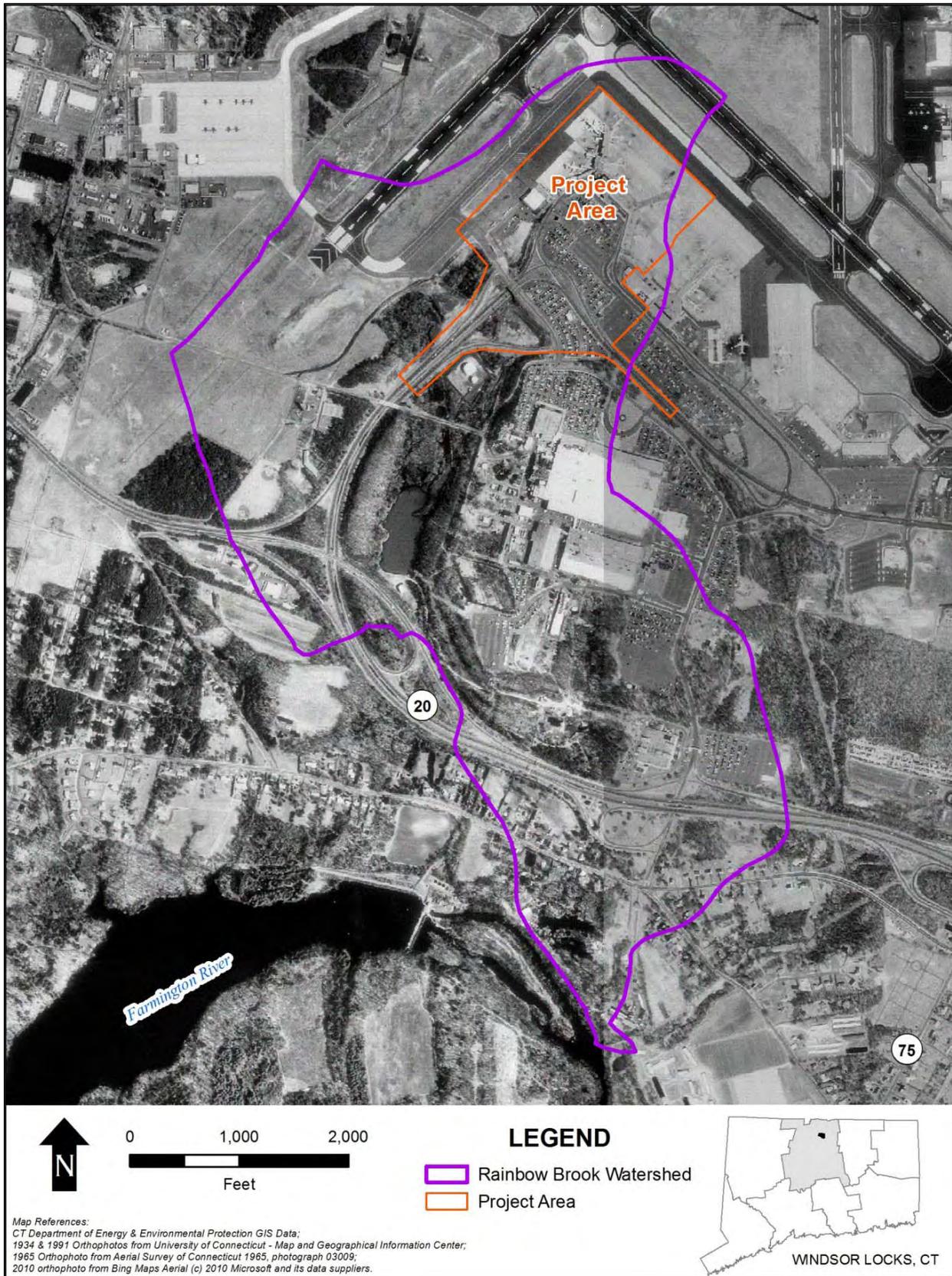


Figure 5-23. 1991 Land Use



Figure 5-24. 2010 Land Use

Traffic

As passenger activity at BDL has increased over the years, the surrounding roadway network has seen corresponding increase in traffic volumes. CTDOT has expanded the surrounding roadway network to support those increasing traffic volumes through construction of both new roadways and widening of existing roadways (see *Figures 5-21 through 5-24*).

The Bradley Connector was constructed between 1958 and 1961, providing a direct four-lane freeway connection between I-91 and the airport. Between 1961 and 1986, when Terminal A opened, several other roadway improvements were made to support increasing traffic volumes. These improvements included the construction of the current arrivals & departures roadways, widening State Route 401 to four lanes between Route 75 and the airport, and widening Route 75 to four lanes between Suffield and Windsor.

The roadway construction and widening efforts have effectively mitigated the impacts of increasing airport-related trips on the surrounding roadways, which is reflected in the existing conditions LOS analysis, which indicates that each of the study area intersections operate efficiently at LOS C or better. The traffic analysis included in the EA/EIE incorporates prior actions, the Proposed Action, and reasonably foreseeable projected traffic growth through the project horizon year of 2028. As indicated in *Section 5.3*, with routine modifications to signal timing, intersections in the project area are anticipated to function at a LOS C or better, indicating no cumulative impacts to traffic.

Demolition and Construction Period Impacts

Past construction projects dating back to the initial construction of the airfield, the expansion of the terminal and parking facilities, and associated roadway improvements likely resulted in temporary impacts confined to the construction period and do not contribute to cumulative impacts. Therefore, as mentioned above, the assessment of cumulative impacts is limited to the construction period 2012-2028. Demolition and construction period cumulative impacts to traffic, noise, and air quality are only likely to occur if other construction projects are occurring simultaneously with the construction of the Proposed Action. Given the location of the Proposed Action, surrounding residential areas are unlikely to be affected by the temporary noise or air quality impacts associated with construction, even in the event of development in the surrounding area. Appropriate traffic management during construction will minimize impacts, even in the event of other simultaneous airport projects. No cumulative impacts related to construction are anticipated since no other major development or redevelopment projects in the immediate area of the airport are reasonably foreseeable at this time.

6 Summary of Impacts and Mitigation

6.1 Unavoidable Adverse Impacts

The Proposed Action consists of redevelopment of an existing, developed area of Bradley International Airport that has traditionally been allocated for passenger terminal, parking, and access facilities. Therefore, the unavoidable adverse impacts from the Proposed Action are relatively few and are anticipated to include:

- Loss or alteration of wetland resources to accommodate landside roadway construction
- Temporary construction-related inconveniences
- Potential for encountering hazardous waste during the project construction phase

The Proposed Action includes appropriate mitigation measures to offset these adverse impacts as summarized in *Section 6.3*.

6.2 Irreversible and Irrecoverable Commitment of Resources

Irreversible and irretrievable commitment of resources associated with a proposed project are resources that remain committed to the project through its lifespan (i.e., irreversible commitment) or those that are consumed or permanently impacted during construction or operation of the project (i.e., irretrievable commitment).

Irreversible and irretrievable resources that would be committed to the Proposed Action include:

- Energy – Energy would be used for project construction and operation of the Proposed Action.
- Construction materials – Natural, synthetic, and processed materials would be used for construction of the Proposed Action.
- Human labor – The dedication of human labor to the construction phase of the project represents an irretrievable expenditure of time and production that would be unavailable for other uses.
- Financial – The expenditures required for the Proposed Action represent funds that, once committed, are no longer available for other purposes and once spent, cannot be regained.

6.3 Summary of Mitigation Measures

Mitigation measures that would reduce or offset potential adverse impacts associated with the Proposed Action are summarized in *Table 6-1*. Because the Proposed Action consists of redevelopment of an existing developed site, and is a response to (rather than a cause of) increased aircraft operations, there are relatively few potential adverse impacts.

Table 6-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Land Use, Zoning, and Local and Regional Development Plans	<ul style="list-style-type: none"> Proposed Action is consistent with land use, zoning and local/regional development plans 	<ul style="list-style-type: none"> None required
Consistency with State and Regional Plans	<ul style="list-style-type: none"> Proposed Action is consistent with State and regional plans 	<ul style="list-style-type: none"> None required
Traffic and Parking	<ul style="list-style-type: none"> Study area intersections will operate at LOS C or better under the Proposed Action, resulting in no anticipated impact to traffic Anticipated parking demand under the Proposed Action is 12,070 parking spaces – which is adequately accommodated by the available on- and off-site parking supply, resulting in no anticipated impact under the Proposed Action 	<ul style="list-style-type: none"> No mitigation necessary, other than routine signal timing adjustments
Considerations Relating to Pedestrians and Bicyclists and Transit	<ul style="list-style-type: none"> Proposed Action is not anticipated to result in impacts to these modes of transportation 	<ul style="list-style-type: none"> None required
Air Quality	<ul style="list-style-type: none"> Emissions from the Proposed Action are less than the de minimis levels identified as thresholds for impact and conformity determination Emissions from the Proposed Action are not regionally significant Less than 1% increase in Hazardous Air Pollutants will result from the Proposed Action relative to existing conditions Anticipated GHG emissions associated with the Proposed Action are below the Council on Environmental Quality threshold for impact 	<ul style="list-style-type: none"> None required
Noise	<ul style="list-style-type: none"> Noise exposure dominated by aviation activity, what would occur regardless of the Proposed Action Proposed Action is not anticipated to result in an increase in off-airport noise exposure 	<ul style="list-style-type: none"> None required Noise Compatibility Plan implementation will continue regardless of the Proposed Action

Table 6-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Socioeconomic Resources	<ul style="list-style-type: none"> The Proposed Action is not anticipated to result in adverse socioeconomic impacts 	<ul style="list-style-type: none"> None required
Water Quality	<ul style="list-style-type: none"> Proposed Action anticipated to improve water quality of stormwater discharges due to upgraded stormwater management and glycol collection systems Proposed Action would provide increased protection to groundwater by eliminating potential pollutant sources in the Terminal B area 	<ul style="list-style-type: none"> None required Existing Stormwater Pollution Prevention Plan and compliance with pending NPDES discharge permit and associated regulatory programs would address potential impacts to surface water and groundwater
Hydrology and Floodplains	<ul style="list-style-type: none"> Proposed Action involves no work in floodplain areas and no significant changes in the volume or timing of peak stormwater runoff Upgraded stormwater management measures under Proposed Action may benefit hydrologic conditions in receiving waters 	<ul style="list-style-type: none"> None required
Wetlands	<ul style="list-style-type: none"> Proposed Action would result in 0.09 to 0.28 acres of wetland impacts to WA-1, WA-2, WA-3, and WA-5, depending on the landside roadway configuration design 	<ul style="list-style-type: none"> Minimization of direct wetland impacts to extent practicable given project Purpose and Need Wetland enhancement including invasive species removal, wetland replication, and/or wetland restoration Compliance with mitigation measures specified in CTDEEP Inland Wetlands and Watercourses Permit, Clean Water Act Section 404 Permit, Clean Water Act Section 401 Water Quality Certification
Coastal Resources	<ul style="list-style-type: none"> No coastal resources are present in the project area 	<ul style="list-style-type: none"> None required
Vegetation, Wildlife, and Threatened and Endangered Species	<ul style="list-style-type: none"> No anticipated direct impacts to existing wildlife or vegetation (see below for potential indirect impacts due to construction activity) No State- or Federally-listed species located in the project area 	<ul style="list-style-type: none"> None required
Soils and Geology	<ul style="list-style-type: none"> No impacts to soils or geologic features anticipated 	<ul style="list-style-type: none"> None required

Table 6-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Cultural Resources	<ul style="list-style-type: none"> • The SHPO has determined that the Proposed Action would have no adverse effect on cultural resources • THPOs have determined that the Proposed Action would not affect properties of historical, religious or cultural significance to the Mohegan or Mashantucket Pequot tribes There are no Section 4(f) properties that would be affected by the Proposed Action 	<ul style="list-style-type: none"> • None required
Solid Waste, Toxics, Pesticides, and Hazardous Materials	<ul style="list-style-type: none"> • Proposed Action is not anticipated to impact on-going solid waste and recycling activities • Under the Proposed Action (and No Action) alternative there is the potential for encountering contaminated building materials, soil, or groundwater during demolition and construction 	<ul style="list-style-type: none"> • Ongoing compliance with Conditionally Exempt Small Quantity Generator of Hazardous Waste requirements • Disposal of solid and universal waste in compliance with applicable regulations
Aesthetics/Visual Effects	<ul style="list-style-type: none"> • Proposed Action is consistent with the existing visual and aesthetic setting of the terminal complex 	<ul style="list-style-type: none"> • None required
Energy Use and Conservation	<ul style="list-style-type: none"> • Proposed Action would improve energy conservation at BDL • New construction would meet High Performance Building Standards established by the State of Connecticut 	<ul style="list-style-type: none"> • None required
Public Utilities and Services	<ul style="list-style-type: none"> • Proposed Action is not anticipated to have adverse impacts on the supply or provision of utilities 	<ul style="list-style-type: none"> • A detailed sewer analysis will be performed in subsequent design phases to support the design of the proposed replacement sanitary pump station and force main • Existing and projected water demand and wastewater flows for the airport and projected water demand and wastewater flows associated with the Proposed Action will be evaluated in more detail during the design development phase.
Public Health and Safety	<ul style="list-style-type: none"> • No impact to provision of public health and safety services is anticipated 	<ul style="list-style-type: none"> • None required

