Record of Decision

North Hillside Road Extension
Mansfield, Connecticut

Federal Highway Administration, Connecticut Division
Connecticut Department of Transportation
University of Connecticut

A. Decision

The Federal Highway Administration (FHWA), in accordance with 23 CFR part 771, which governs the Federal environmental review process for transportation projects funded by FHWA, has decided that the requirements of the National Environmental Policy Act of 1969 (NEPA), as amended, have been satisfied for the North Hillside Road Extension Project located in Mansfield, Connecticut.

FHWA has selected an alternative for the North Hillside Road Extension project. This Record of Decision (ROD) identifies the Selected Alternative, explains the basis for this decision, identifies alternatives considered, provides background and specifics to the alternative chosen, and identifies means chosen to avoid and mitigate unavoidable environmental impacts.

The Selected Alternative is Roadway Alignment Option A and North Campus development Alternative 2C, including modified wetland crossings, a conservation easement, and other mitigation measures identified in this document and the October, 2011 Final Environmental Impact Statement (FEIS).

To address the identified purpose and need, the Selected Alternative will continue the existing North Hillside Road on the University of Connecticut (UConn), Storrs Campus from its current terminus northward to Route 44. The extension will construct an approximately 3,400-foot, 2-lane, 32-foot wide road through a portion of land adjacent to the Storrs core academic campus known as the “North Campus.” The project will provide an alternative entrance to UConn, relieve traffic on surrounding roads, and facilitate the development of the North Campus.

The need for the North Hillside Road Extension results from the existing and anticipated traffic in the vicinity of the Storrs Campus and the associated effects on roadway capacity and level of service in the area surrounding the campus, especially U.S. Route 44, Route 195, and Hunting Lodge Road. The new road is also needed to facilitate the development of UConn-related academic and research buildings and student facilities, consistent with the UConn master plan for development of the North Campus.

B. Basis for the Decision

The Selected Alternative was chosen based on analyses contained in the Draft EIS issued in December 2008, the FEIS, and the comments of federal and state agencies, other organizations,
members of the public, and elected officials. As described in the Alternatives Analysis contained in the FEIS, the selection of the preferred roadway alignment and North Campus development alternative was based upon consistency of the various alternatives with the identified purpose and need for the project and consideration of potential impacts to environmental resources. The key environmental impacts considered were:

- Wetland impacts - the acreage of wetland impacts and the number of individual wetland systems impacted (i.e., wetland crossings);
- Vernal pools - the acreage of impacts to vernal pools, development within the critical upland habitat, and impacts on amphibian migration;
- Prime farmland soils – the acreage of impacts to prime farmland soils on the North Campus and in adjacent off-site areas;
- Cultural resources - potential impacts to documented areas of moderate to high archaeological sensitivity.

Coordination with state and federal resource agencies during the NEPA process resulted in reduction of the North Campus development envelope and several key project modifications of the Option A roadway alignment to address concerns regarding wetland impacts and habitat connectivity for aquatic resources. The two wetland crossings of greatest concern to the resource agencies (Crossings A and C) were re-designed to essentially eliminate wetland impacts and maintain habitat connectivity for aquatic resources and other wildlife.

With these project modifications, in addition to a proposed conservation easement and other mitigation measures described in the FEIS, Roadway Alignment Option A and North Campus development Alternative 2C were ultimately selected as the preferred alternative. This alternative addresses the project purpose and need by providing an alternative entrance to the Storrs campus and relieving traffic on the surrounding roadway network. This alternative also reflects the overall roadway and parcel development scenario that best addresses UConn’s goals for development of the North Campus while minimizing impacts to the on-site wetlands and maintaining habitat connectivity.

C. Alternatives Considered

The alternatives considered in the preparation of the EIS incorporated information on prior analyses conducted as part of the review of the North Campus development and North Hillside Road extension under the Connecticut Environmental Policy Act (CEPA). The analyses were revisited in light of updated information obtained to describe natural and physical resources in the project area. In addition to the No Action Alternative, other reasonable alternatives considered include alternative development sites, alternative roadway alignments, and alternative North Campus development plans.

No Action Alternative

The No Action Alternative assumes that no Federal funds would be expended for the completion of North Hillside Road. In the absence of Federal funding for the roadway extension, it is uncertain what future development, if any, would occur on the North Campus.
Furthermore, the No Action Alternative would potentially result in the loss of significant state and private sector investments for the UConn research and technology park. Due to this uncertainty, the FEIS assumed that no further development of the North Campus would occur under the No Action Alternative.

The State Traffic Commission (STC) Certificate of Operation for the “UCONN 2000” Campus Master Plan development projects identified the North Hillside Road extension as an important measure for mitigating traffic impacts from construction of UCONN 2000 projects. If the extension is not constructed, an important measure for mitigating increased traffic resulting from the UCONN 2000 development program will not be implemented and outbound (northbound) vehicles will not be shifted from both Hunting Lodge Road and Route 195 north of North Eagleville Road during the peak afternoon traffic hour. Under the No Action Alternative, no further development of the North Campus would occur, an important traffic mitigation measure required by the STC Certificate of Operations for the UCONN 2000 Campus Master Plan development projects would not be implemented, and the objectives of the Outlying Parcels Master Plan for the North Campus would not be achieved. The No Action Alternative is inconsistent with the STC Certificate, the Outlying Parcels Master Plan, and the Connecticut Department of Transportation (CTDOT) State Transportation Improvement Plan and is therefore not considered an acceptable alternative.

The No Action Alternative would therefore not address the identified purpose and need for the project, which is to provide an alternative entrance to UConn, relieve traffic on surrounding roadway network, and facilitate the development of the North Campus.

**Alternative Development Sites**

Alternative development sites can be considered in terms of (1) feasible alternative roadway locations and (2) feasible alternative locations for the development of a research and technology park such as the one described in the Outlying Parcels Master Plan. There is no other site in the vicinity of the campus that would allow for traffic from the Storrs core academic campus to reach Route 44, so there is no other feasible alternative for a new roadway into campus that would divert existing traffic from residential areas near Route 44 (thereby satisfying STC Certificate traffic mitigation commitments) and provide a more direct route and gateway entrance to the campus.

The 1994 Environmental Impact Evaluation (EIE) prepared pursuant to CEPA examined the suitability of the former Mansfield Training School (now called the Depot Campus), the other large tract of land in proximity to the main campus, for potential development of a research park. The conclusion in the 1994 EIE was that the site was not suitable for the technology park that was envisioned at the time due to regulatory barriers and physical site constraints. This was reaffirmed in the 2001 EIE and both the EIE and the Outlying Parcels Master Plan identified the North Campus site as suitable for a research and development technology park.

---

1 UCONN 2000 is a $2.3 billion, 20-year State infrastructure program to renew, rebuild and enhance the University of Connecticut campuses.
Build Alternatives

Roadway Alignment

The 1994 EIE initially examined six alternative roadway alignments (see Figure ES-3 in the FEIS). Each of these alignments was examined for consistency with the project purpose and need and further screened to assess their impact on wetlands, public safety, traffic congestion relief, and value to research park development. Through the EIE process, the roadway alignment alternatives were narrowed to Option A (a composite of the A-1 through A-4 options) and Option B (a modification of Option B-2 which connected to the existing North Hillside Road). Ultimately, a 4,000 foot roadway alignment presented in the 1994 EIE as Option B was selected. In the 2001 North Campus Master Plan EIE the Option A roadway alignment was presented because it was more environmentally sensitive, with fewer impacts on wetlands and farmlands than Option B. This preferred alignment was approved by the Connecticut Office of Policy and Management (OPM) and is the alignment that the current design follows.

For the preparation of the DEIS, the potential wetlands impacts of the Option A and Option B alignments were reviewed in light of the 2006 wetlands delineation. The Option B alignment would result in approximately 0.86 acres of wetland impacts compared to 0.34 acres of wetland impacts for Option A. Consequently, Option A, identified as the preferred alternative alignment in the 2001 EIE, was identified in the DEIS as the most feasible and prudent alternative that balances the need for the roadway extension with avoiding and minimizing environmental impacts. Option A was identified in the DEIS as the preferred roadway alignment (i.e., the DEIS Preferred Alternative). Subsequently, in the FEIS it was determined that 0.31 acres of wetland impact were identified for Option A, including 0.09 acres of direct wetland impacts associated with the roadway and 0.22 acres of indirect wetland impacts associated with the North Campus parcel development, as discussed below.

Based on comments received from the resource agencies on the DEIS, the roadway alignments that were considered in the previous EIEs (Options A, A-1, A-2, A-3, A-4, B-1, and B-2) were further evaluated based on potential impacts to wetlands and other environmental resources, including vernal pools (and related amphibian migration), which had not yet been identified at the project site when the previous EIEs were prepared. One additional roadway alignment was also evaluated (Option A-5), which is a modification of the A-3 alignment as described below.

Each of these roadway alignments was evaluated based on wetland impacts, habitat connectivity, and other environmental factors. Based on the results of the evaluation, Connecticut Department of Energy and Environmental Protection (DEEP) and U.S. Army Corps of Engineers (ACOE) requested supporting information to compare the Option A roadway alignment and the Option A-5 alignment, which would not sever Vernal Pool 1 from the Red Maple Swamp vernal pool complex to the west.

Further coordination with DEEP and ACOE in January and February 2010 resulted in several key project modifications of the Option A alignment to address the remaining concerns regarding wetland impacts and habitat connectivity for aquatic resources. The two wetland crossings of greatest concern (Crossings A and C) were re-designed to essentially eliminate...
wetland impacts and maintain habitat connectivity for aquatic resources and other wildlife. Crossing A is designed as a 40-foot precast concrete rigid frame with open bottom designed to comply with the Connecticut Department of Energy and Environmental Protection (DEEP, formerly the Connecticut Department of Environmental Protection) and ACOE stream crossing standards, and Crossing C is designed as a 76-foot clear span bridge to completely avoid wetland impacts and maintain vernal pool habitat connectivity for semi-aquatic resources and terrestrial wildlife. These design modifications resulted in direct wetland impacts of 0.09 acres for the Option A roadway alignment, which was selected as the preferred roadway alignment in the FEIS. The following table presents a summary comparison of environmental impacts of the various alternative roadway alignments.

### Environmental Impacts of Roadway Alternatives

<table>
<thead>
<tr>
<th>Road Alignment Alternative</th>
<th>Direct Wetland Impacts (Acres)*</th>
<th>Number Wetland Crossings</th>
<th>Direct Vernal Pool Impacts (Acres)**</th>
<th>Development within 750-Foot Critical Upland Habitat (Acres)**</th>
<th>Impacts to Vernal Pool Amphibian Migration</th>
<th>Impacts to Areas of Mod-High Prehistoric Potential (Acres)**</th>
<th>New Impervious Cover (Acres)</th>
<th>Prime Farmland Soil Impacts (Acres)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.09</td>
<td>3</td>
<td>0</td>
<td>10.2</td>
<td>Low</td>
<td>0.0</td>
<td>3.4</td>
<td>4.0</td>
</tr>
<tr>
<td>A-1</td>
<td>0.37</td>
<td>3</td>
<td>0</td>
<td>9.8</td>
<td>High</td>
<td>0.9</td>
<td>3.3</td>
<td>4.2</td>
</tr>
<tr>
<td>A-2</td>
<td>0.14</td>
<td>2</td>
<td>0</td>
<td>8.9</td>
<td>Low</td>
<td>2.5</td>
<td>3.0</td>
<td>4.0</td>
</tr>
<tr>
<td>A-3</td>
<td>0.17</td>
<td>2</td>
<td>0</td>
<td>10.6</td>
<td>Medium</td>
<td>0.4</td>
<td>3.5</td>
<td>7.6</td>
</tr>
<tr>
<td>A-4</td>
<td>0.74</td>
<td>3</td>
<td>0.35</td>
<td>9.7</td>
<td>High</td>
<td>1.2</td>
<td>3.2</td>
<td>3.9</td>
</tr>
<tr>
<td>A-5</td>
<td>0.08</td>
<td>1</td>
<td>0</td>
<td>11.4</td>
<td>Medium</td>
<td>0.5</td>
<td>3.7</td>
<td>8.2</td>
</tr>
<tr>
<td>B-1</td>
<td>0.65</td>
<td>4</td>
<td>0</td>
<td>7.8</td>
<td>High</td>
<td>2.6</td>
<td>4.2</td>
<td>2.8</td>
</tr>
<tr>
<td>B-2</td>
<td>1.43</td>
<td>4</td>
<td>0</td>
<td>12.5</td>
<td>High</td>
<td>3.2</td>
<td>3.9</td>
<td>2.8</td>
</tr>
</tbody>
</table>

The above table summarizes direct impacts (i.e., those impacts associated with the proposed roadway corridor). Secondary impacts associated with the North Campus parcel development are the same for each roadway alignment alternative for the primary and secondary factors listed in the table. * Assumes average 100-ft width disturbance, ** Assumes average 150-ft width disturbance.

### North Campus Development

Alternatives for the development of the North Campus have been analyzed in the 1994 EIE, the Outlying Parcels Master Plan and associated North Campus Master Plan EIE, and again as part of the EIS and wetlands permitting (Section 404) process.

In the 1994 EIE, the development alternatives were driven by the roadway alignment and the goal of avoiding both inland wetlands and associated wetland buffer areas. In the 1994 EIE, the North Campus development alternatives were narrowed to development plans associated with the roadway alignment Options A and Option B (as described above). Both alternatives included five primary building sites and both were presented as possible designs for the technology park development.

The 2000 Outlying Parcel Master Plan revisited the development concepts for the North Campus in terms of UConn’s long-term master planning, with an emphasis on optimal resource...
Selected Roadway Alignment and North Campus Development Alternative
utilization and efficient development that incorporates sustainable design principles. This approach inherently reduces indirect impacts from the roadway extension. The Master Plan identified 12 potential development parcels located on both sides of a proposed North Hillside Road extension that followed the roadway alignment of Option A presented in the 1994 EIE. The 2001 EIE for the North Campus Master Plan defined 10 development sites, while still achieving the total maximum building space of 1.2 million square feet.

As part of the Section 404 wetlands permitting and the preparation of the DEIS and FEIS, the North Campus development alternatives were revisited. Five conceptual North Campus development alternatives (Alternative 1, 2A, 2B, and 2C) were evaluated, including consideration of development area, impervious cover, and wetland impacts. The proposed roadway alignment is the same for all five development scenarios (Option A as discussed in the previous section). Alternatives 1 through 2B reflect the box culvert wetland crossing design that was presented in the DEIS Preferred Alternative. Alternative 2C reflects the modified crossing designs at Crossings A and C. All five alternative development concepts reflect the most recent wetland delineation for the entire North Campus project area performed in 2006 and the 2008 updated wetland delineation for Parcel C.

Alternative 1 (Figure 3-2 in the FEIS) was based on the Option A layout presented in the 1994 EIE. This alternative results in eight areas of wetland impacts on four development parcels and three areas of wetland impacts along the roadway, totaling approximately 2.64 acres and numerous encroachments into the 100-foot upland envelope surrounding the wetlands. Based on these impacts, Alternative 1 was found to be environmentally unacceptable and was dismissed.

Alternative 2 (Figure 3-3 in the FEIS) was developed based upon the planning principles and recommended land uses contained in the Outlying Parcels Master Plan and the associated 2001 EIE. This alternative reduces wetland impacts but includes some development within the 100-foot upland envelope. This alternative results in two areas of wetland impacts isolated to Parcel C and three areas of wetland impacts along the roadway, totaling approximately 1.23 acres, and several encroachments into the 100-foot upland envelope.

A third alternative was developed (Alternative 2A) in an effort to further reduce wetland impacts and development within the 100-foot upland envelope, while still meeting the building floor area, parking, and land use program requirements outlined in the Outlying Parcels Master Plan and the 2001 EIE and associated EIE Record of Decision (ROD). Alternative 2A (Figure 3-4 in the FEIS) provides approximately 1.2 million square feet of total building area and 4,475 parking spaces, including existing parking on Parcel F and Parcel H. This alternative results in one area of wetland impacts on Parcel C and three areas of wetland impacts along the roadway, totaling approximately 0.77 acres.

The North Campus development concept was further refined (referred to as Alternative 2B) based upon issues and concerns raised by DEEP, ACOE, and the U.S. Fish and Wildlife Service during an agency coordination meeting and site walk held at the UConn Storrs Campus on March 6, 2008. The proposed development on the northern portion of Parcel J was relocated to the former agricultural field between wetlands A and B to preserve an undisturbed wetland and amphibian migration corridor on the northern portion of the site. Proposed
development on Parcel C was also reconfigured to limit site disturbance to the northern side of the existing dirt access road. Alternative 2B (Figure 3-5 in the FEIS) was identified as the preferred North Campus development alternative in the DEIS, resulting in further reduced wetland impacts (0.56 acres) and improved habitat connectivity on the northern portion of the site.

Additional coordination with DEEP and ACOE in January and February 2010 resulted in several modifications to the North Campus concept development plan to address the remaining concerns regarding wetland impacts and habitat connectivity for aquatic resources. The North Campus concept development plan was modified to eliminate the previously proposed development on Parcel A and preserve an additional 76 acres on the North Campus (including Parcel A and a proposed wetland mitigation area) through a conservation easement. The revised North Campus development concept is referred to as “Alternative 2C” in the FEIS.

Alternative 2C (Figure 3-6 in the FEIS) provides approximately 1.2 million square feet of total building area and 4,475 parking spaces, including existing parking on Parcel F (W-Lot), Parcel L (landfill parking lot), and Parcel H (Charter Oak residential units), while limiting total wetland disturbance from the roadway extension (0.09 acres of direct impacts) and North Campus development (0.22 acres of indirect impacts) to 0.31 acres. Development that was previously proposed for Parcel A under Alternative 2B has been re-allocated by increasing the density of development on Parcel B to maintain a maximum building space for the North Campus of approximately 1.2 million square feet.

D. Project Background

The construction of a roadway from North Eagleville Road (State Route 430) to U.S. Route 44 has been contemplated since the 1970s, when the area of land known as the North Campus was considered for the development of a research and technology park. In 1982, the non-profit entity called the University of Connecticut Educational Properties, Inc. (UCEPI) was formed to develop a research park on the area of state-owned land north of the UConn main campus, now called the North Campus. In 1987, the construction of an approximately 3,800 linear foot North Hillside Road was reviewed in an EIE prepared pursuant to CEPA. After approval of the EIE, the State began construction of the existing North Hillside Road, which was completed in summer 1989. After a change in developer, a CEPA EIE for Actions Associated with a Research and Technology Park was released in May 1994. In the 1994 EIE, six alternative site layouts with slightly different roadway alignments and parcel configurations were initially considered, and then two configurations, called Option A and Option B, were analyzed in detail in the 1994 EIE. Although a preferred alternative for the alignment was not explicitly identified in the EIE, CTDOT began design for the Option B road alignment following approval of the document. UCEPI was unsuccessful at developing the research project and design plans for the North Hillside Road Extension halted at the 60% design stage.

In June 2000, UConn released the Outlying Parcels Master Plan that includes a master plan for development of the North Campus. An EIE for actions associated with the development of the North Campus was completed in 2001. The EIE recommends the Option A alignment proposed in the 1994 EIE, which was more environmentally sensitive than the Option B alignment, resulting in fewer impacts to inland wetland resources and farmland soils. The
Connecticut Office of Policy and Management (OPM) subsequently found the 2001 EIE to adequately comply with CEPA, but required that a comparative analysis be conducted for the development of future projects, beyond the roadway project and the Charter Oak Apartments, which were approved previously under the 1994 EIE.

In addition, given the lapse of time since the 2001 EIE for the North Campus Master Plan, OPM requested a comparative analysis due to concerns regarding potential differences in background traffic growth anticipated by the previous EIEs and current traffic projections. The comparative analysis was submitted to OPM in January 2007. OPM issued a decision letter dated October 1, 2007, indicating that, based on their review of the submitted documentation, the 2001 EIE is still valid relative to the impacts associated with the North Hillside Road extension project.

In 2005, approximately $6 million in federal funding was appropriated for the construction of the North Hillside Road Extension. The presence of federal funding for the project requires compliance with the National Environmental Policy Act (NEPA). FHWA, together with CTDOT, determined that an Environmental Impact Statement (EIS) is the appropriate level of NEPA documentation for the project. FHWA is the Lead Agency for the project. Both CTDOT and UConn (the Project Sponsor) are Joint Lead Agencies as defined in 23 CFR §771.109.

Connecticut Governor Dannel P. Malloy signed legislation in October 2011 (Public Act 11-57) approving the creation of a research and technology park at the UConn North Campus. The General Assembly approved $172.5 million in required start-up funding for the project, including the research and technology park’s flagship building, the Innovation Partnership Building. Once completed, it is anticipated the research and technology park will attract hundreds of permanent high-quality jobs, encourage new business growth through high-tech innovations and generate tens of millions of dollars in federal and private funding for advancing research.

E. Selected Alternative

The Selected Alternative approved in this ROD is the University of Connecticut’s and the State of Connecticut Department of Transportation’s preferred alternative, which is identified in the FEIS as the Option A roadway alignment and the North Campus Development Alternative 2C, including modified wetland crossings, and an additional 76-acre conservation easement on the northwest portion of the North Campus (including portions of Parcels A, C, E, J and the wetland mitigation area). This alternative was selected because it reflects the overall roadway and parcel development scenario that best addresses UConn’s goals for developing the North Campus while minimizing impacts to the on-site wetlands and maintaining habitat connectivity. FHWA has reviewed the ROD and FEIS for the North Hillside Road Extension, and contends that it presents the basis for the decision, identifies all the alternatives considered, specifies the “environmentally preferable alternative,” and provides information on the adopted means to avoid, minimize and compensate for environmental impacts.
F. Environmental Consequences

The following sections summarize the principal environmental consequences of the proposed project, including direct impacts associated with the roadway extension and indirect or secondary impacts resulting from development of the North Campus parcels. Most of the environmental consequences associated with the project are due to indirect impacts associated with the development of the North Campus. Sectors of the environment that are addressed in the FEIS for which minimal or no impacts are anticipated include social impacts, joint development, floodplain impacts, wild and scenic rivers, coastal barriers, coastal zone impacts, and hazardous waste sites.

Land Use

All alternative alignments considered for the roadway corridor will have a relatively limited direct impact in terms of land use conversion. The alternative roadway alignments will have similar indirect land use impacts in terms of conversion of woodland and agricultural land to developed areas. However, since the area of the proposed project has access to sufficient infrastructure to support development, includes the expansion of higher education within Connecticut, and since the proposed project is specifically identified as a development area in each of the relevant land use plans, the indirect land uses change resulting from the North Hillside Road extension is consistent with overall land use planning on the local, regional, and state level.

Farmland

Direct impacts to farmland soils from the proposed North Hillside Road Extension are limited to 2.3 acres along the roadway corridor. Indirect impacts to farmland soils are associated with development of the North Campus parcels, including portions of Parcels B, H, J, and K (29.6 acres) and the creation of a wetland mitigation area adjacent to existing wetlands located east of Parcel D. UConn acknowledges its responsibility to comply with the acre-for-acre farmland mitigation terms identified in the 1994 and 2001 CEPA EIEs. UConn will replace a total of 34.1 acres of prime farmland on UConn-owned property located near UConn’s Depot Campus and Spring Manor Farm. UConn also proposes to preserve 41.5 acres of prime farmland for cultivation by the College of agriculture and Natural Resources (CANR) on UConn-owned property located on or adjacent to the North Campus.

Relocation and Rights-of-Way Acquisition

UConn expects to acquire a Right-of-Way (ROW) along areas of the existing driveway entrance from Route 44 at the northern end of the proposed roadway extension. These areas on private commercial property would need to be widened for the proposed intersection of North Hillside Road and Route 44. There are no residential properties in this area and the ROW would not require, nor is UConn proposing, relocation of the two existing businesses at this intersection. UConn has requested CTDOT to act as its agent for ROW acquisition and is currently developing a Memorandum of Understanding with CTDOT to formalize this arrangement. If needed, UConn will determine the extent of mitigation required, if any, at a later point in the roadway design process. UConn will take into account existing land use and underlying zoning
during the ROW acquisition process in order to avoid or minimize effects on parking and ensure consistency with local zoning.

**Economic**

The North Hillside Road extension and North Campus development will generate short-term construction jobs and will fuel both short- and long-term employment and economic recovery through the proposed North Campus technology and research park. The technology and research park is a critical component of Connecticut’s plan to stimulate long-term economic growth by supporting innovation, new technologies, UConn-industry partnerships, and the creation of new companies, high-paying, sustainable jobs, and professional opportunities for UConn graduates.

**Traffic and Considerations Related to Pedestrians and Bicyclists**

Additional traffic generated as a result of the development of the North Campus will result in declines in the Level of Service (LOS) at intersections in the project area. Under the 2030 Full Build condition, optimizing the signal timing at each intersection within the network will allow most of the signalized intersections to continue to operate acceptably during both peak hours. Several geometric improvements are recommended at full build out of the North Campus development in order to maintain acceptable levels of service at all of the signalized intersections within the study area.