Table 6-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
<i>Demolition and Construction Period</i>		
Traffic	<ul style="list-style-type: none"> • Minor, temporary disruptions to traffic in the immediate project area 	<ul style="list-style-type: none"> • Use of appropriate traffic management including appropriate construction phasing to minimize disruptions to traffic and access, establishing haul routes and staging areas, permissible hours of work, uniformed officers, and other traffic controls to direct traffic and assist with pedestrian crossings as needed.
Air Quality	<ul style="list-style-type: none"> • Emissions from construction equipment • Emissions from construction equipment are below de minimis levels identified as thresholds for impact and conformity determination • Increased vehicle exhaust emissions resulting from increased congestion during construction • Fugitive dust emissions during demolition and construction activities 	<ul style="list-style-type: none"> • Ensure proper operation and maintenance of construction equipment • Prohibit excessive idling of construction equipment • Consider requiring use of clean alternative fuels or retrofit emission control devices for heavy machinery with engines of greater than 60 horsepower that will be assigned to the project for greater than 30 consecutive days • Implement traffic management measures during construction • Implement appropriate controls to prevent the generation and mobilization of dust
Noise	<ul style="list-style-type: none"> • Generation of noise by construction equipment and activities 	<ul style="list-style-type: none"> • Contract specifications to ensure that noise levels at adjacent residences remain at less than 90 dBA • Restriction of work to 7:00 am to 9:00 pm local time • Properly maintain construction equipment • Provide advance notification to sensitive receptors regarding anticipated excessive noise levels
Stormwater and Water Quality	<ul style="list-style-type: none"> • Exposure of soil increases potential for erosion and sedimentation 	<ul style="list-style-type: none"> • Prepare and implement a Stormwater Pollution Control Plan in accordance with the General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities and the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
Vegetation, Wildlife, and Threatened and Endangered Species	<ul style="list-style-type: none"> • Potential for disturbance to species due to construction activity 	<ul style="list-style-type: none"> • Best management practices such as maintenance of a buffer zone between nesting sites and construction activity, adherence to time of year restrictions, and restriction of construction activities to paved areas
Solid Waste, Toxics, Pesticides, and Hazardous Materials	<ul style="list-style-type: none"> • Potential for asbestos and other hazardous materials in building demolition debris • Potential to encounter hazardous materials and/or petroleum products during excavation • Generation of solid waste consisting of construction and demolition debris 	<ul style="list-style-type: none"> • Pre-demolition survey will be performed to identify asbestos-containing materials. Asbestos abatement notification required by CTDPH. Disposal of construction waste, including asbestos, under a CTDEEP Special Waste and Asbestos Disposal Authorization. • Development of Soil Management Plan to address potentially contaminated soil encountered during construction • Construction and excavation activities performed in accordance with CTDEEP General Permit for Contaminated Soil and/or Sediment Management

Table 6-1. Summary of Impacts and Proposed Mitigation

Resource Category	Impacts	Proposed Mitigation
Safety	<ul style="list-style-type: none"> • Potential for impacts to workers 	<ul style="list-style-type: none"> • Measures would be taken by CTDOT and the project contractor to avoid safety impacts during the construction period.
Utilities	<ul style="list-style-type: none"> • Temporary outages may be necessary to accommodate connections • Utilities could be damaged accidentally 	<ul style="list-style-type: none"> • Coordinate planned outages with the appropriate utility to minimize disruptions • Inform the airport tenants of anticipated outages • Relocate, maintain, or protect utilities from disturbance or damage

7 Cost Benefit Analysis

Tangible Costs and Benefits

Costs associated with the Proposed Action include construction of the new Terminal B, Central Utility Plant, and parking garage/ConRAC; demolition of the FIS; landside utility and viaduct/roadway modification, relocation, and construction; and apron demolition and replacement. The Terminal B redevelopment project is proposed as a phased program. Project design, construction contingencies for unforeseen conditions, and incidentals (including construction inspection and quality control testing) are also considered in the total project cost. The total estimated construction cost of the enabling projects (i.e., demolition of the existing Terminal B complex, landside utility modification and relocation, construction of a new Central Utility Plant, roadway and viaduct relocation and construction, and miscellaneous airside improvements) is \$50 million. The total estimated cost for construction of the first phase of the new Terminal B, including the viaduct, is between \$580 and \$600 million. These estimated costs exclude construction of the parking garage/ConRAC facility. Estimated costs for the second phase of the new Terminal B construction are currently unavailable. While the funds expended for construction are a cost to the project proponent (i.e., the State of Connecticut), this expenditure would result in tangible short-term benefits to the local and regional construction industry.

As discussed in *Section 5.7*, BDL contributes to the local, regional, and state-wide economies, providing employment at the airport with airlines, vendors, contractors, suppliers and cargo handlers and stimulating off-airport economic activity through spending on lodging, food, parking, and retail items. The Proposed Action would contribute to and facilitate the projected economic benefits of the airport on the regional and statewide economy; through 2025, BDL is estimated to contribute, on average, more than \$34 billion in output, nearly \$11 billion in income for Connecticut's residents, and sustain nearly 140,000 jobs (CTDECD, 2005).

Intangible Costs and Benefits

The project is expected to result in intangible benefits, including more efficient passenger handling operations and improved passenger amenities at BDL. The Proposed Action would also contribute to BDL's strategic planning efforts to operate a safe, secure, and efficient facility while supporting economic growth in Connecticut (BDL, 2010).

8 List of Certificates, Permits, and Approvals

The following certificates, permits, and approvals are anticipated to be required for the construction and operational phases of the Proposed Action. This list will be refined during the project design.

Table 8-1. Certificates, Permits, and Approvals

Certificate/Permit/Approval	Category	Reviewing Agency	Comments
Federal			
Clean Water Act Section 404 Permit	Wetlands	US Army Corps of Engineers	Required for discharge of dredge or fill material within Federal jurisdictional wetlands
State			
Clean Water Act Section 401 Water Quality Certification	Wetlands	CTDEEP	Required for State-review of Federal actions in wetlands, such as issuance of a permit.
Inland Wetlands and Watercourses Permit	Wetlands	CTDEEP	Required for activities undertaken by State agencies in or affecting inland wetlands or watercourses
Wastewater Discharge Permit (NPDES)	Stormwater	CTDEEP	Required for stormwater discharges from the airport per a CTDEEP Consent Order. Application is pending.
General Permit for the Discharge of Stormwater and Dewatering Wastewater from Construction Activities	Stormwater	CTDEEP	Required for total site disturbance of one or more acres of land
General Permit for the Discharge of Domestic Sewage	Sewer	CTDEEP	Registration is required for discharges of domestic sewage to a POTW which are either greater than 50,000 gallons per day or 5% of the POTW design flow, whichever is less
General Permit for Miscellaneous Discharges of Sewer Compatible Wastewater	Sewer	CTDEEP	Required for the discharge of various forms of wastewater including building maintenance wastewater and sprinkler system test water Required if dewatering activities for excavation require the discharge of contaminated groundwater. Individual permit may also be required.
General Permit for Hydrostatic Testing Wastewater	Sewer	CTDEEP	Required for hydrostatic pressure testing of pipelines
STC Certificate Modification	Traffic	State Traffic Commission	A modification to the Airport's STC Certificate would be required as the proposed project would significantly impact the airport's parking facilities, access roadways, and overall terminal square footage

Table 8-1. Certificates, Permits, and Approvals

Certificate/Permit/ Approval	Category	Reviewing Agency	Comments
General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer)	Hazardous Materials	CTDEEP	Required if storing greater than 1,000 cubic yards of contaminated soils
Special Waste and Asbestos Disposal Authorization	Hazardous Materials	CTDEEP	Required for disposal of "Special Waste" including asbestos in landfills, composting operations and resources recovery facilities
Asbestos Abatement Notification	Hazardous Materials	Connecticut Department of Public Health	Asbestos abatement
Local / Other			
Sewer Permit / Approval	Sewer	MDC	Modification or connection to sanitary sewer that discharges to the Pequonnock Water Pollution Control Facility
New connections to existing gas and electric utilities	Gas & Electric	Utility providers	New connections to existing gas and electric utilities

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Appendix A

Project Scoping and Agency Coordination



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Scoping Notices

The Following Scoping Notice has been submitted for review and comment in this edition.

- 1) **NEW!** Terminal B Passenger Facility & Associated Improvements, Bradley Airport, Windsor Locks

Environmental Impact Evaluations

The following Environmental Impact Evaluations have been submitted for for review or comment.

- 1) Land Lease for New Hangar Facility at the Waterbury-Oxford Airport
- 2) Bristol Depot Square Redevelopment

State Land Transfers

STEP I - Notices of Intent to Transfer Property.

- 1) **NEW!** Town of Brooklyn
- 2) **NEW!** Town of New London
- 3) **NEW!** Town of Stafford
- 4) Town of Enfield, Easement
- 5) Town of Vernon, Easement

STEP II - Public comments regarding proposed transfers that were posted previously in the Environmental Monitor, and the Office of Policy and Management's (OPM's) responses to those comments.

- 1) **NEW!** Norwich Hospital, Norwich

STEP III - Draft recommendations of the Commissioner of Environmental

Protection regarding preservation of properties proposed for transfer. None in this edition.

STEP IV - Final recommendations of the Commissioner of Environmental Protection regarding disposition of properties proposed for transfer, along with comments and responses from Step III. None in this edition.

STEP V - Final determinations by the Secretary of OPM regarding the ultimate disposition of properties proposed for transfer. None in this edition.

The next edition of the Environmental Monitor will be published on October 5, 2010.

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Scoping Notices

The following Scoping Notice has been submitted for review and comment in this edition.

"Scoping" is for projects in the earliest stages of planning. At the scoping stage, detailed information on a project's design, alternatives, and environmental impacts does not yet exist. Sponsoring agencies are asking for comments from other agencies and from the public as to the scope of alternatives and environmental impacts that should be considered for further study. Send your comments to the contact person listed for the project by the date indicated.

1. Notice of Scoping for New Terminal B Passenger Facility & Associated Improvements at Bradley International Airport.

Municipality where proposed project might be located : Windsor Locks

Address of Possible Project Location : Schoephoester Rd, Windsor Locks, CT 06096.

Project Description: The proposed program will consist of developing a New Terminal B Passenger Terminal in the area occupied by the existing dated Terminal B. Key elements of the program will include a new terminal building with concourses, a modified roadway system to access the terminal, new approach roadway alignments and new parking facilities. The current plan is to build the terminal and concourses in phases as the demand for gates increases.

Project Map(s): [Click here to view a map of the project location.](#)

[Click here to view a rendition of the project concept](#)

In the rendition, new structures are colored in pale blue. The existing structures are colored gray.

Written comments from the public are welcome and will be accepted until the close of business on: **Thursday, October 21, 2010.**

Any person can ask the sponsoring agency to hold a Public Scoping Meeting by sending such a request to the address below. If a meeting is requested by 25 or more individuals, or by an association that represents 25 or more members, the sponsoring agency shall schedule a Public Scoping Meeting. Such requests must be made by Friday, October 1, 2010.

Written comments and/or requests for a Public Scoping Meeting should be sent to:

Name: Mr. Mark W. Alexander - Transportation Asst.
Planning Dir.
Agency: Connecticut Department of Transportation
Address: 2800 Berlin Turnpike
Newington, CT 06131
Fax: 860-594-3028
E-Mail: Mark.W.Alexander@ct.gov

If you have questions about the public meeting, or other questions about the scoping for this project, contact:

Name: Mr. Keith T. Hall - Transportation Supervising
Planner
Agency: Connecticut Department of Transportation
Address: 2800 Berlin Turnpike
Newington, CT 06131
Phone: 860-594-2926
Fax: 860-594-3028
E-Mail: Keith.Hall@ct.gov

The agency expects to release an Environmental Impact Evaluation for this project, for public review and comment, in July, 2011.

EIE Notices

The following Environmental Impact Evaluation (EIE) notices are submitted for review and comment in this edition.

1) Notice of EIE for: Land Lease for a New Hangar Facility at the Waterbury-Oxford Airport

Address of Possible Project Location: 300 Christian Street, Oxford

Project Description: The project consists of the construction of a hangar and office space building with a footprint of 206,000 square feet on the southeastern side of the Waterbury Oxford Airport parallel to Runway 36. The building will be constructed as a certified LEED® Building including the use of solar energy and geothermal heating.

Project Maps: [Click here to view an aerial photo of the project area](#)

[Click here to view a map of the project area](#)

[Click here to view a detailed map of the project area](#)

Comments on this EIE will be accepted until the close of business on **October 27, 2010**.

The public can view a copy of this EIE at:

- * The Town of Oxford Town Clerk's Office - 486 Oxford Road, Oxford, CT 06478-1298
- * The Oxford Public Library - 486 Oxford Road, Oxford, CT 06478
- * The Town of Middlebury Town Clerks Office - 1212 Whittemore Road, Middlebury, CT 06762
- * The Middlebury Public Library - 30 Crest Road Middlebury, CT 06762
- * The Connecticut Department of Transportation - 2800 Berlin Turnpike, Room 2155, Newington, CT 06131
- * The Central Naugatuck Valley Council of Governments - 60 North Main Street Third Floor, Waterbury, CT 06702
- * The Connecticut State Library - 231 Capitol Avenue, Hartford, CT 06106.

There is a public hearing scheduled for this EIE on:

DATE: Wednesday October 13, 2010

TIME: 7:00 pm

PLACE: Oxford High School, 61 Quaker Farms Road

NOTES: This document was prepared pursuant to the Regulations of Connecticut State Agencies, Sections 22a-1a-1 to 12, inclusive and was originally published on October 30, 2009. The Department is proceeding with the CEPA document pursuant to Section 1 of Public Act 10-120. The information contained in the document is still current and accurate. Deaf and hearing impaired persons wishing to attend this hearing and requiring an interpreter must make arrangements by contacting the Department of Transportation's Office of Communications (Voice only) at (860) 594-3062, TTY at 860-594-3090 at least five working days prior to the hearing. CTDOT Representatives will be at this location at 6:00 pm to answer any questions.

This document may be found online
at: <http://www.ct.gov/environmentaldocuments>

Send your comments about this EIE to:

Name: Mr. Mark Alexander - Transportation Assistant
Planning Director
Agency: State of Connecticut Department of
Transportation
Address: 2800 Berlin Turnpike
Newington, CT 06131
E-Mail: Mark.W.Alexander@ct.gov

If you have questions about the public hearing, or where you can review this EIE, or similar matters, please contact:

Name: Mr. Keith T. Hall - Transportation Supervising
Planner

Agency: State of Connecticut Department of
Transportation
Address: 2800 Berlin Turnpike - Room 2155 Newington,
CT 06131
E-Mail: Keith.Hall@ct.gov
Phone: 860-594-2926

2. Notice of EIE for Bristol Depot Square Redevelopment Project

Municipality where project is proposed: Bristol

Address of Possible Project Location: 100 North Main Street, Bristol

Project Description: The Connecticut Department of Economic and Community Development has prepared the Environmental Impact Evaluation for the Bristol Depot Square Redevelopment Project. The project site is an approximately 17-acre parcel located in downtown Bristol. The site is bordered to the west by North Main Street, to the south by Riverside Avenue, to the east by the Boston and Maine Railroad, and to the north by a small commercial parcel currently occupied by a Dunkin Donuts. The site was the location of the approximately 200,000 SF Bristol Centre Mall, which was demolished in 2008, and currently contains a detached 18,000 SF building occupied by the Bristol Discount Food Outlet.

The proposed action consists of a mixed-use redevelopment of the 17-acre parcel known as Depot Square in Downtown Bristol. The current master plan concept for Depot Square, which will be refined through the planning and development process, includes the following major elements: 750 Residential Units, 60,000 SF of retail, 50,000 SF of office space, a 100-room hotel, 220,000 SF of urban open space, and 1,550 parking spaces.

Project Map: [Click here to view a map of the project area.](#)

Comments on this EIE will be accepted until the close of business on:
October 22, 2010

The public can view a copy of this EIE at:

- City Clerk's Office, 111 North Main Street, City Hall, Bristol, CT 06010
- Bristol Public Library, 5 High Street, Bristol, CT 06010
- Bristol Downtown Development Corporation, 111 North Main Street, Bristol, CT 06010
- DECD, 505 Hudson Street, Hartford, CT 06106
- City of Bristol website – www.ci.bristol.ct.us
- DECD website – www.ct.gov/ecd

There is no public hearing scheduled for this Draft EIE: DECD will hold a public hearing if twenty-five persons or an association having not less than twenty-five persons requests such a hearing by September 17, 2010.

Send your comments about this EIE to:

Name: Nelson Tereso
Agency: Department of Economic & Community
Development
Address: 505 Hudson Street Hartford, CT 06106

Phone: (860) 270-8213
Fax: (860) 270-8157
E-Mail: nelson.g.tereso@ct.gov

State Land Transfer Notices

Connecticut General Statutes [Section 4b-47](#) provides for public notice of proposed transfers of state-owned lands out of state ownership. The notice process takes place in steps. Step I is the notice of intent to transfer, which includes an opportunity for any person to comment. If comments are received, the Office of Policy and Management (OPM) will respond, and the comments and responses will be published as Step II.

The Commissioner of Environmental Protection may choose to evaluate the property more thoroughly and recommend preservation of the property or restrictions on the transfer. Step III is publication of the Commissioner's report and draft recommendations, and includes a 30-day public comment period. Step IV is publication of the Commissioner's responses to any public comments along with the Commissioner's final recommendations regarding the property.

Step V is publication of OPM's final determination regarding disposition of the property. Fifteen days after this posting the transfer may proceed.

IMPORTANT: Most proposed transfers are not required to go through all five steps. The land may be sold or transferred 15 days after the close of the comment period of Step I if no comments are received. If comments are received, and the DEP does not elect to conduct and publish a more thorough study of the property, the land may be sold or transferred 15 days after publication of the comments and responses under Step II.

The following Step I Notices are posted for review and comment in this edition.

1. Notice of Proposed Land Transfer, Brooklyn

Complete Address of Property: 7 Windham Road, Brooklyn, CT

Commonly used name of property or other identifying information: DDS Group Home

Number of acres to be transferred: 1.19 ac

[Click to view map of property location](#)

Description of Property

Below is some general information about the property. It should not be considered a complete description of the property and should not be relied upon for making decisions. If only a portion of a property is proposed for transfer, the description pertains only to the portion being transferred.

Brief Description of Historical and Current Uses:

The property to be transferred contains the following:

- Buildings in use
 - Buildings not in use
 - Wooded land (partial)
 - Nonagricultural fields
 - Active agriculture
 - Paved areas
 - Ponds, streams or other water
- Water Supply: Public water supply On-site well Unknown
- Waste Disposal: Served by sewers On-site septic system
- Unknown

[Click to view aerial view of property](#)

The [Locational Guide Map of the Connecticut Conservation and Development Policies Plan for Connecticut](#) identifies the property as being in the following category(ies):

- Regional Center
- Neighborhood Conservation Area
- Growth Area
- Rural Community Center
- Rural Area
- Conservation Area
- Preservation Area
- Existing Preserved Open Space

The property is in the following municipal zone(s):

- Not zoned
- Residential
- Industrial
- Commercial
- Institutional
- Other:
- Not known

Special features of the property, if known: n/a

Value of property, if known:

- If checked, value is not known.

Links to other available information

Type of Sale or Transfer:

- Sale or transfer of property in fee
- Sale or transfer of partial interest in the property (such as an easement).

Description of interest:

Proposed recipient, if known: unknown

Proposed use by property recipient, if known: unknown

The agency is proposing to transfer the property with the following restrictions on future uses:

If checked, the state is not currently proposing restrictions on future uses.

Reason the State of Connecticut is proposing to transfer this property:
The State has deemed the property surplus, since the property is no longer needed for State use and no re-use proposals were received by other State agencies.

Comments from the public are welcome and will be accepted until the close of business on **October 21, 2010**.

Comments may include (but are not limited to) information you might have about significant natural resources or recreation resources on the property, as well as your recommendations for means to preserve such resources.

Written comments* should be sent to:

Name: Patrick O'Brien
Agency: Office of Policy and Management
Address: 450 Capitol Avenue MS#52 ASP
Hartford, CT 06106-1379
E-Mail: Patrick.Obrien@ct.gov

*E-Mail submissions are preferred.
(Comments from state agencies **must** be on agency letterhead and signed by agency head. Scanned copies are preferred.)

Please send a copy of any written comments to:

Name: Shane P. Mallory, RPA
Agency: Department of Public Works
Address: 165 Capitol Avenue, G-1
Hartford, CT 06106
E-Mail: shane.mallory@ct.gov

Additional information:

<http://data.visionappraisal.com/BrooklynCT/findpid.asp?iTable=pid&pid=3399>

[What Happens Next?](#)

To find out if this proposed transfer is the subject of further notices, check future editions of the Environmental Monitor. [Sign up for e-alerts](#) to receive a reminder e-mail on Environmental Monitor publication dates.

2. Notice of Proposed Land Transfer, New London

Complete Address of Property: 164 Broad Street, New London, CT

Commonly used name of property or other identifying information: DDS Broad Street Group Home

Number of acres to be transferred: 0.3 ac.

[Click to view map of property location](#)

Description of Property

Below is some general information about the property. It should not be considered a complete description of the property and should not be relied upon for making decisions. If only a portion of a property is proposed for transfer, the description pertains only to the portion being transferred.

Brief Description of Historical and Current Uses:

The property to be transferred contains the following:

- Buildings in use
- Buildings not in use
- Wooded land
- Nonagricultural fields
- Active agriculture
- Paved areas
- Ponds, streams or other water

Water Supply: Public water supply On-site well Unknown

Waste Disposal: Served by sewers On-site septic system
 Unknown

[Click to view aerial view of property](#)

The [Locational Guide Map of the Connecticut Conservation and Development Policies Plan for Connecticut](#) identifies the property as being in the following category(ies):

- Regional Center
- Neighborhood Conservation Area
- Growth Area
- Rural Community Center
- Rural Area
- Conservation Area
- Preservation Area
- Existing Preserved Open Space

The property is in the following municipal zone(s):

- Not zoned
- Residential
- Industrial
- Commercial
- Institutional
- Other:
- Not known

Special features of the property, if known: unknown

Value of property, if known:

- If checked, value is not known.

Links to other available information

Type of Sale or Transfer:

- Sale or transfer of property in fee
- Sale or transfer of partial interest in the property (such as an easement).

Description of interest:

Proposed recipient, if known: unknown

Proposed use by property recipient, if known: unknown

The agency is proposing to transfer the property with the following restrictions on future uses:

If checked, the state is not currently proposing restrictions on future uses.

Reason the State of Connecticut is proposing to transfer this property: The State has deemed the property surplus, since the property is no longer needed for State use and no re-use proposals were received by other State agencies.

Comments from the public are welcome and will be accepted until the close of business on **October 21, 2010**.

Comments may include (but are not limited to) information you might have about significant natural resources or recreation resources on the property, as well as your recommendations for means to preserve such resources.

Written comments* should be sent to:

Name: Patrick O'Brien
Agency: Office of Policy and Management
Address: 450 Capitol Avenue MS#52 ASP
Hartford, CT 06106-1379
E-Mail: Patrick.Obrien@ct.gov

*E-Mail submissions are preferred.
(Comments from state agencies **must** be on agency letterhead and signed by agency head. Scanned copies are preferred.)

Please send a copy of any written comments to:

Name: Shane P. Mallory, RPA
Agency: Department of Public Works
Address: 165 Capitol Avenue, G-1
Hartford, CT 06106
E-Mail: shane.mallory@ct.gov

Additional information:

<http://data.visionappraisal.com/newlondonct/findpid.asp?iTable=pid&pid=6051>

[What Happens Next?](#)

To find out if this proposed transfer is the subject of further notices, check future editions of the Environmental Monitor. [Sign up for e-alerts](#) to receive a reminder e-mail on Environmental Monitor publication dates.

3. Notice of Proposed Land Transfer, Mansfield

Complete Address of Property: 1327 Stafford Road (Spring Manor),
Mansfield, CT

Commonly used name of property or other identifying information: DDS
Birch House Group Home

Number of acres to be transferred: Approximately 2.0 to 2.5 acres. Currently the property is located on a large state-owned parcel that is not subject to this surplus action. However, as part of the sale/transfer of the former DDS Group Home, a new-legal parcel with legal access from Stafford Road will need to be created. The intent will be to create a conforming lot in accordance with local zoning regulations (which for this area is slightly more than 2 acres).

[Click to view map of property location](#)

Description of Property

Below is some general information about the property. It should not be considered a complete description of the property and should not be relied upon for making decisions. If only a portion of a property is proposed for transfer, the description pertains only to the portion being transferred.

Brief Description of Historical and Current Uses:

The property to be transferred contains the following:

- Buildings in use
- Buildings not in use
- Wooded land
- Nonagricultural fields
- Active agriculture
- Paved areas
- Ponds, streams or other water

Water Supply: Public water supply On-site well Unknown

Waste Disposal: Served by sewers On-site septic system
 Unknown

[Click to view aerial view of property](#)

The [Locational Guide Map of the Connecticut Conservation and Development Policies Plan for Connecticut](#) identifies the property as being in the following category(ies):

- Regional Center
- Neighborhood Conservation Area
- Growth Area
- Rural Community Center
- Rural Area
- Conservation Area
- Preservation Area
- Existing Preserved Open Space

The property is in the following municipal zone(s):

- Not zoned
- Residential
- Industrial
- Commercial
- Institutional
- Other:
- Not known

Special features of the property, if known: Unknown

Value of property, if known:

If checked, value is not known.

Links to other available information

Type of Sale or Transfer:

Sale or transfer of property in fee

Sale or transfer of partial interest in the property (such as an easement).

Description of interest:

Proposed recipient, if known: Unknown

Proposed use by property recipient, if known: Unknown

The agency is proposing to transfer the property with the following restrictions on future uses:

If checked, the state is not currently proposing restrictions on future uses.

Reason the State of Connecticut is proposing to transfer this property: The State has deemed the property surplus, since the property is no longer needed for State use and no re-use proposals were received by other State agencies.

Comments from the public are welcome and will be accepted until the close of business on **October 21, 2010**.

Comments may include (but are not limited to) information you might have about significant natural resources or recreation resources on the property, as well as your recommendations for means to preserve such resources.

Written comments* should be sent to:

Name: Patrick O'Brien
Agency: Office of Policy and Management
Address: 450 Capitol Avenue MS#52 ASP
Hartford, CT 06106-1379
E-Mail: Patrick.O'Brien@ct.gov

*E-Mail submissions are preferred.
(Comments from state agencies **must** be on agency letterhead and signed by agency head. Scanned copies are preferred.)

Please send a copy of any written comments to:

Name: Shane P. Mallory, RPA
Agency: Department of Public Works
Address: 165 Capitol Avenue, G-1
Hartford, CT 06106
E-Mail: shane.mallory@ct.gov

[What Happens Next?](#)

To find out if this proposed transfer is the subject of further notices, check future editions of the Environmental Monitor. [Sign up for e-alerts](#) to receive a reminder e-mail on Environmental Monitor publication dates.

4) Notice of Proposed Easement Transfer, Enfield

Complete Address of Property: Intersection of South Maple and Cooper Streets

Commonly used name of property or other identifying information: Maple Street Bridge Replacement

Number of acres to be transferred: easement for 0.07 acres (or 3,367 square feet)

Click to view maps: [Location Map](#) [Survey Map](#) [Discontinuance](#)

Description of Property

Below is some general information about the property. It should not be considered a complete description of the property and should not be relied upon for making decisions. If only a portion of a property is proposed for transfer, the description pertains only to the portion being transferred.

Brief Description of Historical and Current Uses: The property is part of Scantic River State Park. This section of the park, east of Maple Street, is known as Powder Hollow for the historic Hazard Powder Company that made gunpowder here. This area includes the ruins of a dam and part of a mill foundation. At present, there is no parking for recreational users, so they are forced to park off the edge of the road, where the abandoned Cooper street intersects with South Maple Street.

The Town of Enfield has received federal funding to replace the narrow South Maple Street bridge and is requesting various land rights from DEP in exchange for the release of an interest in a Town Right-of-Way (road). Easements that would go from DEP to the Town would be a 0.06 acre/ 2903 square foot right to build and maintain the new bridge (although only a very small portion of the bridge support will be on DEP land), a 234 square foot right to drain stormwater, and a 230 square foot right to grade the land from the road to blend to the topography in the park. All requested easements can be viewed by accessing the link to the 'Survey Map' above.

In return for the easements, the Town of Enfield will move to formally discontinue an unused 0.64 acre/28,226 square foot portion of Cooper Street to the east of the work location. The town will reserve a sewer easement, but the road Right-of-Way will be extinguished and will revert to State Park land. The proposed discontinued portion of Cooper Street appears hatched on the map can be viewed by accessing the 'Discontinuance" map above.

In addition, the Town will construct a new 7-car gravel parking area (also pictured on the 'Survey Map' above) on the remaining abandoned portion of Cooper Street where it intersects with South Maple Street. This will provide much needed parking for recreational users of Scantic River State Park.

The property to be transferred contains the following:

- Buildings in use
- Buildings not in use
- Wooded land
- Nonagricultural fields
- Active agriculture
- Paved areas
- Ponds, streams or other water

Water Supply: Public water supply On-site well Unknown

Waste Disposal: Served by sewers On-site septic system
 Unknown

Click to view aerial view of property [Bing Bird's eye view](#)

Click to view photographs of property - no photographs available.