Pedestrian and bicycle facilities will be constructed as part of the North Hillside Road Extension, including a bituminous pedestrian sidewalk on the east side of the roadway and a separate bicycle lane within the curb line in each direction. This will provide a direct connection for pedestrians and bicyclists between Route 44 and the UConn campus, thereby encouraging alternative modes of transportation and contributing to a reduction in vehicular traffic. Once the roadway is completed, existing transit service on the UConn campus will be extended to include the new section of North Hillside Road.

**Air Quality**

Analysis of microscale impacts on carbon monoxide (CO) concentrations were evaluated using existing projected traffic data and EPA’s CAL3QHC, a line source dispersion model and traffic algorithm for estimating vehicular queue lengths at signalized intersections. The model was used to estimate the maximum ambient CO concentrations at intersections anticipated to experience the largest decline in level of service (LOS) under 2030 full build conditions. Although the study area intersections are impacted by increased traffic, maximum one-hour and eight-hour CO concentrations at the subject intersections are estimated to be well below the Connecticut and National Ambient Air Quality Standards (NAAQS) for CO.

CTDOT conducted mesoscale analysis using the MOBILE6.2 emissions model to calculate nitrogen oxide (NOₓ) and volatile organic compound (VOC) emissions and determine conformity with NAAQS for ozone. The analysis found an overall anticipated decrease in emissions of VOCs and NOₓ by 2030 in the air quality district in which the project is located due to a decline in ozone precursor compound emissions as a result of more stringent national
emissions control programs. The projected emissions are below those required to maintain compliance with the State Implementation Plan and the NAAQS for ozone.

**Greenhouse Gas Emissions and Energy**

Construction of the proposed road extension and North Campus facilities will result in increased indirect greenhouse gas (GHG) emissions primarily from fuel usage by vehicles traveling to and from the facilities, direct stationary emissions from fuel usage in the on-site buildings, and indirect stationary emissions from energy consumption (co-generation and off-site energy sources). The North Campus buildout is projected to increase state-wide transportation carbon dioxide (CO$_2$) emissions by 0.1%. Connecticut transportation-related CO$_2$ emissions are approximately 0.05% of the global total CO$_2$ emissions. The North Campus buildout is projected to increase campus CO$_2$ emissions from energy consumption by approximately 7-8%. Additional campus-wide CO$_2$ emissions reductions will be realized through on-going building retrofits and other measures including UConn’s sustainable energy initiatives and Leadership in Energy and Environmental Design (LEED) Silver Policy, as well as GHG reduction targets established by Connecticut’s Global Warming Solutions Act (GWSA).

The Proposed Action includes a number of design elements and mitigation measures that will reduce potential increases in GHG emissions associated with the roadway extension and the North Campus facilities. The North Campus facilities will be developed following UConn’s Sustainable Design & Construction Policy, which has provisions requiring any new building construction or renovation project entering the pre-design planning phase to establish the LEED Silver rating as a minimum performance requirement. Comprehensive approaches to energy efficiency in the design of the new buildings will help to offset increased energy consumption and reduce potential increases in GHG emissions. UConn, through its Environmental Policy Advisory Council and related workgroups, will continue to update and implement the recommendations of its Climate Action Plan, which will also guide the design of the North Campus facilities.

Energy consumption estimates (1994) were based on 1.2 million square feet of building area and the proposed land uses at the time, and are likely to be conservative given increased energy efficiency of equipment and building design. Actual energy consumption will be a function of the mechanical and electrical equipment within individual buildings as well as the programmatic function of those facilities. A building with more demanding operational requirements for heating, cooling, ventilation, and equipment, such as a laboratory building, typically has more energy usage than other buildings of the same size. Both the 1994 and 2001 EIEs indicated that energy demands could be met for the North Campus development. Development of the new buildings on the North Campus will involve comprehensive approaches to energy efficiency which will help to offset increased energy consumption.

**Noise**

Future peak-hour noise levels were predicted using the Traffic Noise Model 2.5 (TNM). The model uses FHWA Vehicle Noise Emission Levels and was used to determine noise impacts associated with the proposed project at receivers previously identified in the 1994 EIE. The maximum predicted noise level increase associated with site-generated traffic in the 2030 Build
scenario is 2.2 dBA over existing conditions. All are below the 67 dBA noise abatement criteria for the relevant Category B land use activity used by FHWA.

Surface Water and Groundwater Resources

The proposed development of the North Campus is anticipated to result in an increased water demand of approximately 90,000 gallons per day, in addition to the approximately 45,000 gallons per day consumed by the existing Charter Oak residential units. Under normal streamflow conditions with all demands realized, including the proposed development of the North Campus, UConn would have an adequate amount of water under both average and peak month conditions with the full registered withdrawals from the Fenton and Willimantic River wellfields, which are the UConn water supply. However, intermittent seasonal low flow conditions have the potential to cause voluntary limits on withdrawal to rates that are less than the registered diversions. UConn has modified withdrawal protocols at the Fenton River wellfield to incorporate recommendations of the Fenton River study. UConn is also following the demand-based water conservation recommendations outlined in the Willimantic River study, which are based on Willimantic River streamflow values that trigger voluntary or mandatory water conservation actions under the drought response plan. UConn is also considering the use of non-potable reclaimed water to address the water demands of the UConn Central Utility Plant and campus irrigation.

The build-out of parcels along North Hillside Road, or any other campus developments with potential impacts to water demand, will not happen all at once and is likely to occur over a 20-30 year time frame. Each new development along North Hillside Road will require at least a CEPA Comparative Evaluation. The Comparative Evaluation will include a refined analysis of parcel-specific water demand with respect to available supply at the time of the proposed development. Additionally, any new facilities built along North Hillside Road will be held to a high standard of water conservation through the use of high-efficiency fixtures and other features consistent with UConn’s Sustainable Design & Construction Policy.

The proposed extension of North Hillside Road and development of the North Campus will increase the amount of impervious cover (IC) at the project site. If unmitigated, this increase in impervious area could result in a number of hydrologic changes at the site that could impact the water quality of the receiving water bodies. The approximately 35 acres of new impervious cover resulting from the roadway extension and North Campus development would result in an approximately 2% increase in IC of the Cedar Swamp Brook subwatershed and an approximately 1% increase in IC of the Mason Brook subwatershed. It is estimated that IC in the subwatersheds will remain at 10% or less, levels which are generally indicative of healthy stream systems that have been minimally impacted by human activity. Potential impacts associated with increases in IC as a result of the proposed project will be mitigated by the project design, including the preservation of wetland/watercourse buffers and the proposed stormwater management system, as described elsewhere in this document.

The potential impacts of new impervious cover on Parcel G, a portion of which will discharge to Eagleville Brook, will be effectively mitigated by preserving wetland/watercourse buffers and implementing new stormwater management controls for the entire North Campus development, which is consistent with the Eagleville Brook IC Total Maximum Daily Load objectives.
The western portion of Parcel A lies within the area of contribution to the supply wells that serve the Rolling Hills Mobile Home Park. Under the preferred North Campus concept development scenario, Parcel A will be preserved through a conservation easement. The eastern portion of Parcel B is located within the Fenton River watershed, which is a public water supply watershed. Under any of the project alternatives, the proposed development in this area could potentially impact groundwater quality resulting from infiltration of untreated stormwater runoff or release of chemicals or other hazardous materials to the environment. In addition to stormwater management practices to reduce the effects of IC, construction-phase best management practices will also be implemented to reduce the potential for impacts on nearby public drinking water supply wells and surface water supplies.

**Stormwater Management**

Construction of the proposed roadway and subsequent development of the North Campus will result in increased stormwater runoff. The proposed stormwater management system for the roadway extension and the conceptual stormwater management system for the North Campus development include a variety of stormwater management methods, including Low Impact Development (LID) techniques, to achieve stormwater quantity and quality objectives consistent with the stormwater management standards and design guidelines in the DEEP Connecticut Stormwater Quality Manual and UConn’s Sustainable Design & Construction Policy. The project will not result in increases in peak runoff over existing conditions for storms up to and including the 100-year storm for any of the drainage areas analyzed within the project area. In addition, the proposed stormwater management system for the project site is designed to preserve the existing hydrologic conditions to the extent possible, including drainage patterns, runoff volume, groundwater recharge, and runoff quality.

Project-specific parking requirements for individual North Campus developments will be reviewed and coordinated as part of the CEPA Comparative Evaluation process and permitting for each future development parcel, as well as the associated agency review process, to ensure the lowest possible parking and impervious cover is provided. All planned and future infrastructure expansion on the North Campus, including both UConn and private development, will be required to use pervious pavement wherever feasible based on consideration of technical feasibility, maintenance, and cost.

**Wetlands**

Two wetland areas, totaling 0.09 acres, will be directly impacted by the proposed roadway construction. Indirect impacts to wetlands resulting from the development of the North Campus parcels are estimated at 0.22 acres. The wetlands to be disturbed are primarily broad-leaf deciduous forested areas. The total area of proposed wetland impacts for the roadway extension and associated North Campus development is 0.31 acres. The proposed mitigation consists of an approximately 2.2-acre wetland creation involving expansion of the forested wetland adjacent to an agricultural field. Other wetland mitigation measures include preservation of an undisturbed wetland and amphibian migration corridor on the northern portion of the site through a conservation easement, a comprehensive stormwater management system design for the North Campus development, wetland crossing designs that avoid or minimize wetland impacts and maintain habitat connectivity, avoidance of the 100-foot upland...
envelope around the existing wetlands, limiting development to less than 25% of the area within the 750-foot critical upland habitat area of vernal pools, preservation of 85% or more of the upland habitat within 500 feet of vernal pools, and potential stream bank restoration of an on-site intermittent stream on the project site.

**Water Body Modification and Wildlife Habitat**

The proposed project does not include impoundment, relocation, channel deepening, filling, or other modifications to water bodies or watercourses as a primary goal of the project. Direct and indirect impacts of the roadway extension include loss of existing woodland, grassland & field, and wetland habitat. The amount of habitat types impacted is a function of the roadway corridor alignment and the conceptual design for development of the North Campus. The roadway alignment identified in the Outlying Parcels Master Plan and as the preferred alternative in the FEIS is intended to reduce wetland impacts. Potential direct and indirect impacts in this alternative result in greater loss of woodland habitat and field areas, both as a result of the proposed roadway alignment and the resulting development. Indirect impacts resulting from the development of the North Campus will result in partial loss of the woodland that is located between the proposed road, the Charter Oak residential area, and the existing agricultural field (except for wooded wetlands located in this area that will be preserved). Woodlands to the west of this area, as well as other areas on the northwest portion of the project site, are proposed for development under each of the North Campus development alternatives. Given the higher habitat value of the wetland areas, loss of woodlands will likely result in less overall wildlife impact compared to wetland disturbance of similar magnitude.

**Threatened or Endangered Species**

No Federally-listed threatened or endangered species have been identified in the project area. The 2006 field investigations indicate that state-listed grassland bird species do not appear to use the small grasslands present at the site as breeding habitat, but cornfields present at the site may serve as staging and migratory habitat for grassland-associated bird species. Loss of this potential staging and migratory habitat will be offset by farmland mitigation activities that will result in fields similar to that which currently exists, and in similar quantities. Unmitigated loss of woodlands is not expected to affect state-listed species. The build alternatives could result in potential impacts to the state-listed Northern Spring Salamander, which has not been observed on-site but which has been reported in 2008 two miles away from the North Campus. Proposed mitigation measures to offset potential impacts to the Northern Spring Salamander include a construction time window to cross the intermittent stream to the extent practicable, maintaining significant forest canopy around the intermittent stream, wetland crossing designs that maintain habitat connectivity, and reducing and managing road runoff to the intermittent stream during and after construction. With the proposed mitigation measures, no adverse effects on threatened or endangered species are anticipated as a result of the Proposed Action.

**Historic and Archaeological Preservation and Section 4(f) Resources**

A Phase 1A Archaeological Assessment Survey of the North Campus area (1987) and Phase 1B and Phase 2 archaeological surveys (2005, 2006) of the roadway corridor have been completed. The results of the surveys indicate that construction of the North Hillside Road extension along
the proposed corridor alignment will not result in significant impacts to historical and archaeological resources. This finding is consistent with correspondence from the State Historic Preservation Office (SHPO) and Tribal Historic Preservation Officers (THPOs) regarding the project that found no effect associated with the roadway. However, development Parcels A, C, J, E, and G contain potential areas of prehistoric value, and Parcel B contains an area of potential historic value. The development of these parcels (with the exception of Parcel A, which will remain undeveloped through a conservation easement) will require additional archaeological surveys prior to development to determine if development activities could impact cultural resources. Further archaeological assessment may also be required prior to development of Parcel H since the limits of previous archaeological studies did not fully encompass the boundaries of this parcel. Parcel F contains two state-listed historic structures. The conceptual North Campus development plan calls for those structures to remain, so no impact to historic resources is anticipated.