The [Locational Guide Map of the Connecticut Conservation and Development Policies Plan for Connecticut](#) identifies the property as being in the following category(ies):

- Regional Center
- Neighborhood Conservation Area
- Growth Area
- Rural Community Center
- Rural Area
- Conservation Area
- Preservation Area
- Existing Preserved Open Space

The property is in the following municipal zone(s):

- Not zoned
- Residential
- Industrial
- Commercial
- Institutional
- Other:
- Not known

Special features of the property, if known: Property is on the banks of the Scantic River.

Value of property, if known:

- If checked, value is not known.

Type of Sale or Transfer:

- Sale or transfer of property in fee
- Sale or transfer of partial interest in the property (such as an easement).

Description of interest: Refer to 'Description of Property" and 'Survey Map" above.

Proposed recipient, if known: The Town of Enfield

Proposed use by property recipient, if known: Bridge reconstruction and maintenance, drainage, and grading.

The agency is proposing to transfer the property with the following restrictions on future uses:

- If checked, the state is not currently proposing restrictions on future uses.

Reason the State of Connecticut is proposing to transfer this property: The South Maple Street Bridge is in need of reconstruction. The new bridge will be wider and safer, and DEP will gain additional park land as well as recreational parking in trade.

Comments from the public are welcome and will be accepted until the close of business on **October 7, 2010**.

Comments may include (but are not limited to) information you might have about significant natural resources or recreation resources on the property, as well as your recommendations for means to preserve such resources.

Written comments* should be sent to:

Name: Patrick O'Brien
Agency: Office of Policy and Management
Address: 450 Capitol Avenue MS#52 ASP
Hartford, CT 06106-1379
E-Mail: Patrick.Obrien@ct.gov

*E-Mail submissions are preferred.
(Comments from state agencies **must** be on agency letterhead and signed by agency head. Scanned copies are preferred.)

[What Happens Next?](#)

To find out if this proposed transfer is the subject of further notices, check future editions of the Environmental Monitor. [Sign up for e-alerts](#) to receive a reminder e-mail on Environmental Monitor publication dates.

5. Notice of Proposed Easement Transfer, Vernon

Complete Address of Property: Phoenix Street over the Tankerhoosen River

Commonly used name of property or other identifying information:
Phoenix Street Bridge Reconstruction

Number of acres to be transferred: easement for 0.02 acres or 1105 square feet

Click to view map of property location [Location Map](#) [Survey Map](#)

[Description of Property](#)

Below is some general information about the property. It should not be considered a complete description of the property and should not be relied upon for making decisions. If only a portion of a property is proposed for transfer, the description pertains only to the portion being transferred.

Brief Description of Historical and Current Uses: This property is part of Tankerhoosen Lake and Dam, which is a compilation of many small acquisitions. The affected portion of land, on the east side of Phoenix Street, was resultant from a boundary line agreement with the Town of Vernon in 1999 when repairs and modifications to the lake's dam were made.

The Town of Vernon has received federal funding to replace the existing Phoenix Street bridge over the Tankerhoosen River, and is requesting an easement from DEP for construction and permanent maintenance. The easement consists of 0.02 acres or 1105 square feet and can be viewed by accessing the link to the 'Survey Map' above. Construction involves placement of rip-rap, concrete wingwall, and concrete block channel liner in accordance with approved plans. It will also allow for modifications to the existing 12" diameter ductile iron water main.

The property to be transferred contains the following:

- Buildings in use
 - Buildings not in use
 - Wooded land
 - Nonagricultural fields
 - Active agriculture
 - Paved areas
 - Ponds, streams or other water
- Water Supply: Public water supply On-site well Unknown
- Waste Disposal: Served by sewers On-site septic system
 Unknown

Click to view aerial view of property

[*Bing Bird's eye view looking north*](#)

[*Bing Bird's Eye View looking west*](#)

Click to view photographs of property - no photographs are available.

The [Locational Guide Map of the Connecticut Conservation and Development Policies Plan for Connecticut](#) identifies the property as being in the following category(ies):

- Regional Center
- Neighborhood Conservation Area
- Growth Area
- Rural Community Center
- Rural Area
- Conservation Area
- Preservation Area
- Existing Preserved Open Space

The property is in the following municipal zone(s):

- Not zoned
- Residential
- Industrial
- Commercial
- Institutional
- Other:
- Not known

Value of property, if known:

- If checked, value is not known.

Links to other available information

Type of Sale or Transfer:

- Sale or transfer of property in fee
- Sale or transfer of partial interest in the property (such as an easement).

Description of interest:

Proposed recipient, if known: The Town of Vernon

Proposed use by property recipient, if known: Bridge reconstruction and permanent maintenance access.

The agency is proposing to transfer the property with the following restrictions on future uses:

If checked, the state is not currently proposing restrictions on future uses.

Comments from the public are welcome and will be accepted until the close of business on **October 7, 2010**.

Comments may include (but are not limited to) information you might have about significant natural resources or recreation resources on the property, as well as your recommendations for means to preserve such resources.

Written comments* should be sent to:

Name: Patrick O'Brien
Agency: Office of Policy and Management
Address: 450 Capitol Avenue MS#52 ASP
Hartford, CT 06106-1379
E-Mail: Patrick.O'Brien@ct.gov

*E-Mail submissions are preferred.
(Comments from state agencies **must** be on agency letterhead and signed by agency head. Scanned copies are preferred.)

[What Happens Next?](#)

To find out if this proposed transfer is the subject of further notices, check future editions of the Environmental Monitor. [Sign up for e-alerts](#) to receive a reminder e-mail on Environmental Monitor publication dates.

The following Step II notice has been submitted for this edition.

1. Comments and OPM's Responses for Proposed Land Transfer in Norwich

Complete address of property: Laurel Hill Rd (Route 12) Norwich, CT

Commonly used name of property or other identifying information:
Norwich Hospital

[Click here](#) to view the previous edition of the Environmental Monitor in which the notice of intent to transfer this property (Step I) first appeared.
Comments Received and OPM Responses:

- [Mr. David Bingham](#)
- [Mr. Robert Fromer](#)

WHAT HAPPENS NEXT?

[Sign up for e-alerts](#) to receive a reminder e-mail on Environmental Monitor publication dates.

There are no Step III, IV or V notices submitted for review or comment in this edition.

The Adobe Reader is necessary to view and print Adobe Acrobat documents, including some of the maps and illustrations that are linked to this publication. If you have an outdated version of Adobe Reader, it might cause pictures to display incompletely. To download up-to-date versions of the free software, click on the Get Acrobat button, below. This link will also provide information and instructions for downloading and installing the reader.



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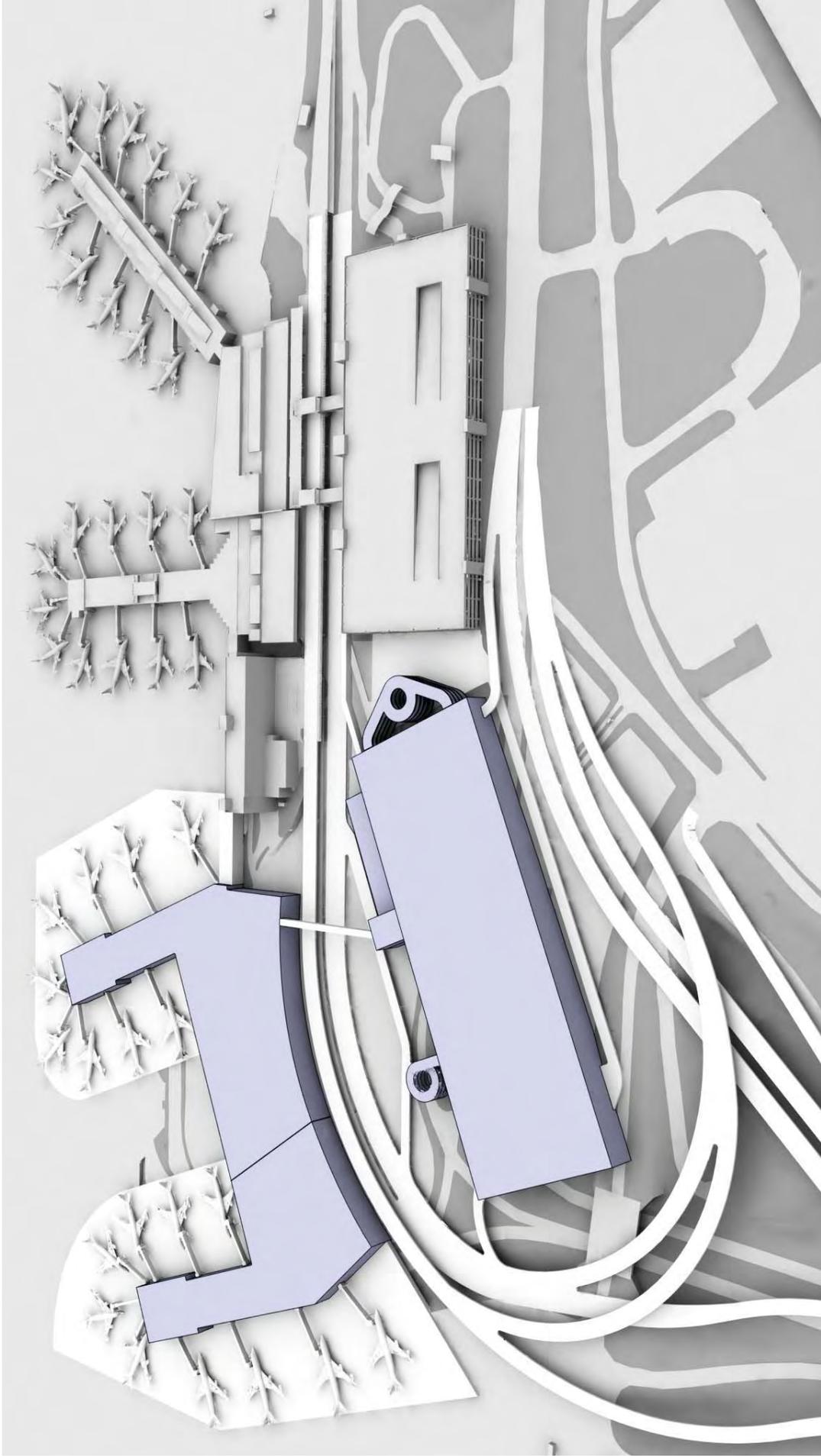
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**PROJECT
SITE**

CONCEPT 4





STATE OF CONNECTICUT

DEPARTMENT OF ENVIRONMENTAL PROTECTION

OFFICE OF ENVIRONMENTAL REVIEW

79 ELM STREET, HARTFORD, CT 06106-5127

To: Mark W. Alexander - Transportation Assistant Planning Director
DOT - Environmental Planning, 2800 Berlin Turnpike, Newington, CT 06131

From: David J. Fox - Senior Environmental Analyst **Telephone:** 860-424-4111

Date: October 20, 2010 **E-Mail:** david.fox@ct.gov

Subject: New Terminal, Bradley International Airport

The Department of Environmental Protection has received the Notice of Scoping announcing preparation of an Environmental Impact Evaluation for proposed construction of a new Terminal B, modified roadway system and new parking facilities at Bradley International Airport in Windsor Locks. The following comments are submitted for your consideration.

If any of the various project elements extend into grassed areas at the airport or these grassed areas are anticipated to be utilized by staging of equipment and materials during construction, potential impacts to the various state listed invertebrate and avian species known to occur at the airport must be considered in the document. Consultation with the Wildlife Division as early as possible in planning process is recommended. Jenny Dickson is the appropriate contact; she may be reached at 860-424-3494 or jenny.dickson@ct.gov.

Stormwater management for parking garages typically should involve two separate collection systems designed to treat the runoff from different types of parking areas. Any exposed parking levels will produce a high volume of runoff with relatively low concentrations of pollutants. Runoff from such areas should be directed to the storm sewer system and the collection system should include controls to remove sediment and oil or grease. A hydrodynamic separator, incorporating swirl technology, circular screening technology or engineered cylindrical sedimentation technology, is recommended to remove medium to coarse grained sediments and oil or grease. The treatment system should be sized such that it can treat stormwater runoff adequately. The Department recommends that the treatment system be designed to treat the first inch of stormwater runoff. Upon installation, a maintenance plan to remove sediment and oil or grease should also be implemented.

Interior levels of the garage will produce a low volume of runoff with relatively high concentrations of pollutants. In addition, the need for cleaning of the garage must be considered and floor washwater cannot be directed to a stormwater sewer system. Runoff from interior areas should be directed to the sanitary sewer system, again with appropriate treatment. An oil separator tank with a capacity of at least 1000 gallons is required. A licensed waste oil hauler must clean the tank at least once a year. A list of certified haulers can be obtained from the Bureau of Materials Management & Compliance Assurance at 860-424-3366 or on-line at: [Waste Transporters](#). The discharge of floor washwater is covered under a *General Permit for*

Miscellaneous Discharges of Sewer Compatible Wastewater as building maintenance wastewater. Registration is required for discharges greater than 5000 gallons per day. For further information concerning stormwater management, contact the Permitting & Enforcement Division at 860-424-3018. A fact sheet describing the permit and the registration form may be downloaded at: [Miscellaneous Discharge GP](#).

The project is in the watershed of Rainbow Brook, which has been historically impaired by the discharge of ethylene and propylene glycol from deicing activities at the airport. The Department recommends that ConnDOT take advantage of the opportunity, if it will exist through this project, to install a dual drainage system at the passenger gates to separate the deicing fluid collection system from the storm drain system. This type of system was installed during construction of Terminal A.

The Department's standard recommendation concerning the treatment of stormwater which follows should be observed for any new or reconstructed stormwater systems.

Appropriate controls, designed to remove sediment and oil or grease typically found in runoff from parking and driving areas, should be included in any stormwater collection system to be installed or upgraded at the site. Non-structural measures to dissipate and treat runoff are strongly encouraged, including infiltration using pervious paving or sheetflow from uncurbed pavement to vegetated swales, water gardens or depression storage areas. The Department recommends a stormwater management treatment train approach. Such a system includes a series of stormwater best management practices (BMPs) that target the anticipated pollutants of concern. For example, parking lot runoff would be expected to contain petroleum hydrocarbons, heavy metals, sediment, organic material (leaves/grass clippings) and seasonally elevated temperatures. Potential structural stormwater BMPs include, but are not limited to, catch basin inserts, gross particle separators, deep sump catch basins fitted with passive skimmers, and/or detention/retention basins having adequate pre-treatment. For larger sites, a combination of structural and non-structural BMPs are typically most effective and practical. If more than 1 acre of pavement drains to a common discharge point, a hydrodynamic separator, incorporating swirl technology, circular screening technology or engineered cylindrical sedimentation technology, is recommended to remove medium to coarse grained sediments and oil or grease. The treatment system should be sized such that it can treat stormwater runoff adequately. The Department recommends that the treatment system be designed to treat the first inch of stormwater runoff. Upon installation, a maintenance plan should also be implemented to insure continued effectiveness of these control measures.

The Department strongly supports the use of low impact development (LID) practices such as water quality swales and rain gardens for infiltration of stormwater on site. Key strategies for effective LID include: managing stormwater close to where precipitation falls; infiltrating, filtering, and storing as much stormwater as feasible; managing stormwater at multiple locations throughout the landscape; conserving and restoring natural vegetation and soils; preserving open space and minimizing land disturbance; designing the site to minimize impervious surfaces; and

providing for maintenance and education. Water quality and quantity benefits are maximized when multiple techniques are grouped together. Consequently, we typically recommend the utilization of one, or a combination of, the following measures:

- the use of pervious pavement or grid pavers (which are very compatible for parking lot and fire lane applications), or impervious pavement without curbs or with notched curbs to direct runoff to properly designed and installed infiltration areas,
- the use of vegetated swales, tree box filters, and/or infiltration islands to infiltrate and treat stormwater runoff (from building roofs and parking lots),
- the minimization of access road widths and parking lot areas to the maximum extent possible to reduce the area of impervious surface,
- if soil conditions permit, the use of dry wells to manage runoff from the building roofs,
- the use of vegetated roofs (green roofs) to reduce the runoff from buildings,
- proper treatment of special activity areas (e.g. loading docks, covered maintenance and service areas),
- the installation of rainwater harvesting systems to capture stormwater from building roofs for the purpose of reuse for irrigation, and
- providing for pollution prevention measures to reduce the introduction of pollutants to the environment.

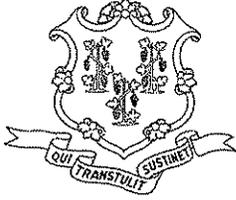
Stormwater discharges from construction sites where one or more acres are to be disturbed require a permit pursuant to 40 CFR 122.26. The Permitting & Enforcement Division has issued a *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities* (DEP-PERD-GP-015) that will cover these discharges. For projects disturbing five or more acres, registration describing the site and the construction activity must be submitted to the Department prior to the initiation of construction. A stormwater pollution control plan, including measures such as erosion and sediment controls and post construction stormwater management, must be prepared. For sites where more than 10 acres will be disturbed, the plan must be submitted to the Department. A goal of 80 percent removal of total suspended solids from the stormwater discharge shall be used in designing and installing stormwater management measures. For construction projects with a total disturbed area between one and five acres, no registration is required as long as the project is reviewed by the town and receives written approval of its erosion and sediment control measures and it adheres to the *Connecticut Guidelines for Soil Erosion and Sediment Control*. If no review is conducted by the town or written approval is not provided, the permittee must register with the Department. For further information, contact the division at 860-424-3018. A copy of the general permit as well as registration forms may be downloaded at: [Construction Stormwater GP](#).

Pursuant to section 16a-38k of the CGS, any new construction of a state facility that is projected to cost five million dollars or more, or renovation of a state facility that is projected to cost two million dollars or more must comply with sections 16a-38k-1 to 16a-38k-9 of the Regulations of Connecticut State Agencies. The regulations require that the facility design process identify and implement practical and measurable green building design, construction, operations and maintenance solutions. These regulations closely follow the silver building rating of the Leadership in Energy and Environmental Design's (LEED®) rating system for new commercial construction and major renovation projects, as established by the United States

Green Building Council, and the two-globe rating in the Green Globes USA design program. Requirements include selecting strategies in various categories including energy efficiency and renewable energy; the indoor environment; water efficiency; recycling, reuse and sustainability; site selection and development and innovative operations. For additional information concerning these regulations, contact John Ruckes of the Office of Policy & Management at john.ruckes@ct.gov or 860-418-8364. A guidebook, *Connecticut Building Standard Guidelines, Compliance Manual for High Performance Buildings*, is available on-line at: http://www.ct.gov/opm/lib/opm/pdpc/energy/ct_high_perf_handbk-final.pdf

Thank you for the opportunity to review this project. If you have any question regarding these comments, please contact me.

cc: Keith T. Hall, DOT
Karen Allen, DEP/PED
Jenny Dickson, DEP/WD
Robert Hannon, DEP/OPPD
Jessica Morgan, DEP/WPSD
Kim Trella, DEP/OPPD



STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

October 12, 2010

Mr. Mark W. Alexander
Transportation Assistant Planning Director
Department of Transportation
2800 Berlin Turnpike
Newington, CT 06131

RE: Notice of Scoping for New Terminal B Passenger Facility & Associated
Improvements at Bradley International Airport

Dear Mr. Alexander:

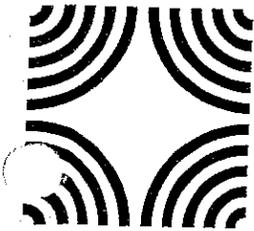
The Drinking Water Section of the Department of Public Health has reviewed the above-mentioned project for potential impacts to any sources of public drinking water supply. This project does not appear to be in a public water supply source water area; therefore, the Drinking Water Section has no comments at this time.

Sincerely,

Eric McPhee
Supervising Environmental Analyst
Drinking Water Section



Phone: (860) 509-7333
Telephone Device for the Deaf (860) 509-7191
410 Capitol Avenue - MS # 51WAT
P.O. Box 340308 Hartford, CT 06134
Affirmative Action / An Equal Opportunity Employer



Connecticut Commission on Culture & Tourism

October 29, 2007

Historic Preservation
& Museum Division

Mr. James H. Norman
State Design
ConnDOT
2800 Berlin Turnpike
Newington, CT

59 South Prospect Street
Hartford, Connecticut
06106

(v) 860.566.3005
(f) 860.566.5078

Subject: New West Terminal Complex
Bradley International Airport
Windsor Locks, CT
ConnDOT #165-393

Dear Mr. Norman:

The State Historic Preservation Office has reviewed the above-named project. This office notes that the Terminal B complex at Bradley International Airport lacks historic architectural integrity and is not eligible for the National Register of Historic Places. Therefore, this office expects that the proposed project will have no effect on Connecticut's historic, architectural, and archaeological resources.

This office appreciates the opportunity to have reviewed and commented upon the proposed project.

This comment is provided in accordance with the National Historic Preservation Act and the Connecticut Environmental Policy Act.

For further information please contact Dr. David A. Poirier, Staff Archaeologist.

Sincerely,

Karen Senich
Deputy State Historic Preservation Officer

cc: Ms. Cynthia Holden/ConnDOT

KEITH

Endangered Species Consultation

Project Review for Projects with Federal Involvement

(authorizing, funding or carrying out the project)

The following information is designed to assist applicants or project sponsors in determining whether a federally-listed, proposed and/or candidate species may occur within the proposed project area and whether it is appropriate to contact our office for additional coordination or consultation. We encourage you to print out all materials used in the analyses of effects on listed, proposed or candidate species for your records or submission to the appropriate federal agency or our office.

Step 1. - Determine whether any listed, proposed, or candidate species (T/E species) are likely to occur within the proposed project **action area** based on location of the proposed project:

- A. Choose your state list below and review for Towns in which federally-listed species occur:

Connecticut - 12 species (29 KB)

Massachusetts - 14 species (41 KB)

New Hampshire - 13 species (31 KB)

Rhode Island - 8 species (22 KB)

Vermont - 10 species (25 KB)

- B. You should contact your state Natural Heritage Program or Endangered Species Program (see list below) for additional information on federally and state-listed species:

Rhode Island Natural Heritage Program

Connecticut Endangered Species Program

Massachusetts **Natural Heritage and Endangered Species Program**

Vermont **Non-Game and Natural Heritage**

New Hampshire **Fish and Game's Non-game and Endangered Wildlife Program**

New Hampshire Natural Heritage Bureau's **Home Page**

Please note that these agencies provide information on known occurrences; this information does not replace field surveys, especially for plants, as most project sites have not been previously surveyed specifically for listed species.

- C. If the project falls within a Town where the endangered dwarf wedgemussel is known to occur, check the appropriate map to determine whether your project is in the vicinity of its known range.

Massachusetts - **Connecticut River Watershed** (912 KB)

New Hampshire/Vermont - Connecticut River Watershed

Upper Connecticut River (872 KB)

Middle Connecticut River (1.07 MB)

Lower Connecticut River (1.56 MB)

New Hampshire - **Ashuelot River Watershed** (886 KB)

Connecticut - **Connecticut River Watershed** (2.04 MB)

- D. If the project falls within a Town where the endangered northern red-bellied cooter is known to occur, or if the project occurs in Plymouth County, Massachusetts, check the map to determine whether your project is in the vicinity of its known range or critical habitat. [NRBC_MAP](#) (59 KB)
- E. If a proposed project occurs in a Town with no known listed, proposed or candidate species present, no further coordination with the Service is needed. You may download a **"no species present" letter** (158 KB) stating "no species are known to occur in the project area".
- F. If the proposed project occurs in a Town with known occurrences of T/E species, proceed to Step 2.

Step 2. - Determine whether any listed or proposed New England Species are likely to occur within the proposed project area by comparing the habitat present within the proposed project action area with habitat that is suitable for the species.

- A. Review the information we have provided on the species list information from the appropriate state agency, and any other sources of information available to you to determine types of habitat the species use. A description of suitable habitat for New England's federally-listed species may be found in [New England Species'](#) profiles and fact sheets.
- B. Determine whether your proposed project action area has any potential for listed species habitat (e.g., are suitable roost trees present? - Indiana bats; are wetlands present? - bog turtles or Northeastern bulrush; will project affect a waterway? – dwarf wedgemussel). After this initial coarse review, determine whether any more detailed surveys may be appropriate (e.g., survey for dwarf wedgemussels).
- C. If your state Natural Heritage Program or Endangered Species Program does not identify any listed species for the proposed project AND there is no potential habitat for any listed species within the action area, no further coordination with the Service is required. You may download a **"no species present" letter** (158 KB) stating "no species are known to occur in the project area".
- D. If you have identified that potential listed species habitat is present although the species has not been documented from that specific location, further coordination with our office is recommended. Please send the results of your assessment including any habitat surveys to:

Supervisor
U.S. Fish and Wildlife Service
70 Commercial St., Suite 300
Concord, NH 03301

Include in your letter:

A detailed description of the proposed project, including approximate proposed project construction schedule and project activities (e.g., land clearing, utilities, stormwater management). Site plans are often helpful in our evaluation process.

- o A description of the natural characteristics of the property and surrounding area (e.g., forested areas, freshwater wetlands, open waters, and soils). Photographs are often helpful in assessing the habitat. Additionally, please include a description of surrounding land use (residential, agricultural, or commercial).
- o The location of the above referenced property and extent of any project related activities or discharges clearly indicated on a copy of a USGS 7.5 Minute Topographic Quadrangle (Quad) with the name of the Quad(s) and latitude/longitude clearly labeled.
- o A description of conservation measures to avoid or minimize impacts to listed species.

Why does this matter?- In a case where no habitat is present, a quick and easy determination can be made that further coordination is not necessary. In a case where habitat is present, but you believe that the project activities will not impact listed species, it is important to coordinate with us to ensure that all project activities and all potential effects (direct and indirect) have been considered.

(Please allow 30 days following our receipt of your request for processing.)

Step 3. - Based on the results of the habitat survey and a description of the proposed project (including information as to whether any potential habitat may be directly or indirectly affected), the involved Federal agency may determine:

- o The proposed project will result in no effect to any T/E species and no further coordination or consultation with the Service is required;
- o Additional information (e.g., surveys) is required to determine whether any T/E species are likely to occur within the proposed project area; or
- o The proposed project "may affect" a T/E species and consultation with the Service is required.

**FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES
IN CONNECTICUT**

COUNTY	SPECIES	FEDERAL STATUS	GENERAL LOCATION/HABITAT	TOWNS
Fairfield	Piping Plover	Threatened	Coastal Beaches	Westport, Bridgeport and Stratford
	Roseate Tern	Endangered	Coastal beaches, Islands and the Atlantic Ocean	Westport and Stratford
	Bog Turtle	Threatened	Wetlands	Ridgefield and Danbury.
Hartford	Dwarf wedgemussel	Endangered	Farmington and Podunk Rivers	South Windsor, East Granby, Simsbury, Avon and Bloomfield.
Litchfield	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Sharon.
	Bog Turtle	Threatened	Wetlands	Sharon and Salisbury.
Middlesex	Roseate Tern	Endangered	Coastal beaches, islands and the Atlantic Ocean	Westbrook and New London.
	Piping Plover	Threatened	Coastal Beaches	Clinton, Westbrook, Old Saybrook.
	Puritan Tiger Beetle	Threatened	Sandy beaches along the Connecticut River	Cromwell, Portland
New Haven	Bog Turtle	Threatened	Wetlands	Southbury
	Piping Plover	Threatened	Coastal Beaches	Milford, Madison and West Haven
	Roseate Tern	Endangered	Coastal beaches, Islands and the Atlantic Ocean	Branford, Guilford and Madison
	Indiana Bat	Endangered	Mines, Caves	
New London	Piping Plover	Threatened	Coastal Beaches	Old Lyme, Waterford, Groton and Stonington.
	Roseate Tern	Endangered	Coastal beaches, Islands and the Atlantic Ocean	East Lyme and Waterford.
	Small whorled Pogonia	Threatened	Forests with somewhat poorly drained soils and/or a seasonally high water table	Waterford
Tolland	None			

-Eastern cougar, gray wolf, Indiana bat, Seabeach amaranth and American burying beetle are considered extirpated in Connecticut.

-There is no federally-designated Critical Habitat in Connecticut.

7/31/2008



United States Department of the Interior



FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>

January 3, 2011

To Whom It May Concern:

This project was reviewed for the presence of federally-listed or proposed, threatened or endangered species or critical habitat per instructions provided on the U.S. Fish and Wildlife Service's New England Field Office website:

(<http://www.fws.gov/newengland/EndangeredSpec-Consultation.htm>)

Based on the information currently available, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service (Service) are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under section 7 of the Endangered Species Act is not required.