As discussed above, the SHPO and THPOs determined that there will be no effect to historic or archaeological resources within the footprint of the proposed roadway. Therefore, no impacts to Section 4(f) historic resources are anticipated. Furthermore, the North Hillside Road extension will not impact publicly owned parks, recreational areas, and wildlife and waterfowl refuges. As described in the 1994 and 2001 EIEs, there is the potential for the presence of archaeological resources subject to protection under Section 4(f) within the North Campus development parcels. However, these are considered potential secondary or indirect impacts under NEPA and Section 106. Therefore, a Section 4(f) approval is unnecessary since the roadway extension project will result in no direct impacts to Section 4(f) resources.

UConn will be responsible for coordinating with the SHPO and the appropriate THPOs regarding the future development of the North Campus area.

Visual and Aesthetic Resources

The construction of the roadway extension and development of the North Campus will inevitably have an impact upon the aesthetic character of the site. The roadway extension itself, while located within a viewshed as defined by the Town of Mansfield, will not directly impact the drumlin or other hill areas identified in the Town of Mansfield Scenic Resources and Classifications Map. Secondary impacts resulting from development of the proposed parcels are likely to include the partial disruption of vistas from Route 195 and the Charter Oak residential units, as well as some disruption of vistas from Route 44. The Outlying Parcels Master Plan and 2001 EIE recommend measures to reduce the visual impacts upon the aesthetic character of the project site and the surrounding area including roadside plantings and vegetated buffers between property boundaries and development areas. The preservation of Parcel A through a conservation easement will maintain an undisturbed visual buffer between the Rolling Hills Mobile Home Park and the proposed North Campus development.

Construction Impacts

The construction impacts associated with each of the build alternatives are relatively similar and result primarily from the noise, fugitive dust, construction equipment exhaust, erosion and sedimentation, traffic and pedestrian relocation, and visual impacts that occur with roadway
construction and subsequent site development activity and do not extend in duration past the construction period. Mitigation measures would be provided during construction to reduce impacts on natural resources and communities. Most mitigation measures are incorporated into the construction specifications as requirements or best management practices (BMPs).

Secondary and Cumulative Impacts

Secondary (indirect) and cumulative impacts are summarized in Table 4-21 of the FEIS and the table in Section G of this ROD.

Construction of the proposed North Hillside Road extension will facilitate the development of the North Campus which is a distinct, but connected, action. Consequently, the majority of secondary impacts would result from the construction and operation of facilities on the North Campus parcels and consist of the types of impacts discussed above. Because these impacts are associated with the North Campus development, they are similar in nature and magnitude for all roadway alignments considered.

In considering cumulative impacts, resources affected by the project were identified; the relevant geographic area for a particular resource affected by the project was identified; other relevant past, present, and reasonably foreseeable future actions were considered; and the overall cumulative effect of the proposed action and these other actions were analyzed. In general, the direct and indirect effects of the project will not contribute substantially to cumulative effects, although the development of the North Campus will generate additional vehicle trips and is anticipated to have a positive economic effect due to the number and type of jobs created.

The proposed North Campus development will provide significant new and expanded high-technology employment opportunities in Mansfield and the region. The new jobs created by the proposed action will create an increased demand for existing and new housing, which will create a gradual increased demand for housing and services in the local community and in the region. The increased demand for housing could induce the sale of some existing housing units, and the private sector would likely respond to an increased housing demand by constructing more housing, as authorized by local land use boards and commissions. Construction of new housing has the potential for secondary and cumulative impacts to wetlands, water quality, farmland, traffic, air quality, utilities, and other environmental resources. All such new housing developments would need to comply with local zoning and be subject to their own environmental reviews on a case by case basis. Mitigation measures, as necessary, for new housing would be implemented as a condition of local project approval, as well as applicable state and federal permit requirements.

G. Identification of Avoidance and Mitigation of Environmental Impacts

The preferred alternative includes all practicable measures to minimize environmental harm. Coordination with the regulatory agencies throughout the project development process has resulted in agreement on measures to avoid and mitigate adverse impacts to environmental resources. These measures are described in the following table.
## Summary of Impacts and Avoidance/ Mitigation Measures

<table>
<thead>
<tr>
<th>Environmental Sector</th>
<th>Existing Conditions/Trends (Effect of Past and Present Actions)</th>
<th>Impacts from Other Foreseeable Future Actions (No Action Alternative)</th>
<th>Impacts of the Build Alternatives (Incremental Effects of Proposed Action)</th>
<th>Potential Cumulative Impacts</th>
<th>Proposed Avoidance and Mitigation Measures</th>
<th>Mitigation Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Direct Impacts (Roadway)</td>
<td>Indirect (Secondary) Impacts (North Campus)</td>
<td></td>
<td></td>
<td>UConn/OT and UConn</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>UConn/OT and UConn</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>UConn</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### Direct Impacts
- **No Action Alternative**: The construction of the North Campus Master Plan, including the current North Hillside Road, the Charter Oak residential area and the tennis courts.

### Indirect Impacts
- **North Campus Master Plan**: Development of the North Campus will result in any direct impacts on community resources.

### Potential Cumulative Impacts
- **Roadway**: The construction of the North Campus Master Plan could potentially increase the demand on public safety services on the UConn campus.

### Proposed Avoidance and Mitigation Measures
- **Preservation of 41.5 acres of prime farmland for cultivation by the College of Agricultural and Natural Resources on UConn-owned property located on or adjacent to the North Campus, all of which is currently in agricultural use.**
- **Conversion of 34.1 acres of UConn-owned land to Prime and Statewide Important Farmland located near the UConn Depot Campus and Spring Street Farm to achieve the acre-for-acre farmland mitigation identified in previous CEPA documents.**
- **A certified soil scientist will perform a field reconnaissance of the proposed farmland mitigation sites at the Depot Campus prior to finalizing the farmland conversion plans to assess the presence of wetlands and watersheds. The DEEP Natural Diversity Database will also be consulted regarding listed species for these areas prior to finalizing the farmland conversion plans.**

### Mitigation Responsibility
- **UConn/OT and UConn**
- **UConn**
- **Not applicable**
### Summary of Impacts and Avoidance/Mitigation Measures

<table>
<thead>
<tr>
<th>Environmental Sector</th>
<th>Existing Conditions / Trends (Effect of Past and Present Actions)</th>
<th>Impacts from Other Foreseeable Future Actions (No Action Alternative)</th>
<th>Impacts of the Build Alternatives (Incremental Effects of Proposed Action)</th>
<th>Potential Cumulative Impacts</th>
<th>Proposed Avoidance and Mitigation Measures</th>
<th>Mitigation Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economic Impacts</strong></td>
<td>The University is a major local employer; provides an educated and skilled workforce to the region, and research and development activities have positive impacts statewide.</td>
<td>The development of the roadway extension will provide short-term construction employment.</td>
<td>The direct and indirect impacts of the project are expected to contribute positively to the growth and expansion of the regional and local economy.</td>
<td>None required.</td>
<td></td>
<td>UConn.</td>
</tr>
<tr>
<td><strong>Traffic Impacts</strong></td>
<td>Increased traffic is anticipated as a result of 21st Century UConn projects, as well as development projects in Manfield. Levels of Service at intersections in the project area are anticipated to remain constant or worsen slightly under the No Build Alternative.</td>
<td>Additional traffic will be generated from the North Campus development. However, the indirect impacts will result in little change in LOS at most intersections in the project area and the LOS at most locations will improve over the No Build Alternative when mitigation (signal timing, widening, etc.) is incorporated.</td>
<td>What the cumulative effect of growth and development in the project area will result in a decline in LOS at many intersections, the mitigation measures associated with the proposed project will offset these effects, lowering the cumulative effects at many intersections in the project area.</td>
<td>• Optimization of signal timing at signalized intersections in the study area. • Geometric improvements at selected intersections to maintain acceptable levels of service at all of the signalized intersections within the study area. • Conduct a warrants analysis at the unsignalized intersection of North Eagleville Road at Hunting Lodge Road to determine if a roundabout or a traffic signal is necessary. • Construction of a new traffic signal at the intersection of South Eagleville Road and Separatist Road at some future stage of North Campus development. The timing of this mitigation measure should be reviewed based on the phasing of the North Campus development, including new traffic counts, delay study, traffic signal warrant analysis, and accident analyses. These additional analyses should be conducted as part of the STC Major Traffic Generator Certificate process. • Bituminous pedestrian sidewalks on the east side of the roadway and a separate bicycle lane within the curb lane in each direction.</td>
<td></td>
<td>UConn.</td>
</tr>
<tr>
<td><strong>Air Quality Impacts</strong></td>
<td>Increased indirect GHG emissions may occur due to increased use of mass transit and the increased availability of mass transit, and as a result, there will be reductions in MSATs. Increased indirect impacts of the build alternatives may also result in increased MSATs.</td>
<td>Increased indirect impacts may include background traffic from vehicles traveling to and from the North Campus facilities, direct stationary emissions from fuel usage in the on-site buildings, and indirect stationary emissions from energy consumption (co-generation and off-site energy sources).</td>
<td>Attainment of the NAAQS and continued reductions in MSATs is anticipated.</td>
<td>See Construction Impacts. • Design elements that will reduce potential increases in GHG emissions associated with the roadway extension and the North Campus facilities, including LEED Silver performance standards for building design and operation, sustainable site design measures, and alternative transportation measures such as accommodations for pedestrians and bicyclists as well as use of the existing campus shuttle system. • UConn will consider other measures for the design, construction, and operation of the North Campus facilities to further reduce energy consumption and GHG emissions including additional Transportation Demand Management measures and small-scale on-site clean or renewable energy generation to augment off-site power sources. • Alternative transportation fuels such as biofuels will be considered for project vehicles associated with individual North Campus developments. • Use of environmentally-friendly technologies for energy efficiency for development on the North Campus consistent with the UConn Sustainable Design &amp; Construction Policy, which has provisions requiring any new building construction or renovation project entering the pre-design planning phase to establish the LEED Silver rating as a minimum performance requirement.</td>
<td></td>
<td>UConn.</td>
</tr>
</tbody>
</table>

### Additional References
- **North Hillside Road Extension**
- **Modification of UConn's Sustainable Design & Construction Policy**
- **The University of Connecticut's Master Traffic Generator Certificate Process**
Surface Water and Groundwater Resources

- Development in the region has resulted in water quality impacts to Eagleville Brook and the downstream reaches of Cedar Swamp Brook. The Fenton River habitat may be impacted by groundwater withdrawals under low flow conditions. Groundwater quality beneath the UConn landfill area has historically been impacted by the landfill and former chemical pits.

- Development on campus and in the surrounding area has increased the demand for potable water.

- Increase in impervious area has resulted in increased stormwater runoff to watersheds in the Fenton and Willimantic River Watersheds, which likely have resulted in water quality related to sediment, nutrients, and bacteria concentrations in receiving waters.

Wetlands

- The National Marine Fisheries Program reports that by the mid-1980s, Connecticut lost approximately 70% of its estimated original wetlands base, a higher rate of wetland loss than any other New England state.

- Future development in the local and regional area may result in the additional loss of wetlands or degradation of existing wetland functions and values. Local, state, and federal wetland protection regulations restrict loss of wetlands through development projects.

- No wetland areas, totaling 0.69 acres, will be impacted by the proposed roadway construction.

- Indirect impacts to wetlands resulting from the development of the North Campus parking lots are estimated at 0.22 acres. Proposed mitigation consists of wetland creation, stormwater management, and the use of centralized and LID stormwater management practices and construction-phase erosion and sediment controls.

- Impacts to wetlands may occur as a result of new induced residential development in the local area and region resulting from new employees of the North Campus facilities. Mitigation would be provided through the local land use review process and applicable state and federal permit requirements.

Proposed Avoidance and Mitigation Measures

- Follow the Fenton River withdrawal protocol recommendations outlined in the Fenton River instream flow study and the 2007 Water and Wastewater Master Plan, adjusted for stream flow conditions.

- Follow the demand-based water conservation recommendations outlined in the Willimantic River study, which are based on Willimantic River streamflow values that trigger voluntary or mandatory water conservation actions.

- The use of non-potable reclaimed water to address the utility plant and irrigation water demands is expected to offset the amount of potable water that would have otherwise been used in those applications.

- Project-specific parking requirements for individual North Campus developments will be reviewed and coordinated as part of the CEPA Comparative Evaluation process and permitting for each future development parcel, as well as the associated agency review process, to ensure the lowest possible parking and impervious cover is provided.

- All planned and future infrastructure expansions on the North Campus, including both UConn and private development, will be required to use pervious pavement wherever feasible based on consideration of technical feasibility, maintenance, and cost.

- All planned and future infrastructure expansions on the North Campus, including both UConn and private development, will be required to use pervious pavement wherever feasible based on consideration of technical feasibility, maintenance, and cost.

- A combination of centralized and LID stormwater management measures for the roadway extension and North Campus development consistent with the DEEP Connecticut Stormwater Quality Manual.

- The use of non-potable reclaimed water to address the utility plant and irrigation water demands is expected to off-set the amount of potable water that would have otherwise been used in those applications.

- All planned and future infrastructure expansions on the North Campus, including both UConn and private development, will be required to use pervious pavement wherever feasible based on consideration of technical feasibility, maintenance, and cost.

- All planned and future infrastructure expansions on the North Campus, including both UConn and private development, will be required to use pervious pavement wherever feasible based on consideration of technical feasibility, maintenance, and cost.

- Construction-phase best management practices (see construction impacts) to reduce the potential for impacts on nearby public drinking water well fields and surface water supplies.

- Stormwater management measures for the roadway extension and North Campus development consistent with the DEEP Connecticut Stormwater Quality Manual.

- Follow the demand-based water conservation recommendations outlined in the Willimantic River study, which are based on Willimantic River streamflow values that trigger voluntary or mandatory water conservation actions.

- The use of non-potable reclaimed water to address the utility plant and irrigation water demands is expected to offset the amount of potable water that would have otherwise been used in those applications.

- All planned and future infrastructure expansions on the North Campus, including both UConn and private development, will be required to use pervious pavement wherever feasible based on consideration of technical feasibility, maintenance, and cost.

- A combination of centralized and LID stormwater management measures for the roadway extension and North Campus development consistent with the DEEP Connecticut Stormwater Quality Manual.

- The use of non-potable reclaimed water to address the utility plant and irrigation water demands is expected to offset the amount of potable water that would have otherwise been used in those applications.

- The use of non-potable reclaimed water to address the utility plant and irrigation water demands is expected to offset the amount of potable water that would have otherwise been used in those applications.

- The use of non-potable reclaimed water to address the utility plant and irrigation water demands is expected to offset the amount of potable water that would have otherwise been used in those applications.

- All planned and future infrastructure expansions on the North Campus, including both UConn and private development, will be required to use pervious pavement wherever feasible based on consideration of technical feasibility, maintenance, and cost.

- A combination of centralized and LID stormwater management measures for the roadway extension and North Campus development consistent with the DEEP Connecticut Stormwater Quality Manual.
Summary of Impacts and Avoidance/ Mitigation Measures

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetlands</td>
<td>through a conservation easement, avoidance of 100-foot upland envelope, and limited development within the vernal pool critical upland habitat.</td>
<td>through critical upland habitat. Mitigation for secondary effects of construction and operation of new road and new North Campus facilities related to roadway ditching and anti-icing, artificial light, and invasive species.</td>
<td>• Preserving an unaltered wetland and amphibian migration corridor through a proposed 76-acre conservation easement (Parcels A, C, E), and wetland mitigation area, thereby protecting the vernal pools with the highest rating and ecological value, with an emphasis on maintaining wetland connectivity following the recommendations of Calhoun (2008). • Creation of an area of reduced salt application in the vicinity of the wetland crossings, where feasible based on safety considerations. This requires appropriate roadway signage to inform drivers, must be approved by UConn Public Safety, and may require the Attorney General’s approval. For the proposed crossing structures that are more susceptible to freezing, the feasibility of reduced salt application will depend primarily on safety considerations. • Placement of catch basins upgradient of the wetland crossings to collect runoff containing de-icing and anti-icing materials. • Improving the efficiency of de-icing and anti-icing practices to minimize application, which is part of UConn’s on-going planning for more efficient winter roadway maintenance. • Compliance with the relevant state laws and the campus Sustainable Design Guidelines regarding lighting, strategic placement of lighting fixtures and control of lighting directionality to minimize light at the wetland crossings to the extent practicable while still maintaining public safety and complying with the requirements for full cutoff lighting. • Implement invasive species monitoring and control program. • Stormwater basins located within 750 feet of a vernal pool will be designed with a smaller permanent pool (e.g., micropool) extended detention or as dry basins combined with other controls targeted at pollutant removal (bioretention or water quality swales) to reduce the potential for the stormwater basins to function as “decoy wetlands” and disrupt amphibian migration patterns.</td>
<td><strong>UConn</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water body Modification and Wildlife Impacts</td>
<td>Moderate value woodland habitat will be lost, as well as smaller areas of field and higher value wetland habitat areas.</td>
<td>Woodslands or generally moderate habitat value will be the habitat type most affected by development of the North Campus.</td>
<td>• Avoidance and minimization of impacts to wetland areas, mitigation for wetlands to be lost, preservation of wetland buffers on the project site, a proposed 76-acre conservation easement, mitigation of losses to field habitat through agricultural preservation and replication of converted farmland, wetland creation designs that maintain habitat connectivity and are consistent with DEEP and ACOE stream continuity and crossing guidelines, and locating development to reduce woodland impacts where practicable. • Site clearing or grading within 750 feet of a vernal pool will be performed outside of the spring amphibian migration period (mid-March to the end of May), to the extent practicable. Construction should be staggered and all fence should be minimized within 750 feet of the vernal pools. Silt fence should be used to exclude amphibians from active construction areas. • Construction of the wetland crossings will also be limited to between November and March, to the extent practicable, to avoid potential impacts to the Northern Spring Salamander. • Preserve large-diameter trees to the extent practicable. • Prior to development activity on existing agricultural fields on the North Campus between late April and July, UConn will perform a field survey of these fields to verify a lack of existing state-listed grassland birds.</td>
<td><strong>UConn</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threatened or Endangered Species</td>
<td>The roadway estimate will not result in a loss of breeding habitat for state-listed avian species, although staging and migratory areas could be impacted. The loss of wetlands associated with the roadway crossing will reduce potential habitat for the state-listed Northern Spring Salamander, but a construction time window for crossing the intermittent stream to the extent</td>
<td>The development of the North Campus will not result in a loss of breeding habitat for state-listed avian species, although staging and migratory areas could be impacted by farmland conversion. The loss of wetlands will reduce potential habitat for the state-listed Northern Spring Salamander; however, the habitat function of vernal pools on the North Campus are not anticipated to be impacted.</td>
<td>• Farmland mitigation measures, which will provide staging and migratory habitat for the state-listed grassland bird species similar to that which currently exists, and in similar quantities. • Use of low-relief buildings to limit impacts to migrant birds. • Site clearing or grading within 750 feet of a vernal pool will be performed outside of the spring amphibian migration period (mid-March to the end of May), to the extent practicable. Construction should be staggered and all fence should be minimized within 750 feet of the vernal pools. Silt fence should be used to exclude amphibians from active construction areas. • Proposed mitigation measures to offset potential impacts to the Northern Spring Salamander include a construction time window (November to March) to cross the intermittent stream to the extent practicable, maintaining significant forest canopy around the intermittent stream, and reducing and managing road runoff to the intermittent stream during and after construction.</td>
<td><strong>UConn</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** The summary above is a condensed version of the document. For a full understanding, please refer to the original document.
Summary of Impacts and Avoidance/Mitigation Measures

<table>
<thead>
<tr>
<th>Environmental Sector</th>
<th>Existing Conditions/ Trends (Effect of Past and Present Actions)</th>
<th>Impacts from Other Foreseeable Future Actions (No Action Alternative)</th>
<th>Impacts of the Build Alternatives (Incremental Effects of Proposed Action)</th>
<th>Potential Cumulative Impacts</th>
<th>Proposed Avoidance and Mitigation Measures</th>
<th>Mitigation Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threatened or Endangered Species</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Historic and Archaeological Preservation and Section 4(f) Resources</td>
<td>Prior private development may have had adverse effects on unprotected historic and archaeological sites. Development on the UConn campus conducted under the Connecticut Environmental Policy Act has required consideration of these resources, thereby limiting impacts.</td>
<td>Continued development in the region may place pressure on unprotected cultural resources, but development on the UConn campus will subject to review by the State Historic Preservation Office (SHPO) and appropriate Tribal Historic Preservation Officers (THPOs).</td>
<td>Due to the presence of areas of moderate to high sensitivity on the North Campus, additional investigation and coordination with the SHPO and the appropriate THPOs will be required as development proceeds to adequately identify and protect cultural resources.</td>
<td>White impacts to unprotected cultural resources may occur as a result of private development in the region; the proposed project will not contribute to such impacts.</td>
<td>Additional cultural resource investigation and coordination with the SHPO and THPOs prior to development of the North Campus parcels.</td>
<td>UConn</td>
</tr>
<tr>
<td>Visual and Aesthetic Resources</td>
<td>Development has altered the visual landscape of numerous parts of Connecticut.</td>
<td>The roadway will alter the visual setting of the North Campus, placing a linear feature with it associated grading in what is currently an essentially rural landscape.</td>
<td>Secondary impacts resulting from development of the proposed parcels are likely to include partial changes in the vistas from Route 195 and the Charter Oak residential area, as well as some changes in vistas from Route 44</td>
<td>The UConn Master Plan lists comprehensive measures to be included for each parcel to reduce the effect of the project on aesthetics in the area. Consequently, the project will not result in a substantial adverse cumulative impact to visual resource.</td>
<td>Roadside plantings along route cut slopes. Vegetative buffers between proposed development areas and adjacent property lines (30-foot width minimum). Buffer widths in excess of 30 feet will be determined on a case-by-case basis. Design criteria for exterior lighting to include minimizing unnecessary light spillage.</td>
<td>UConn</td>
</tr>
<tr>
<td>Construction Impacts</td>
<td>Past construction activity on the North Campus has included construction associated with the existing North Hillside Road, the Charter Oak apartments, and the tennis courts. There is no ongoing construction activity on the North Campus.</td>
<td>Roadway construction will result in potential temporary, short-term impacts associated with equipment noise, fugitive dust, construction equipment exhaust, erosion and sedimentation, traffic and pedestrian relocation, and visual impacts.</td>
<td>Potential secondary construction impacts resulting from development of the North Campus parcels include impacts associated with equipment noise, fugitive dust, construction equipment exhaust, erosion and sedimentation, traffic and pedestrian relocation, and visual impacts.</td>
<td>Construction phase mitigation measures for the roadway and North Campus development will be coordinated with other concurrent University construction projects on the Storrs campus. Consequently, the project will not contribute to cumulative construction impacts.</td>
<td>Appropriate construction signage, uniformed officers, and prohibition of construction traffic on designated local roads. The preferred construction access will be from Route 44 to avoid use of campus roadways. Construction access to and from the project site will be incorporated into the final project plans and specifications. Existing traffic patterns will be maintained to the extent feasible during peak traffic hours. Good &quot;housekeeping&quot; practices such as watered exposed earth areas, covering dust-producing materials during transport, limiting dust-producing construction activities during high wind conditions, and providing street sweeping or tire washes for trucks leaving the site. Reference to UConn’s “Environmental, Health, and Safety Requirements for Construction, Service, and Maintenance Contractors” in contract documents, outlining contractor air pollution control requirements for construction vehicles’ equipment for UConn construction projects. Conformance with CTDOT policies for construction noise. In project specifications, require contractors to limit construction noise. Limiting construction to daytime hours. Use and regular maintenance of mufflers on construction equipment. Use of appropriate erosion and sediment controls during construction. Provision for emergency spill response during construction, hazardous material storage and disposal to prevent vandalism and undesired releases, construction vehicle fueling and maintenance procedures, notification of affected public water systems and CT DPH of the construction start date, and procedures for notification of CT DPH and DEEP in the event of a chemical/ fuel spill at the construction site. Site clearing or grading within 750 feet of a vernal pool will be performed outside of the spring amphibian migration period (mid-March to the end of May), to the extent practicable. Construction should be staggered and site fencing should be minimized within 750 feet of the vernal pools. Site fence should be used to exclude amphibians from active construction areas. Mitigation measures for construction of the wetland crossing structures, including time of year restrictions, restrictions on equipment laydown areas, use of wetland matting where necessary, and construction monitoring.</td>
<td>UConn</td>
</tr>
</tbody>
</table>
H. Permits Other Regulatory Requirements

UConn will develop and implement a wetland mitigation plan and an invasive species monitoring and control program as part of the federal and state wetland permitting process. No other formal monitoring or enforcement programs are proposed, with the exception of monitoring that will be required for compliance with applicable state and federal permits and approvals.

The following federal and state permits and approvals are required for the extension of North Hillside Road, including consideration of potential indirect impacts associated with subsequent development of the North Campus:

- **Final Design and Rights-of-Way Acquisition** - Final roadway and mitigation design and acquisition of lands for rights-of-way and any mitigation, as needed.