This concludes the review of listed species and critical habitat in the project location(s) and environs referenced above. No further Endangered Species Act coordination of this type is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your cooperation. Please contact Mr. Anthony Tur of this office at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

Part II: Requester Information (continued)

Affiliation of primary contact, check one: Property owner Consultant Engineer
 Facility owner Applicant Biologist Pesticide Applicator
 Other representative (specify):

3. Project Type:

Choose Project Type: Other , If other describe: EA/EIE for Terminal B expansion

Part III: Site Information

This request can only be completed for one site. A separate request must be filed for each additional site.

1. Site Location

Site Name or Project Name: **Bradley International Airport**

Town(s): **Windsor Locks**

Street Address or Location Description:
Schoephoester Road

Size in acres, or site dimensions: **12.5 ac +/-**

Latitude and longitude of the center of the site in decimal degrees (e.g., 41.23456 -71.68574):

Latitude: **41 56' 20"N**

Longitude: **72 41' 0"W**

Method of coordinate determination (check one):

GPS Photo interpolation using CTECO map viewer Other (specify):

2a. Describe the current land use and land cover of the site.

Airport

b. Check all that apply and enter the size in acres or % of area in the space after each checked category.

<input type="checkbox"/> Industrial/Commercial _____	<input type="checkbox"/> Residential _____	<input type="checkbox"/> Forest _____
<input checked="" type="checkbox"/> Wetland <u>5</u> _____	<input checked="" type="checkbox"/> Field/grassland <u>20</u> _____	<input type="checkbox"/> Agricultural _____
<input type="checkbox"/> Water _____	<input type="checkbox"/> Utility Right-of-way _____	
<input checked="" type="checkbox"/> Transportation Right-of-way <u>70</u> _____	<input type="checkbox"/> Other (specify): _____	

Part IV: Project Information

1. Is the subject activity limited to the maintenance, repair, or improvement of an existing structure within the existing footprint? Yes No If yes, explain.

Part IV: Project Information (continued)

2. Give a detailed description of the activity which is the subject of this request and describe the methods and equipment that will be used.

The Connecticut Department of Transportation (CTDOT) proposes to construct a new passenger terminal in the area occupied by the existing Terminal B at Bradley International Airport (BIA) in Windsor Locks, CT. The existing Terminal B complex, which includes the two attached concourses, the old International Arrivals Building, the grade-separated roadway, short-term parking and the airfield lighting substation, will be demolished for construction of a new terminal complex that will be designated as Terminal B.

3. Provide a contact for questions about the project details if different from Part II primary contact.

Name:

Phone:

Email:

Part V: Request Type and Associated Application Type

Check *one* box from either Group 1 *or* Group 2, indicating the appropriate category for this request.

Group 1. If you check one of these boxes, fill out Parts I – VII of this form and submit the required attachments A and B.

- Preliminary screening was negative but an NDDB review is still requested
- Request regards a municipally regulated or unregulated activity (no state permit/certificate needed)
- Request regards a preliminary site assessment or project feasibility study
- Request relates to land acquisition or protection
- Request is associated with a *renewal* of an existing permit, with no modifications

Group 2. If you check one of these boxes, fill out Parts I – VII of this form and submit required attachments A, B, *and* C.

- Request is associated with a *new* state or federal permit application
- Request is associated with modification of an existing permit
- Request is associated with a permit enforcement action
- Request regards site management or planning, requiring detailed species recommendations
- Request regards a state funded project, state agency activity, or CEPA request

If you are filing this request as part of a state or federal permit application enter the application information below.

Permitting Agency and Application Name: _____

State DEP Application Number, if known: _____

State DEP Enforcement Action Number, if known: _____

State DEP Permit Analyst/Engineer, if known: _____

Is this request related to a previously submitted NDDB request? Yes No

Enter the previous NDDB Request Number(s), if known: _____

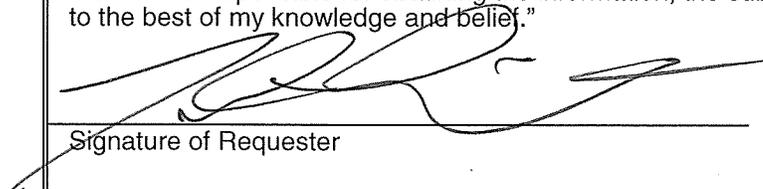
Part VI: Supporting Documents

Please check each attachment submitted as verification that *all* applicable attachments have been supplied with this request form. Label each attachment as indicated in this part (e.g., Attachment A, etc.) and be sure to include the requester's name, site name and the date. **Please note that Attachments A and B are required for all requesters.** Attachment C (DEP-APP-007C) is supplied at the end of this form.

<input checked="" type="checkbox"/> Attachment A:	Overview Map: an 8 1/2" X 11" print/copy of the relevant portion of a USGS Topographic Quadrangle Map clearly indicating the exact location of the site.
<input checked="" type="checkbox"/> Attachment B:	Detailed Site Map: fine scaled map showing site boundary details on aerial imagery with relevant landmarks labeled. (Site boundaries in GIS [ESRI ArcView shapefile, in NAD83, State Plane, feet] format can be substituted for detailed maps, see instruction document)
<input checked="" type="checkbox"/> Attachment C:	Supplemental Information, Group 2 requirement (attached, DEP-APP-007C) <input checked="" type="checkbox"/> Section i: Supplemental Site Information and supporting documents <input checked="" type="checkbox"/> Section ii: Supplemental Project Information and supporting documents

Part VII: Requester Certification

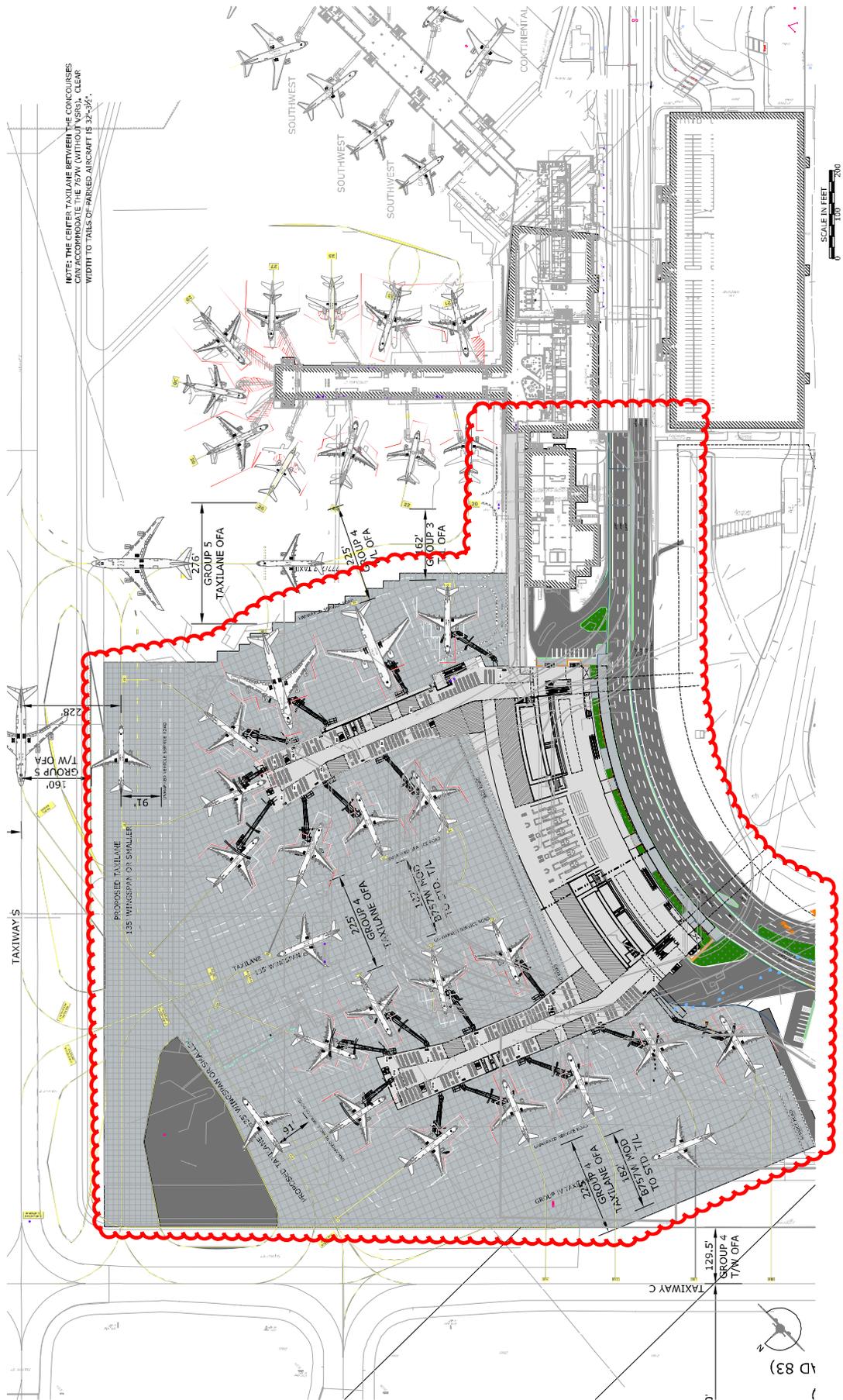
The requester *and* the individual(s) responsible for actually preparing the request must sign this part. A request will be considered incomplete unless all required signatures are provided.

<p>"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief."</p> 	
Signature of Requester	8/31/11 Date
Joshua Wilson, PWS (#1992) Name of Requester (print or type)	Senior Ecologist Title (if applicable)
Signature of Preparer (if different than above)	Date
Name of Preparer (print or type)	Title (if applicable)

Note: Please submit the completed Request Form and all Supporting Documents to:

CENTRAL PERMIT PROCESSING UNIT
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
 79 ELM STREET
 HARTFORD, CT 06106-5127

Or email request to: dep.nddbrequest@ct.gov



NOTE: THE CENTER TAXILANE BETWEEN THE CONCOURSES WILL ACCOMMODATE THE 737 MAX (80000 LBS) AIRCRAFT CLEAR WIDTH TO TAXISLOT. PARKED AIRCRAFT IS 22'-0".

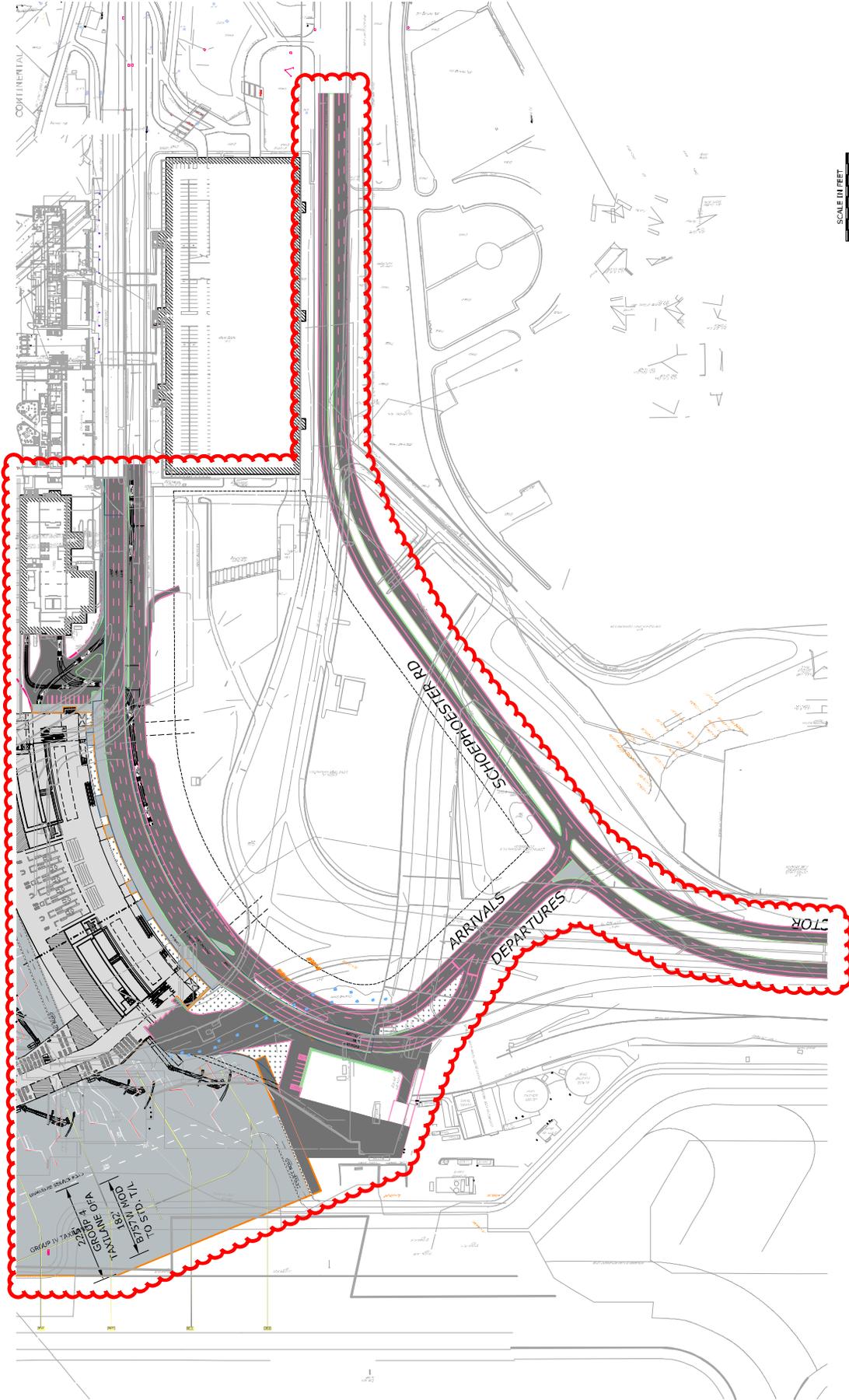
APRON LAYOUT PLAN
JUNE 2011

BRADLEY INTERNATIONAL AIRPORT
TERMINAL B
SCHEMATIC DESIGN



STV Incorporated





C-26

ROADWAY LAYOUT
AT-GRADE INTERSECTION
JUNE 2011

BRADLEY INTERNATIONAL AIRPORT
TERMINAL B
SCHEMATIC DESIGN



Attachment C: Supplemental Information, Group 2 requirement

Section i: Supplemental Site Information

1. Existing Conditions

Describe all natural and man-made features including wetlands, watercourses, fish and wildlife habitat, floodplains and any existing structures potentially affected by the subject activity. Such features should be depicted and labeled on the site plan that must be submitted. Photographs of current site conditions may be helpful to reviewers.