- **United States Army Corps of Engineers Section 404 Individual Permit** - Although the proposed roadway extension will result in direct wetland impacts of 0.34 acres, which is significantly lower than the 1-acre threshold for a Section 404 permit, the U.S. Army Corps of Engineers has previously determined that a Section 404 permit is required given the potential secondary wetland impacts associated with the development of the North Campus.

- **DEEP Inland Wetland & Watercourses Permit** - Required by an action undertaken by a state agency (in this case, UConn) in or affecting inland wetlands or watercourses. The action in this instance is the proposed loss of wetlands associated with the construction of the North Hillside Road Extension, stormwater discharges, and secondary impacts associated with the proposed project.

- **DEEP 401 Water Quality Certificate** - Required for DEEP review of a federal permit application for discharges to navigable waters, including wetlands. A 401 Water Quality Certificate is required for the proposed project since coverage under an ACOE Section 404 individual permit is required.

- **DEEP Flood Management Certification** - Required by an action undertaken by a state agency (in this case, UConn) in or affecting floodplains or natural or man-made storm drainage facilities. The actions in this instance are stormwater impacts associated with the extension of North Hillside Road, and subsequent impact of development of the North Campus parcels.

- **DEEP Water Diversion Permit (Non-consumptive Use)** - Required for a state action that results in the alteration of surface water flows, including the collection and discharge of stormwater runoff from a watershed area greater than 100 acres. The proposed North Campus development concept includes a stormwater drainage system that would collect and manage stormwater runoff from a total of approximately 120 acres.
- DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities - Required for construction projects that disturb more than an acre of land, regardless of project phasing. Greater than 1 acre of disturbance is anticipated to occur as part of the proposed project.

The following permits and approvals are anticipated to be required for the subsequent development of the North Campus parcels:

- CEPA Comparative Evaluation;
- DEEP Flood Management Certification;
- DEEP Inland Wetland & Watercourses Permit;
- DEEP General Permit for the Discharge of Stormwater Associated with Industrial Activities;
- DEEP General Permit for the Discharge of Stormwater Associated with Commercial Activities;
- State Traffic Commission Certificate of Safe Traffic Operation;
- Underground Storage Tank Registration (if applicable);
- New Source Review (Air Quality).

Development of individual North Campus parcels, whether by UConn or private entities, will be subject to CEPA Comparative Evaluation and applicable state and federal permitting requirements (e.g., Flood Management Certification, State Inland Wetlands) as the land will continue to be owned by UConn.

I. Document Availability

On December 29, 2008, FHWA, in cooperation with UConn and CTDOT, released for circulation and review by federal, state, and local agencies and other interested parties, a Draft Environmental Impact Statement (DEIS) for the extension of North Hillside Road. A Notice of Availability of the DEIS was published in the Federal Register on December 29, 2008. The DEIS was prepared and circulated pursuant to NEPA. A joint environmental and design public hearing was held on January 29, 2009 to solicit public and agency comment on the DEIS. Copies of the DEIS were also made available at the Mansfield Public Library and on the UConn Office of Environmental Policy website.

Additionally, a series of meetings were held with DEEP and ACOE between May 2009 and February 2010 to further evaluate roadway alignment alternatives and wetland crossing designs that would minimize impacts to aquatic resources and maintain vernal pool habitat connectivity. The additional agency coordination and expanded alternatives evaluation resulted in the selection of the preferred alternative as summarized in this Record of Decision and described more fully in the FEIS.

The preliminary FEIS was reviewed by FHWA legal counsel. On October 21, 2010, FHWA legal counsel found the preliminary FEIS for the North Hillside Road Extension to be legally sufficient. The FEIS was signed in December 2011. Copies of the FEIS were mailed to those
agencies and individuals that received a copy of the DEIS and those that submitted substantive comments on the DEIS. On December 23, 2011, the Environmental Protection Agency published a Notice of Availability of the FEIS in the *Federal Register*. The comment period for the FEIS ended January 23, 2012. Comments received on the FEIS and associated responses are included in Appendix A of this Record of Decision.

**J. Record of Decision Approval**

Based on the analysis and evaluation contained in the FEIS; and after careful consideration of the identified environmental factors and input received from other agencies, organizations, and the public; and the project commitments and mitigation measures outlined above; it is the decision of FHWA to approve the selection of the Option A roadway alignment and the North Campus development Alternative 2C as the Selected Alternative for the North Hillside Road Extension project.

April 4, 2012

Amy Jackson-Grove
Connecticut Division Administrator
Federal Highway Administration
Appendix A

FEIS Comments and Responses
Response to Comments on  
Final Environmental Impact Statement  
North Hillside Road Extension  
University of Connecticut, Mansfield, Connecticut  

March 2012

1. Comments Summary

The Final Environmental Impact Statement (FEIS) for the North Hillside Road Extension project was released for public and agency review and comment on December 23, 2011. In accordance with the National Environmental Policy Act (NEPA) and Federal Highway Administration (FHWA) implementing regulations, a 30-day comment period followed publication and distribution of the FEIS. Written comments were received during the 30-day comment period, which ended on January 23, 2012.

This document provides responses to substantive comments received on the FEIS. Copies of the comment letters are attached. The comment letters are annotated with comment identification numbers that correspond to each response. Written comments were received from the following agencies and individuals:

Federal Agencies
- U.S. Army Corps of Engineers (ACOE) (letter dated January 24, 2012)
- U.S. Environmental Protection Agency (EPA) (letter dated January 19, 2012)

State Agencies

Local Officials/ Representatives

2. Response to Comments

U.S. Army Corps of Engineers

Comment 1

The correct wetland impacts resulting from the roadway and development envelope for the preferred alternative are as follows, as indicated in Section 4 and the Executive Summary of the FEIS:
<table>
<thead>
<tr>
<th>Activity</th>
<th>Wetland Impacts (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadway Extension (with re-designed wetland</td>
<td>0.09</td>
</tr>
<tr>
<td>crossings)</td>
<td></td>
</tr>
<tr>
<td>Parcel Development (Development Envelope,</td>
<td>0.22</td>
</tr>
<tr>
<td>Parcel C)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>0.31</strong></td>
</tr>
</tbody>
</table>

The Wetland A and C crossings were re-designed to essentially eliminate wetland impacts at these locations and maintain habitat connectivity for aquatic resources and other wildlife. The wetland impacts in the above table reflect the re-designed wetland crossings (0.09 acres) and the development envelope for the preferred alternative (0.22 acres), which will be included in the Section 404 Individual Permit application submittal.

**Comment 2**

The proposed conservation areas identified in the FEIS (Figure 3-7) resulted from a series of meetings between the University of Connecticut (UConn) and representatives of DEEP and ACOE between May 2009 and February 2010. DEEP requested that the proposed conservation areas be defined such that no future development would occur within the designated conservation easement area and no development would occur outside of the maximum buildout development envelope without future approval by DEEP. The project mapping was revised at the request of DEEP to identify the maximum buildout development envelope boundary and the following types of conservation areas on the North Campus:

1. Existing conservation easement area associated with the former UConn landfill (now referred to as the Hillside Environmental Education Park or “HEEP”)
2. Proposed farmland preservation area as identified in the DEIS
3. Proposed conservation easement area
4. Other areas outside of the development envelope that are designated as “Non-Development Areas”

All four categories above are described in the FEIS. As indicated by DEEP (Comment 2) and EPA (Comment 2) in their FEIS comment letters, the details of the proposed conservation areas and development restrictions will be addressed as part of future mitigation discussions during the permitting process.

The category identified as “Proposed Conservation Area” in the FEIS is an approximately 76-acre proposed conservation easement area that includes a large portion of the North Campus on the west side of the proposed roadway extension and the proposed wetland mitigation area adjacent to the forested wetland and agricultural field on the east side of the proposed roadway extension. The portion of the proposed conservation area west of the proposed roadway alignment encompasses Red Maple Swamp 1A and the associated...
This area is also contiguous with the previously established HEEP conservation easement area, including Red Maple Swamp 1B. It is anticipated that the proposed conservation easement area would be conserved through a formal agreement between UConn and DEEP, similar to the existing conservation agreement for the HEEP. As indicated previously, the boundaries of the proposed 76-acre conservation easement area were identified in conjunction with the regulatory agencies during a series of meetings with representatives from DEEP and ACOE between May 2009 and February 2010. The proposed conservation easement area boundary generally follows the maximum buildout development envelope boundary west of the proposed roadway corridor.

The other category of conservation area on the North Campus is referred to as “Non Development Areas” in Figure 3-7 of the FEIS. These areas, which include the two areas on Parcel B cited in the comment, are outside of the proposed maximum buildout development envelope and generally include regulated wetlands and vernal pools and their surrounding 100-foot upland area. These areas would not be placed in a formal conservation agreement, but are designated as non-development areas since no future development is planned for these areas (i.e., UConn has no intention of developing these areas).

Comment 3

The proposed stream restoration was identified in the Draft Environmental Impact Statement (DEIS) as one of several mitigation measures to offset anticipated impacts to wetlands and aquatic resources. The stream restoration proposal was originally discussed with ACOE representatives during a March 2008 site walk by ACOE, DEEP, EPA, and the U.S. Fish and Wildlife Service (USFWS). Representatives of ACOE confirmed that stream restoration could potentially qualify as a component of the proposed wetland mitigation plan, potentially allowing for a reduced wetland replication ratio. This was the impetus to include the stream restoration project as one of the proposed wetland mitigation measures in the DEIS. The proposed stream restoration was subsequently carried forward in the FEIS.

More recently, Fuss & O’Neill and UConn have begun to evaluate the feasibility of the proposed stream restoration in more detail as part of the DEEP and ACOE permit application process. The impacted stream reach is located in a relatively steep, heavily-wooded area downstream of the proposed roadway crossing at Wetland A. The stream would have to be accessed from the new roadway corridor or from the field between the Wetland A and Wetland B crossings. Either option would require significant tree clearing and disruption of sensitive wetland and riparian areas by construction equipment. The environmental benefit of such a project is questionable given the likely impacts to the sensitive natural resources that the project proponents and resource agencies have worked diligently to avoid through the NEPA process.

Furthermore, the NEPA process has resulted in significant re-design of the wetland crossings, as well as reduction of the North Campus development envelope and preservation of large portions of the North Campus in a conservation easement. These mitigation measures are in addition to the proposed 2.2-acre wetland creation area adjacent to the farm field and forested wetland associated with Wetland A, which would provide a replication ratio of approximately 7...
to 1 based on the anticipated wetland impacts of 0.31 acres for the overall project.

Given the limited access and potential adverse impacts of implementing the proposed stream restoration, and the other significant wetland mitigation commitments described in the FEIS, stream restoration will remain as a potential mitigation item in the Record of Decision (ROD), but UConn will further evaluate the overall feasibility, net environmental benefits, and justification for the proposed stream restoration in more detail during the permitting process.

Comment 4

The Low Impact Development (LID) stormwater management practices that are proposed for the North Campus development parcels, which include bioretention/rain gardens, permeable pavement, and other infiltration techniques, are not shown on the stormwater management plan (Figure 4-9) due to the conceptual nature of the proposed North Campus development at this time. With the exception of the first project, which will be built by UConn and referred to as the “Innovation Partnership Building,” the remainder of the North Campus parcels will be developed and operated by private entities through a long-term land lease with UConn. The details of these developments are unknown at this time. The proposed building footprints and parking lots/driveways shown on Figure 4-9 are solely intended to demonstrate that the proposed development envelope can accommodate the development that was envisioned in the North Campus Master Plan as well as conceptual stormwater controls to meet basic stormwater quantity and quality objectives. The actual locations of LID and other stormwater management measures will be highly site-specific and ultimately incorporated into the actual designs of each development.

The Section 404 Individual Permit application will contain details of the proposed stormwater management measures for the roadway extension, as well as information in support of a DEEP Flood Management Certification demonstrating how the proposed roadway extension and North Campus development will meet peak flow and stormwater quality requirements. However, the application will not include detailed design of LID or other stormwater management measures for the North Campus parcels since the details of the parcel development are unknown at this time. The proposed conceptual stormwater management plan will be refined during subsequent design and permitting phases for the individual development parcels, including site-specific investigation of soils and subsurface conditions to further assess the feasibility and support the design of infiltration and other types of stormwater Best Management Practices (BMPs). Development of individual North Campus parcels, whether by UConn or private entities, will be subject to CEPA Comparative Evaluation and applicable State and Federal permitting requirements (e.g., Flood Management Certification, State Inland Wetlands) as the land will continue to be owned by UConn.

Comment 5

It is difficult to project the amount of necessary parking for a particular development without knowing the final build-out density and other details of the development. The North Campus development is anticipated to be a combination of UConn buildings that may generate very low parking requirements and private entities requiring standard parking ratios. The parking ratio of 3.5 spaces per 1,000 square feet was provided as a conservative average parking ratio for this
development based on the Town of Mansfield standards and its campus type setting. Actual parking requirements for individual North Campus developments may be lower or higher than this assumed parking ratio. The FEIS and subsequent permitting approach agreed to by DEEP and the U.S. Army Corps of Engineers establishes a maximum buildout development envelope that supersedes the parking ratio concept and limits the expected environmental impacts.

The project proponents recognize the importance of reducing impervious areas and greenhouse gas emissions, and the University promotes the use of sustainable measures on all projects and will continue to do so for the full development of the North Campus. Project-specific parking requirements for individual North Campus developments will be reviewed and coordinated as part of the CEPA Comparative Evaluation process and permitting for each future development parcel, as well as the associated agency review process, to ensure the lowest possible parking is provided. This requirement is reflected in the mitigation commitments in the ROD.

As indicated in Section 4.9.5.3 of the FEIS, additional Transportation Demand Management measures will be considered for the North Campus facilities to further reduce parking requirements, energy consumption, and GHG emissions:

- Support extension/expansion of existing bus service connecting the campus with surrounding communities
- Develop a parking management program to minimize parking requirements
- Develop and implement a Marketing/Information Program that includes posting and distribution of ridesharing/transit information
- Reduce employee trips during peak periods through alternative work schedules, telecommuting and/or flex-time

**U.S. Environmental Protection Agency**

**Comment 1**

The use of pervious pavement for certain new development applications is a cost-effective best management practice that has been studied extensively and its effectiveness documented in New England. UConn is firmly committed and has become a leading advocate of comprehensive stormwater management approaches in recent years through the use of innovative stormwater Best Management Practices in campus projects, including successful campus installations of pervious pavers, pervious asphalt, and porous concrete. UConn has installed LID features on campus, not only as part of new construction projects but also as retrofits and demonstration projects at older building sites. On the main Storrs campus, UConn has more than 15 engineered rain gardens and bioretention swales, two green roofs and a third under construction, the first large-scale porous concrete and permeable asphalt parking lots in Connecticut, two terraces constructed with porous landscape pavers, which material will also be used for the reconstruction this spring of the snow shelf along Hillside Road on campus, a rainwater harvesting system under construction for capturing roof runoff for irrigation purposes, and one large underground infiltration chamber.

UConn currently evaluates the use of pervious pavement (pervious asphalt and concrete) for all campus development projects and will continue to do so for the proposed North Campus
development sites. UConn is committed to using pervious pavement wherever feasible on the North Campus unless the use of permeable pavement is demonstrated to be impracticable. The decision to use pervious pavement is based on consideration of technical feasibility (soil and subsurface conditions, anticipated sediment load, anticipated traffic, etc.), maintenance, and cost. Although the individual North Campus development sites will be developed and operated by private entities (with the exception of the Innovation Partnership Building to be developed by UConn), the ROD incorporates a requirement that all planned and future infrastructure expansion on the North Campus, including both UConn and private development, use pervious pavement wherever feasible based on consideration of technical feasibility, maintenance, and cost.

Refer to the response to the U.S. Army Corps of Engineers Comment 5 regarding parking requirements for the North Campus. Given the inherent uncertainty in the type of development that may occur on individual development parcels, the level of detail required to reasonably estimate the number of parking spaces that are actually needed to serve the North Campus development is simply not available at this preliminary stage. A more prudent approach is to require an assessment of project-specific parking requirements for individual North Campus developments as part of the CEPA Comparative Evaluation process and permitting for each future development parcel, when the actual details of the proposed developments are better defined.

Comment 2

A Section 404 Individual Permit application will be submitted to the U.S. Army Corps of Engineers for determination of the Least Environmentally Damaging Practicable Alternative (LEDPA) and approval of proposed compensatory mitigation.

The comment also notes that as part of future mitigation discussions, EPA will likely recommend that an additional parcel of land with a vernal pool and forested wetland, which serves as a wildlife corridor, be preserved along with the larger conservation area. As discussed in the response to Comment 2 of the U.S. Army Corps of Engineers, this wetland is designated as a “Non Development Area” in Figure 3-7 of the FEIS. Areas with this designation would not be placed in a formal conservation agreement, but are designated as non-development areas since no future development is planned for these areas (i.e., UConn has no intention of developing these areas). These areas are outside of the proposed maximum buildout development envelope and generally include regulated wetlands and vernal pools and their surrounding 100-foot upland area.

Connecticut Department of Energy and Environmental Protection

Comment 1

Conservation Easement - See the response to the U.S. Army Corps of Engineers Comment 2 regarding the “Non Development Area” and “Proposed Conservation Easement” designations in the FEIS.
Vernal Pools – The vernal pool mitigation measures in the FEIS include limiting development within the 750-foot critical upland area to less than 25%, which is consistent with the guidance provided in Calhoun and Klemens (2002). UConn strives to adhere to this guidance whenever possible. The 25% development goal stated in the FEIS would apply to all of the North Campus vernal pools collectively. When considered individually or as smaller functional groupings due to the close proximity of multiple vernal pools, the percentage of development within the 750-foot critical upland area varies as follows, based on the maximum buildout development envelope (North Campus Development Alternative 2C):

<table>
<thead>
<tr>
<th>Cover Type</th>
<th>Vernal Pools #10 &amp; 11</th>
<th>Vernal Pool #1</th>
<th>Red Maple Swamp 1A (#2-4, #13)</th>
<th>Red Maple Swamp 1B (#5-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed</td>
<td>34%</td>
<td>33%</td>
<td>22%</td>
<td>25%</td>
</tr>
</tbody>
</table>

1Includes existing development on the North Campus and adjacent off-campus areas and the proposed North Campus maximum buildout development envelope.

As shown in the above table, the percentage of development within the 750-foot critical upland area is higher than 25% for some of the individual vernal pools or functional groupings of vernal pools and lower than 25% for others. It is important to note that undeveloped areas within the 750-foot critical upland area but outside of the development envelope will be protected from future development through a conservation easement, farmland preservation commitments, and regulatory controls.

Other mitigation commitments identified in the FEIS relative to wetlands and vernal pools include elimination of development on Parcel A and inclusion of this parcel in the conservation easement area, an approximately 2.2-acre wetland creation area, wetland crossing designs that avoid or minimize wetland impacts and maintain habitat connectivity, a comprehensive stormwater management system design for the North Campus development, and avoidance of the 100-foot upland envelope around the existing wetlands.

Comment 2

In their review of the FEIS, the DEEP preliminarily identified issues that will require the submittal of additional documentation in subsequent permit applications for the project. These issues are listed below (in italics), along with associated responses:

- Detailed reasons for the rejection of Alternative A-5 during the final selection of the preferred alternative roadway alignment. Section 3.4 of the FEIS (pages 23 through 27, including subsections titled “Additional Comparison of Option A and Option A-5 Alternative Roadway Alignments” and “Final Selection of Preferred Roadway Alignment Alternative”) contains a detailed comparison of the Alternative A and Alternative A-5 roadway alignments and justification for selection of the preferred roadway alignment, as requested by the DEEP and U.S. Army Corps of Engineer during the coordination meetings that occurred between May 2009 and February 2010.
The two alternatives were compared based on the potential impacts of the alternatives on the aquatic ecosystem and the overall environment as well as consideration of the practicability of the alternatives, consistent with Section 404(b)(1) of the Clean Water Act and the Section 404(b)(1) Guidelines (40 CFR 230). As indicated in the FEIS, Alternative A-5 would have slightly less direct wetland impacts than Alternative A (0.08 acres versus 0.34 acres), but is neither prudent nor practicable on the basis of cost, land acquisition impacts, and impacts to other environmental resources including archaeological resources. Subsequent modifications to the Wetland A and C crossing designs essentially eliminated wetland impacts at these two crossings, reducing the total direct wetland impacts of Alternative A to approximately 0.09 acres, which is nearly identical to the wetland impacts anticipated under Alternative A-5 (0.08 acres).

- Language describing development restrictions in the proposed conservation areas. It is anticipated that a formal conservation agreement will be negotiated between UConn and DEEP with terms and conditions similar to the existing conservation agreement for the HEEP. Proposed language for such an agreement will be provided in the DEEP permit applications. UConn would retain ownership of and maintenance responsibility for the parcel, while UConn and DEEP would be responsible for overseeing compliance with the terms, conditions and use limitations specified in the agreement.

- Incorporation of Low Impact Development techniques in the design of stormwater collection systems for both the roadway and subsequent lot development. See response to U.S. Army Corps of Engineers Comment 4 and U.S. EPA Comment 1 regarding the use of LID techniques in the proposed stormwater management system design. LID techniques are included in the roadway stormwater management system design in the form of water quality swales and stormwater management basins. The permit applications for the roadway extension will not include detailed design of LID or other stormwater management measures for the North Campus parcels since the details of the parcel development are unknown at this time. Subsequent design and permitting of individual development parcels will include evaluation and design of site-specific LID stormwater management measures. The ROD incorporates a requirement that all planned and future infrastructure expansion on the North Campus, including both UConn and private development, use pervious pavement and other LID measures wherever feasible based on consideration of technical feasibility, maintenance, and cost. Development of individual parcels will also require CEPA Comparative Evaluation and DEEP Flood Management Certification since UConn will lease the property to private entities.

- A baseline assessment of the geomorphic conditions of Cedar Swamp Brook. A baseline geomorphic assessment of Cedar Swamp Brook is not believed to be warranted for several reasons. First, a baseline geomorphic assessment would provide information on the current conditions of Cedar Swamp Brook, factors that are likely responsible for the current stream channel form and stability, and insight into potential future stream channel evolution, but would not provide the information necessary to demonstrate that increased development will not lead to degradation of aquatic resources similar to that which has occurred in Eagleville Brook. It should also be noted that a geomorphic assessment was not performed for Eagleville Brook, nor was a geomorphic assessment performed in support of the Eagleville Brook impervious cover Total Maximum Daily
Load (TMDL).

Second, and more importantly, the historical development that occurred in the Eagleville Brook watershed is significantly different than the future development proposed on the North Campus in several key aspects. A heavily-developed portion of the UConn main campus is located within the Eagleville Brook watershed, and a portion of Eagleville Brook is piped beneath the campus. The vast majority of this campus development, as well as off-campus residential areas in the watershed, occurred prior to the inception of state and federal environmental permitting and land use regulatory programs and prior to current stormwater quality and quantity control requirements. According to the Eagleville Brook TMDL published by DEEP in 2007, the impacted conditions (aquatic life impairments) in Eagleville Brook are likely caused by uncontrolled stormwater runoff (high quantity and low quality) contributed by impervious cover in the watershed. Current-day stormwater controls, such as LID techniques and other stormwater treatment practices, were not required for much of the historical development in the Eagleville Brook watershed. Conversely, the proposed North Hillside Road extension and North Campus development are subject to state and federal environmental permitting programs and will meet stringent standards for stormwater quality and quantity, wetland and watercourse protection, and wildlife habitat. The proposed stormwater management design for the North Hillside Road extension and the North Campus development is consistent with the recommended strategies for implementation of the Eagleville Brook impervious cover TMDL, including reducing impervious cover where practical, disconnecting impervious cover from surface water bodies, minimizing additional disturbance to maintain existing natural buffering capacity, and installing engineered BMPs to reduce the impact of impervious cover on receiving water hydrology and water quality. A baseline geomorphic assessment of Cedar Swamp Brook is not believed to be necessary given the stringent performance standards that the North Campus development will be held to, in comparison to the relatively uncontrolled development that occurred in the Eagleville Brook watershed.

- Site plans that provide a clear and unambiguous delineation and identification of the areas being proposed for development and the areas on which no development will occur (i.e., areas to be placed under conservation easements and any other areas that will not be developed in the future). Site plans will be provided with the permit applications that depict the information and the level of detail and clarity requested, consistent with the information presented in the FEIS.

Comment 3

The National Ambient Air Quality Standards (NAAQS) for sulfur dioxide, carbon monoxide, ozone, nitrogen dioxide and lead were revised essentially at the time of completion of the FEIS and are therefore not reflected in the FEIS.

Although the NAAQS for some pollutants were updated in October 2011, there was no change to the NAAQS for carbon monoxide. Therefore, the results of the microscale analysis presented in Table 4-9 of the FEIS are unaffected and the conclusions reached in the document are unchanged.
Similarly, the conclusions of the mesoscale analysis in the FEIS remain unchanged despite any changes in the NAAQS. No changes to the 8-hour ozone or annual nitrogen oxide (NO\textsubscript{x}) standards have occurred. Since an overall decrease in volatile organic compounds (VOCs) and NO\textsubscript{x} are anticipated by 2035, the project emissions will remain below those required to maintain compliance with the State Implementation Plan and the NAAQS for ozone.