The airport site is largely developed as a transportation center. Wetlands and watercourses are limited to drainage areas for stormwater control around the site. The site is a known critical habitat that supports grassland bird species.

- Site Photographs (optional) attached
- Site Plan/sketch of existing conditions attached

2. Biological Surveys

Has a biologist visited the site and conducted a biological survey to determine the presence of any endangered, threatened or special concern species Yes No

If yes, complete the following questions and submit any reports of biological surveys, documentation of the biologist's qualifications, and any NDDB survey forms.

Biologist(s) name:

Habitat and/or species targeted by survey:

Dates when surveys were conducted:

- Reports of biological surveys attached
- Documentation of biologist's qualifications attached
- NDDB Survey forms for any listed species observations attached

Section ii: Supplemental Project Information

1. Provide a schedule for all phases of the project including the year, the month and/or season that the proposed activity will be initiated and the duration of the activity.

The PEP Report also identifies a preferred concept design (Concept 4) that will be carried into Schematic Design. Construction of Phase I is anticipated to be completed by 2018 (build year), while Phase II construction is estimated to be completed by 2028 (full-build design year).

2. Describe and quantify the proposed changes to existing conditions and describe any on-site or off-site impacts. In addition, provide an annotated site plan detailing the areas of impact and proposed changes to existing conditions.

The project includes the following specific program elements:

- **Demolition of the Existing Terminal B**
- **Phased Construction of a New Terminal B (Phase I and Phase II)**
- **Landside and Airside Utility Relocation**
- **Roadway and Viaduct Relocation/Construction**
- **Airside Utilities, Apron and Taxiway Construction**
- **Parking Garage and Consolidated Car Rental Facility (ConRAC) Construction**
- **Central Utility Plant Construction**

Annotated Site Plan attached



Connecticut Department of
**ENERGY &
ENVIRONMENTAL
PROTECTION**

Bureau of Natural Resources
Wildlife Division
Natural History Survey – Natural Diversity Data Base

September 26, 2011

Mr. Joshua Wilson
Fuss & O'Neill, Inc.
146 Hartford Road
Manchester, CT 06040

Regarding: Bradley International Airport, Windsor Locks– Natural Diversity Data Base 201106407

Dear Mr. Wilson:

In response to your request for a Natural Diversity Data Base (NDDB) Review of State Listed Species for the Bradley International Airport, our records indicate extent populations of many endangered, threatened, and species of special concern birds documented on or within the vicinity of the site. Best management practices should always be implemented and maintained during the entire course of the project; and requirements should include, but not be limited to: all demolition, reconstruction, and building staging materials shall only be placed on existing paved areas.

Birds are most susceptible to human disturbance during the breeding season, therefore, the Wildlife Division recommends that if state-listed birds are documented as nesting on or close to the work site, then a sufficient buffer zone should be delineated around the nest to minimize disturbance.

The Natural Diversity Data Base includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the project is not implemented within 12 months, then another Natural Diversity Data Base review should be requested for up-to-date information.

Please be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEEP for the proposed site.

Thank you for consulting the Natural Diversity Data Base. If you have any additional questions, I can be contacted by email at Elaine.Hinsch@po.state.ct.us.

Sincerely,

Elaine Hinsch
Program Specialist II
Wildlife Division



U.S. Department
of Transportation
**Federal Aviation
Administration**
FEB 13 2012

New England Region
Office of the Regional Administrator

12 New England Executive Park
Burlington, MA 01803

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

The Honorable Bruce Bozsum
Chairman
Mohegan Indian Tribe of Connecticut
5 Crow Hill Rd.
Uncasville, CT 06382

Dear Chairman Bozsum:

**Government-to-Government Consultation Invitation
Airport Project at Bradley International Airport in Connecticut**

The Federal Aviation Administration (FAA), in cooperation with airport owners and operators, is proposing a project at Bradley International Airport in Windsor Locks, Connecticut, as outlined herein.

Purpose of Government-to-Government Consultation

The purpose of Government-to-Government consultation as described in the National Historic Preservation Act, Section 106, Federal Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments," and FAA's Order 1210.20, "American Indian and Alaska Native Tribal Consultation Policy and Procedures," is to ensure that Federally Recognized Tribes are given the opportunity to provide meaningful and timely input regarding proposed FAA undertakings that uniquely or significantly affect Tribes.

Consultation Initiation

With this letter, the FAA is inviting the Mohegan Indian Tribe of Connecticut to consult on concerns that may significantly affect your Tribe related to the proposed airport improvements. Early identification of Tribal concerns will allow the FAA and the airport owner and operator to consider ways to avoid, mitigate, or minimize potential impact to Tribal resources and practices as project alternatives are developed and refined.

Project Information

The project under consideration includes the demolition of Terminal B and construction of new terminal with associated improvements, including new roadways, parking garage, rental car facility, aircraft apron and utilities. Please see three enclosed plans: Projected Area, Existing Conditions, and Proposed Action.

Confidentiality

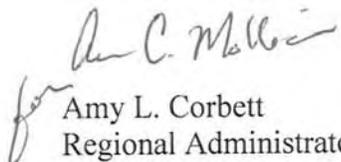
We understand that you may have concerns regarding the confidentiality of the information on areas or resources of religious, traditional, and cultural importance to the tribe. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

FAA Contact Information

Your timely response will assist us in incorporating your concerns into project planning. For that reason, we respectfully request that you contact FAA within thirty days of your receipt of this correspondence as to your interest in Government-to-Government Consultation regarding these projects.

You may contact FAA's Regional Tribal Consultation Official, Barbara Travers-Wright, by telephone at 781-238-7025, or by email at Barbara.Travers-Wright@faa.gov. At that time, the consultation request will be provided to the FAA, Airports Division.

Sincerely,


for Amy L. Corbett
Regional Administrator

Enclosure

cc: Ms. Melissa Zobel, Tribal Historian, Mohegan Indian Tribe of Connecticut
(Certified Mail – Return Receipt Requested)



Figure 1-3. Project Area

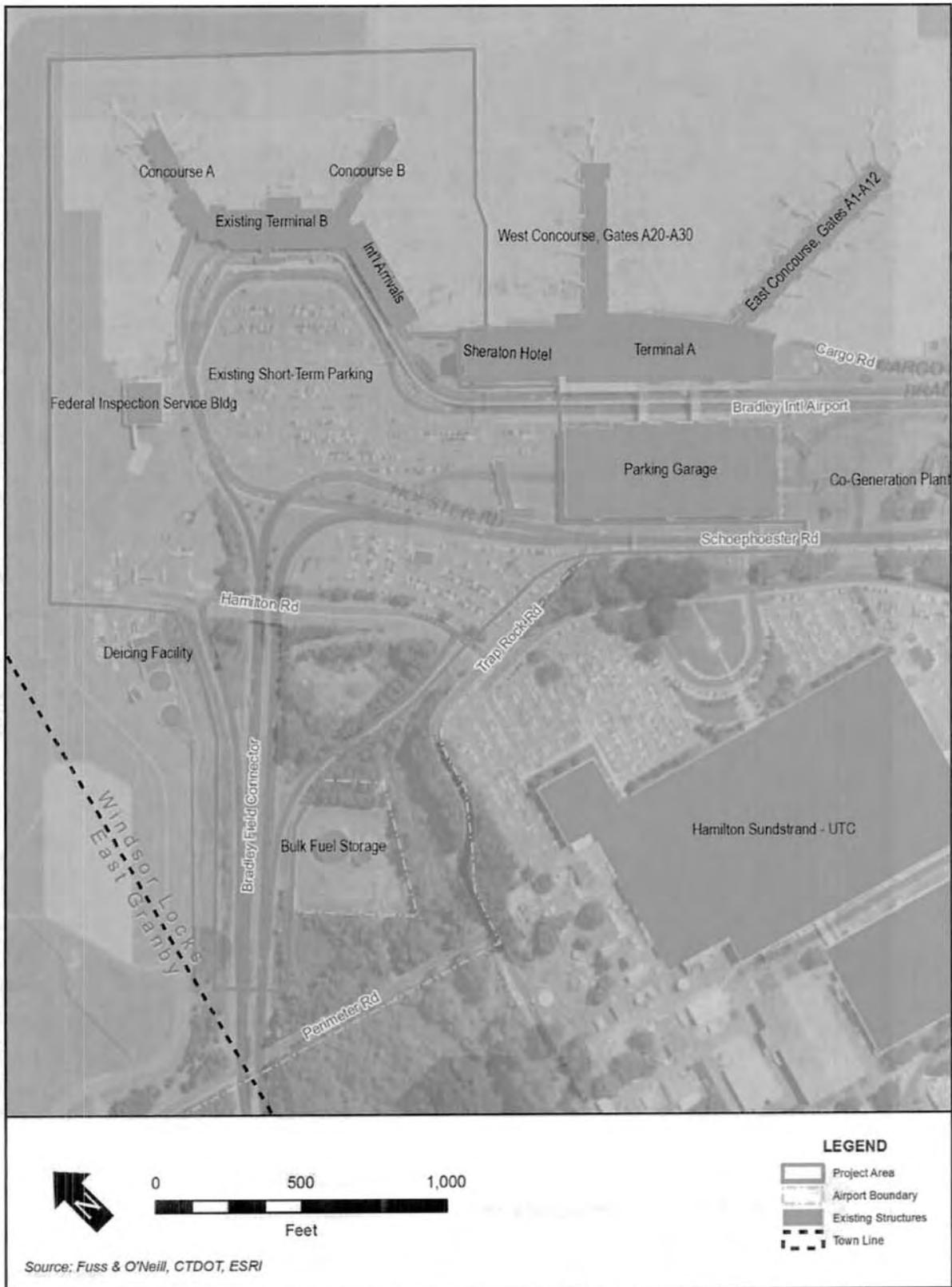


Figure 1-4. Existing Conditions

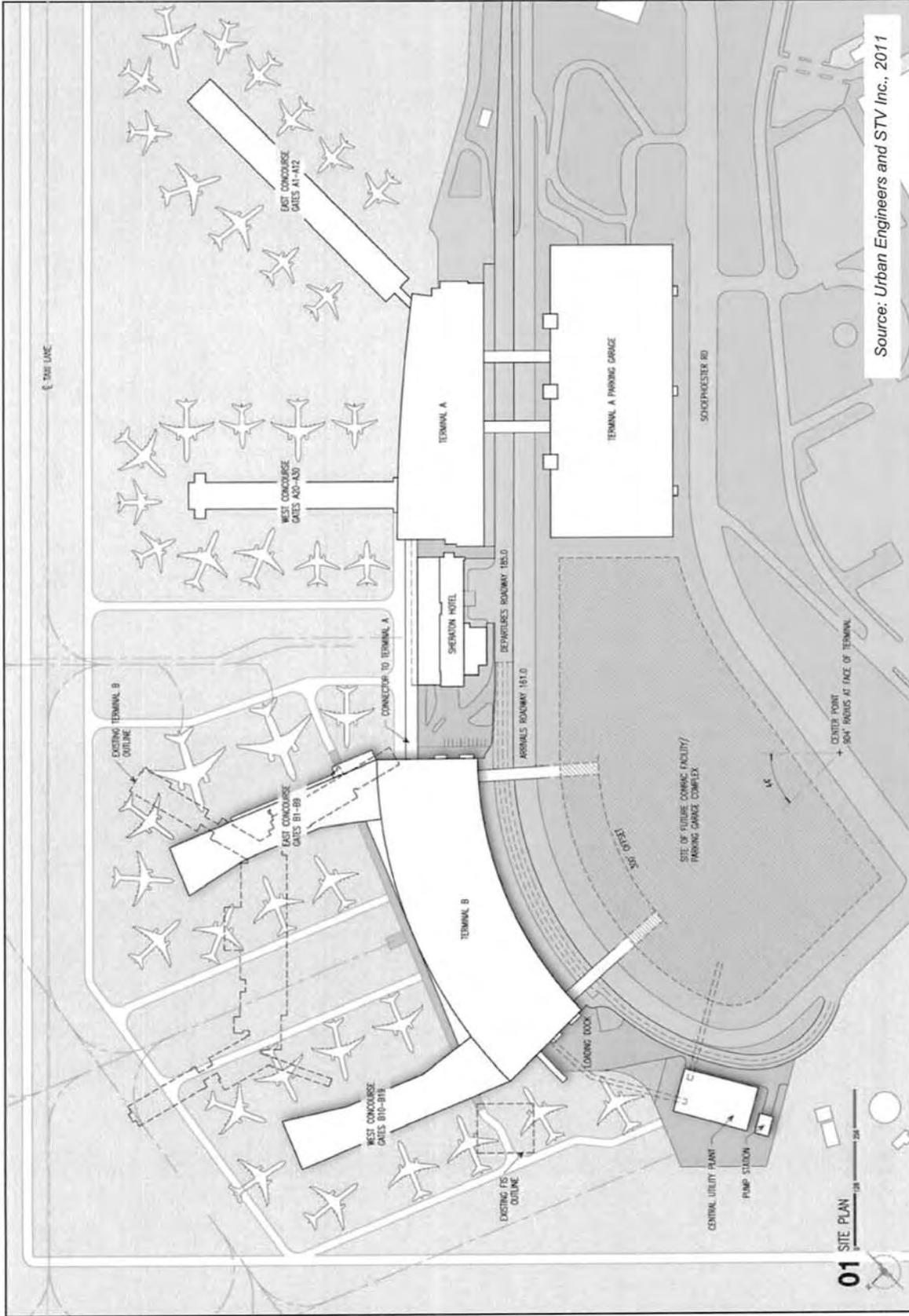


Figure 1-5. Proposed Action – Terminal, Landside, and Airside Facilities



U.S. Department
of Transportation
**Federal Aviation
Administration**
FEB 13 2012

New England Region
Office of the Regional Administrator

12 New England Executive Park
Burlington, MA 01803

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

The Honorable Rodney Butler
Chairman
Mashantucket Pequot Tribe of Connecticut
2 Matts Path
Mashantucket, CT 06338

Dear Chairman Butler:

**Government-to-Government Consultation Invitation
Airport Project at Bradley International Airport in Connecticut**

The Federal Aviation Administration (FAA), in cooperation with airport owners and operators, is proposing a project at Bradley International Airport in Windsor Locks, Connecticut, as outlined herein.

Purpose of Government-to-Government Consultation

The purpose of Government-to-Government consultation as described in the National Historic Preservation Act, Section 106, Federal Executive Order 13175, “Consultation and Coordination with Indian Tribal Governments,” and FAA’s Order 1210.20, “American Indian and Alaska Native Tribal Consultation Policy and Procedures,” is to ensure that Federally Recognized Tribes are given the opportunity to provide meaningful and timely input regarding proposed FAA undertakings that uniquely or significantly affect Tribes.

Consultation Initiation

With this letter, the FAA is inviting the Mashantucket Pequot Tribe of Connecticut to consult on concerns that may significantly affect your Tribe related to the proposed airport improvements. Early identification of Tribal concerns will allow the FAA and the airport owner and operator to consider ways to avoid, mitigate, or minimize potential impact to Tribal resources and practices as project alternatives are developed and refined.

Project Information

The project under consideration includes the demolition of Terminal B and construction of new terminal with associated improvements, including new roadways, parking garage, rental car facility, aircraft apron and utilities. Please see three enclosed plans: Projected Area, Existing Conditions, and Proposed Action.

Confidentiality

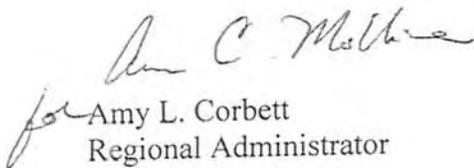
We understand that you may have concerns regarding the confidentiality of the information on areas or resources of religious, traditional, and cultural importance to the tribe. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained.

FAA Contact Information

Your timely response will assist us in incorporating your concerns into project planning. For that reason, we respectfully request that you contact FAA within thirty days of your receipt of this correspondence as to your interest in Government-to-Government Consultation regarding these projects.

You may contact FAA's Regional Tribal Consultation Official, Barbara Travers-Wright, by telephone at 781-238-7025, or by email at Barbara.Travers-Wright@faa.gov. At that time, the consultation request will be provided to the FAA, Airports Division.

Sincerely,


for Amy L. Corbett
Regional Administrator

Enclosure

cc: Ms. Kathleen L. Knowles, Tribal Historic Preservation Officer, Mashantucket Pequot Tribe of Connecticut (Certified Mail – Return Receipt Requested)



Figure 1-3. Project Area

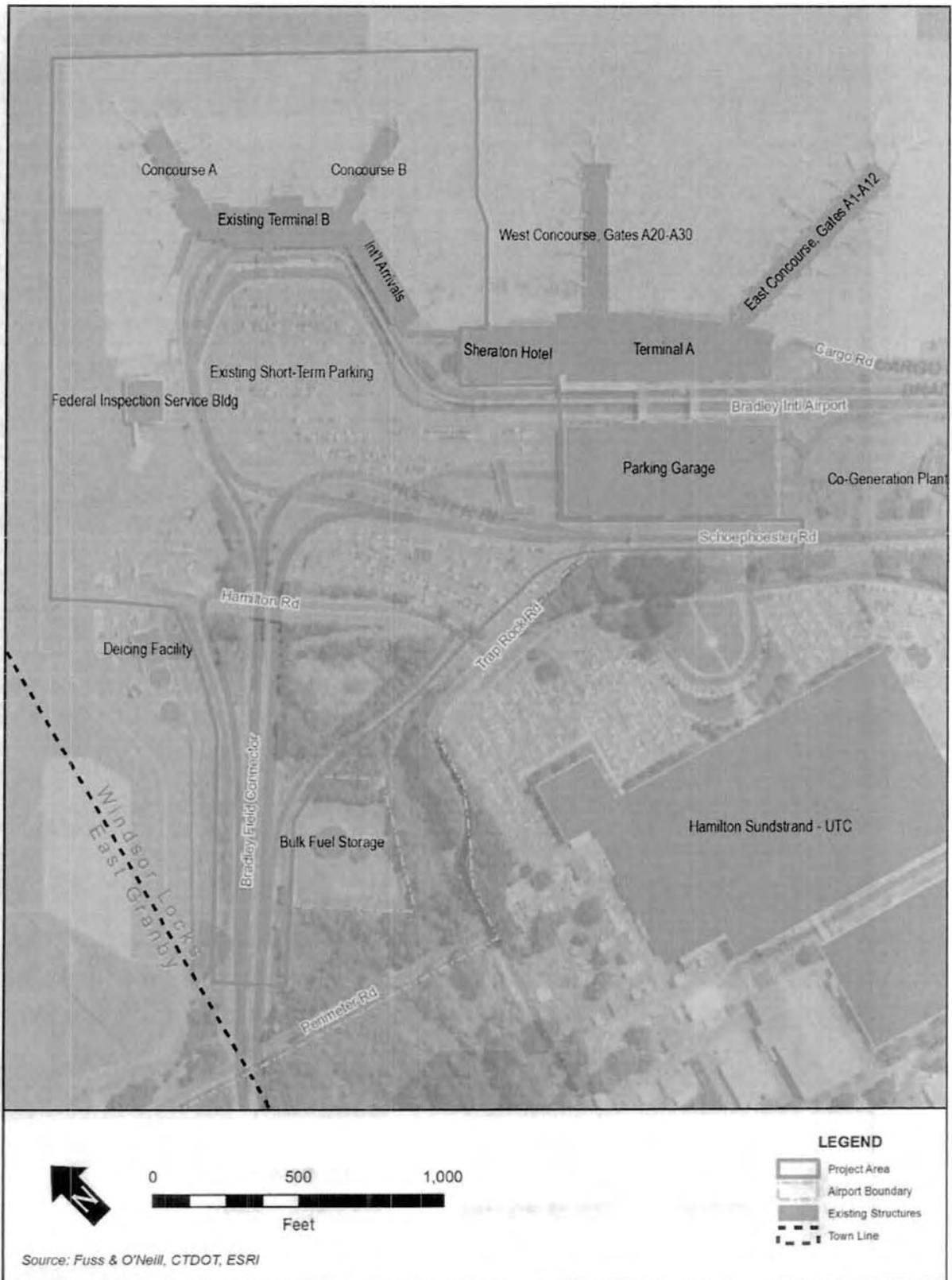


Figure 1-4. Existing Conditions

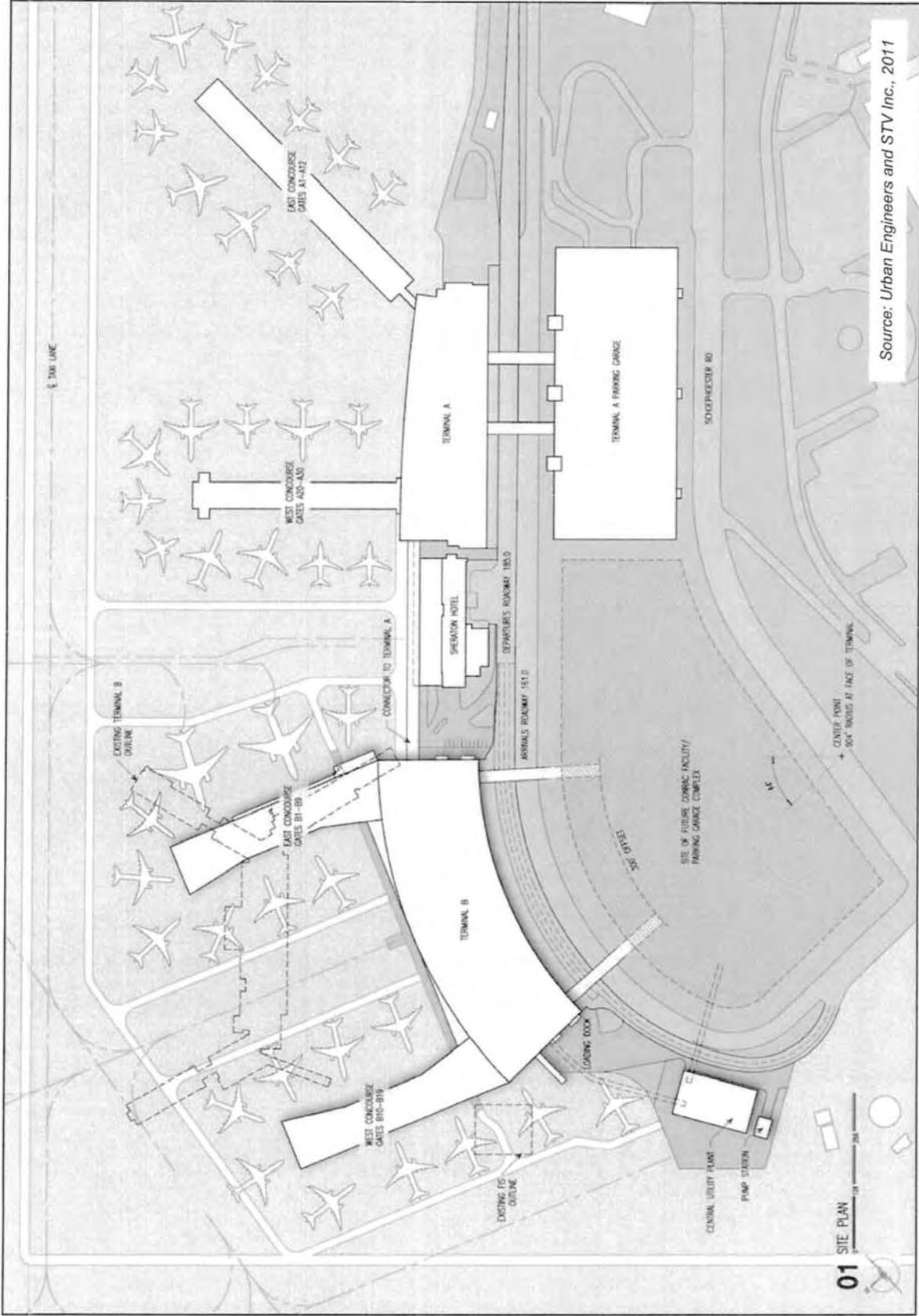


Figure 1-5. Proposed Action – Terminal, Landside, and Airside Facilities

Mrs. Travers-Wright,

The Mohegan Tribe has reviewed the information we received from FAA Regional Administrator Amy Corbett regarding the Airport Project at Bradley International Airport. We believe that no properties of historical, religious or cultural significance to the Mohegan Tribe will be affected by this project. However, the Mohegan Tribe does request consultation in the advent of an inadvertent discovery of human remains. If you have any questions please feel free to contact me. The Mohegan Tribe appreciates the opportunity to consult on this project in accordance with the National Historic Preservation Act.

Best Regards,
James

James Quinn
The Mohegan Tribe
Tribal Historic Preservation Officer
13 Crow Hill Rd.
Uncasville, CT 06382
Cell # (860) 367-1573
Office# (860)862-6893
Fax# (860)862-6395

From: richard.doucette@faa.gov [mailto:richard.doucette@faa.gov]
Sent: Thursday, March 15, 2012 12:38 PM
To: DiLuca, Jessica L
Cc: gail.lattrell@faa.gov
Subject: AIRPORT PROJECT AT BRADLEY INTERNATIONAL AIRPORT IN CT

See the response below from the Mashantucket Pequot Tribe, regarding the Bradley Terminal Project. The FAA hereby makes a finding of "no historic properties affected", for this project. Our work under the Natl Historic Preservation Act is complete.

Richard Doucette
Environmental Program Manager
FAA New England Region, Airports Division
(781) 238-7613

----- Forwarded by Richard Doucette/ANE/FAA on 03/15/2012 12:35 PM -----

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| From: |
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|"Knowles, Kathleen" <KKnowles@mptn-nsn.gov>
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| To: |
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|Richard Doucette/ANE/FAA@FAA |
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| Cc: |
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|Barbara Travers-Wright/ANE/FAA@FAA, "Bromley, Harriet" <HBromley@mptn-nsn.gov>, "Stevens, Sue" <SStevens@mptn-nsn.gov>
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| Date: |
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|03/15/2012 11:54 AM |
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|----->
| Subject: |
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|RE: AIRPORT PROJECT AT BRADLEY INTERNATIONAL AIRPORT IN CT
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Re: ENVIRONMENTAL ASSESSMENT & ENVIRONMENTAL IMPACT EVALUATION
PREPARED PURSUANT TO 42 U.S.C. 4321 et seq. AND REGULATIONS OF
CT STATE AGENCIES SECTION 22a-1a-1 TO 12, INCLUSIVE
NEW TERMINAL B PASSENGER FACILITY &
ASSOCIATED IMPROVEMENTS AT
BRADLEY INTERNATIONAL AIRPORT
WINDSOR LOCKS, CT
STATE PROJECT NO. 165-393

I have reviewed the Environmental Assessment & Environmental Impact Evaluation, New Terminal B Passenger Facility & Associated Improvements At Bradley International Airport, Windsor Locks, CT. The research design and testing strategy meets acceptable professional standards, and I agree with the recommendations and conclusions. Please keep me informed of any further developments with respect to this project.

Kathleen Knowles,
Tribal Historic Preservation Officer
Mashantucket Pequot Tribe

-----Original Message-----

From: richard.doucette@faa.gov [<mailto:richard.doucette@faa.gov>]
Sent: Monday, March 12, 2012 2:35 PM
To: Knowles, Kathleen
Subject: AIRPORT PROJECT AT BRADLEY INTERNATIONAL AIRPORT IN CT

Good Afternoon Kathleen. I received your response regarding the proposed work at Bradley International Airport in Windsor Locks CT. Here is the web link to the working draft of the Environmental Assessment. No password is needed. The document is on a website hosted by the consultant Fuss & O'Neill Inc. I just tested the link, and it seems to work fine. Just select "download your file" and the entire document will be downloaded.

<https://fando.filetransfers.net/downloadFilePublic.php?filePassId=4960ad24186d176a6fd7085bcd0b301e>

If you have any questions or comments, do not hesitate to contact me.

Richard Doucette
Environmental Program Manager
FAA New England Region, Airports Division
(781) 238-7613