It is also noted that the DEEP currently operates an air pollutant and meteorological monitoring network of 21 sites rather than the 26 reported in the FEIS. The change in the number of state-wide monitoring stations does not affect the analysis or conclusions presented in the FEIS regarding potential air quality impacts.

Comment 4

The project proponents concur that the GHG reduction targets established by Connecticut’s Global Warming Solutions Act (GWSA) are unaffected by intervening federal or regional action. This does not affect the analysis or conclusions presented in the FEIS regarding greenhouse gas emissions or associated impacts.

Comment 5

The transportation sector GHG emissions reported in the FEIS were unchanged from the DEIS. New GHG emissions information from 2009 became available between the date of publication of the DEIS and FEIS. According to 2009 inventory, the transportation sector accounted for 43% of the 2007 Connecticut GHG emissions, versus 44% as reported in the FEIS. This difference is minor and does not affect the analysis or conclusions presented in the FEIS.

Comment 6

A discussion of both state and larger-scale impacts is relevant as the FEIS is a federal document that addresses NEPA and the FHWA NEPA implementation regulations and guidance. FHWA guidance states that calculation of transportation related emissions based on Vehicle Miles Traveled or VMTs (the method used in the FEIS analysis) can be useful for estimating the scale of regional GHG emissions relative to national or global totals (FHWA, 2010 - [http://www.fhwa.dot.gov/hep/climate/faq.htm#g3](http://www.fhwa.dot.gov/hep/climate/faq.htm#g3)). The FEIS does provide a quantitative analysis (as summarized in Table 4-10) of estimated CO\textsubscript{2} emissions at build-out attributable to both transportation and energy consumption sources. While there is a projected increase in emissions associated with the project, UConn continues to work to contribute to meeting the emission reduction targets established in the GWSA (i.e., a 10% reduction in the 1990 emissions by 2010 and an 80% reduction in the 1990 emissions by 2050) through the types of mitigation measures listed in Section 4.9.5.3 of the FEIS.

Comment 7

It is anticipated that electric service for the future North Campus development will be supplied primarily by Connecticut Light and Power, rather than by the campus-wide co-generation
facility. Alternative energy sources will still be considered for the North Campus development, as indicated in the mitigation commitments presented in Section 4.9.5.3 of the FEIS. The most feasible forms of alternative energy for the North Campus development include small-scale on-site clean or renewable energy generation (fuel cell technology, solar hot water, and solar electric) to augment off-site power sources.

The electrical utilities currently planned for the roadway extension will support future electric vehicle charging capability on the North Campus. UConn is committed to and actively pursuing the use of electrical vehicles and alternative fuels for certain campus vehicles. UConn recently received its first plug-in EV fleet vehicle, which will replace a petroleum diesel truck for campus deliveries by the Central Warehouse. UConn also has a car-sharing and bike-sharing program that was introduced last semester, and is using biodiesel blend in its motor pool.

Low sulfur diesel fuels or “biofuels” are required in construction vehicles/equipment for all UConn construction projects. Alternative transportation fuels such as biofuels will be considered for project vehicles associated with individual North Campus developments. This mitigation commitment is reflected in the ROD, in addition to the other GHG mitigation measures already cited in the FEIS.

**Comment 8**

UConn’s “Environmental, Health, and Safety Requirements for Construction, Service, and Maintenance Contractors” outlines contractor air pollution control requirements for construction vehicles/equipment for UConn construction projects. This document is referenced in all UConn contract documents. An authorized contractor representative must sign-off on this document, serving as an acknowledgment and understanding of these requirements. Specific air pollution control requirements include, but are not limited to:

- Contractors shall retain fuel slips for construction vehicles/equipment that are refueled on site. Low sulfur diesel fuels or “biofuels” are required.
- Vehicles shall not be operated near building fresh air intakes, and shall be equipped with exhaust scrubbers to minimize impact to indoor air quality.
- Equipment shall not be allowed to idle for excessive periods of time when not in use. Connecticut law prohibits vehicles of all kinds from unnecessary idling for more than 3 minutes. Provisions are made for weather extremes, certain service vehicles and health-related conditions (RCSA 22a-174-18). This regulation applies to ALL vehicles in Connecticut.
- Solvent or other noxious emissions shall be evaluated as part of the work planning process to determine engineering control requirements prior to field implementation of the scope of work.

Contract documents for the proposed roadway construction and North Campus development will include reference to UConn’s “Environmental, Health, and Safety Requirements for Construction, Service, and Maintenance Contractors,” which contains these requirements. The ROD reflects this clarification.
Matthew W. Hart, Town Manager, Town of Mansfield

Comment 1

Mansfield residents (and the general public) will be given the opportunity to review and comment on construction plans for the project during subsequent stages of the CTDOT roadway design and approval process, state and federal environmental permitting, State Traffic Commission approval, and CEPA Comparative Evaluations for development of individual North Campus parcels. UConn will follow all applicable public notice requirements for future project approvals and will continue to provide copies of project-related documents on the UConn Office of Environmental Policy website.

Comment 2

Construction phase mitigation measures will be implemented for the construction of the structures at Wetlands A and C, as well as the box culvert at Wetland B. These are anticipated to include provisions such as time-of-year restrictions, restrictions on equipment laydown areas, the use of wetland matting where necessary, and construction-phase monitoring, in addition to erosion and sedimentation controls in accordance with CTDOT and DEEP requirements. These general mitigation commitments are reflected in the ROD. Specific construction mitigation measures for the proposed bridges/structures will be identified during subsequent design and permitting.

Comment 3

As indicated in Section 4.6.3.5 of the FEIS, the two-way stop controlled intersection of South Eagleville Road at Separatist Road is expected to operate at LOS F for southbound vehicles under the 2010 No Build conditions during the afternoon peak hour. Construction of a new traffic signal would mitigate this background deficiency. Construction of North Hillside Road will not result in any additional delay at this location; however, the development of the North Campus will generate additional traffic volumes, exacerbating the poor LOS. It is recommended that timing of the mitigation improvement be reviewed based on the phasing of the North Campus development, which is reflected in the ROD.

Prior to moving forward with this mitigation, it is recommended that new traffic counts and a delay study be performed during a typical afternoon peak hour. While the analysis indicates LOS F for southbound vehicles, actual delay realized by vehicles may be lower due to lower gap acceptance values. A new traffic signal warrant analysis should also be performed based on actual 2012 traffic volumes in order to verify that the four-hour and eight-hour signal warrants are met according to the standards set forth in the 2009 Manual on Uniform Traffic Control Devices (MUTCD). Lastly, an accident analysis should be performed utilizing the latest three years of available data to review recent accident patterns at the intersection. It is recommended that these additional analyses be conducted as part of the STC Major Traffic Generator Certificate process, and revisited as part of the CEPA Comparative Evaluation process. Ultimately, a threshold of development will be reached wherein the MUTCD Warrants are met, at which point it would be prudent for UConn to implement the mitigation measure.
Comment 4

As indicated in the comment, several references to projects in the FEIS are outdated due to the passage of time between the DEIS and FEIS. The following items update the status of the referenced projects, thereby incorporating these updates into the ROD as part of this response to comments document:

- UConn Water Reclamation Facility – 90% pipeline infrastructure is in place. The treatment works are under construction and will be completed this fall. The project is anticipated to be fully completed by December 5, 2012.
- Storrs Center – Phase 1 apartments with 1st floor retail is under construction. Retail will be open in April 2012, and the apartments will be ready for occupancy in August 2012. Phase 1 also includes a parking garage. Construction of the parking garage will begin once all the retail has been moved into their new locations. Some existing retail needs to be demolished prior to constructing the parking garage.
- University Water Supply Plan – completed in May 2011

Comment 5

The reference at the bottom of page 30 of the FEIS inadvertently references Alternative 2B. This sentence should reference Alternative 2C to correctly reflect the alternative that is described in the subsequent parcel descriptions on pages 30 through 32.

James R. Knox

This comment supports the conclusion reached in the FEIS and the need for the Proposed Action to provide an alternative access to the campus from Route 44 and alleviate traffic on surrounding secondary roads and neighborhoods. No further response is necessary.
January 24, 2012

Dear Ms. Jackson-Grove and Mr. Miller:

We have reviewed the documentation submitted in the Final Environmental Impact Statement (FEIS), dated December 13, 2011, for the North Hillside Road Extension at the University of Connecticut Storrs campus in the Town of Mansfield, Connecticut. In our April 13, 2010 letter to Fuss & O'Neill, we requested that the FEIS reflect our recommendations in regard to numerous issues. Specifically, our recommendations include the implementation of alternatives/modifications for wetland crossings A, B and C; addition of the mitigation area entitled, “A-4: Cultivated Field East of Wetland Area A” to the proposed conservation easement established for the approximate northwest corner of the site; inclusion of a “worst-case” value for impervious surfaces associated with the development envelope for the purpose of evaluating secondary and reasonably foreseeable cumulative impacts as a result of the project; and providing a further, more in-depth explanation for your determination of the preferred alternative, Option A, rather than Options A-3 or A-5. The following outlines your adherence to these recommendations and requests additional information that will need to be included and addressed in your 404 Individual Permit application submittal.

The FEIS indicates the revisions made in response to our 2010 letter in regard to the three wetland crossings, including the use of a 40-foot precast concrete rigid frame with an open bottom at Crossing A, resulting in 100 square feet of direct wetland impacts; an 8 foot by 4 foot box culvert that will accommodate design flows for Crossing B, resulting in 4,065 square feet of direct wetland impacts; and a 76 foot clear span bridge over Crossing C, resulting in no direct or secondary impacts to wetlands. These avoidance and minimization measures for this section of the project are satisfactory for aiding in our determination of the Least Environmentally Damaging Practicable Alternative (LEDPA); however, there is a discrepancy among document sections in regard to the square footage of impacts associated with these crossings.
In section 3.4 – Roadway Alignment Alternatives, Table 3-1 and the accompanying narrative on page 24 indicate that the preferred alternative A will result in a total of 0.34 acres of direct wetland impacts as a result of the roadway; however, in Section 4.13 – Wetland Impacts, Figure 4-10 and Table 4-19 show that the preferred alternative 2C, including the road and development envelope will total 0.31 acres. Section 4.10 of the executive summary also indicates total impacts as a result of the road and development envelope at 0.31 acres. Please be sure to clarify the correct total for impacts to jurisdictional areas in your application submittal.

The proposed mitigation area, A-4: Cultivated Field East of Wetland Area A, is now shown to be included in the conservation easement that was set up for the red maple swamp at the approximate northwest corner of the site. However, two areas on Parcel B remain as “non-development areas”. Please provide an explanation as to why these areas are not included under the conservation easement in your 404 application submittal. We would consider the preservation of these areas to be highly important for preservation of vernal pool upland habitat.

In addition, as part of the overall mitigation plan, you propose to restore approximately 200-feet of intermittent stream located east of Crossing A. It does not appear that any specific information was provided in the FEIS regarding this proposal. Please provide detailed plans and a narrative describing the restoration proposal in your 404 Individual Permit application submittal.

A worst-case scenario development envelope was provided to depict the maximum limits of development for the purpose of evaluating secondary and reasonably foreseeable cumulative impacts. In attachment G, the stormwater management systems are described and include conventional and Low Impact Development (LID) practices; however, the specific usage and design of all of the proposed LID measures are not clearly indicated on the conceptual stormwater management plan. The use of these practices will be integral in reducing the secondary and cumulative effects resulting from the proposed development envelope. More specifically, the use of LID practices will promote the Total Maximum Daily Load (TMDL) goals outlined in a 2007 report by the Connecticut Department of Environmental Protection for Eagleville Brook to ensure that impairment of aquatic life does not continue in this waterway as a result of insufficient stormwater management practices. We applaud your efforts to incorporate the use of LID measures into your proposal; however, a more robust plan for LID and overall stormwater management will need to be submitted with your 404 application.

Further, you indicate that the Town of Mansfield requires a minimum of 4 parking spaces per 1,000 square feet of building space. You propose to use a more conservative 3.5 to 1,000 ratio in order to minimize impervious surface at the site; however, the explanation for this reduction and any potential for further reduction was not provided in the FEIS. Please address the potential for reducing the parking ratio below 3.5 in your application submittal.
Finally, in regard to the need for justifying your preferred alternative roadway alignment, your explanation for choosing the preferred alternative appears to be valid based on the project and site constraints. Based on the considerations you put forth and the modifications made to the proposal up to this point, the preferred alternative, depicted on the document drawing entitled, “Figure ES-4 FEIS Preferred Alternative – North Campus Development”, appears to be the LEDPA, in accordance with Section 404(b)(1) of the Clean Water Act, known as the 404(b)(1) Guidelines; these guidelines are found at 40 CFR 230.

Upon receipt of a complete 404 Individual Permit application, including the additional information requested in this letter, we will issue a 30-day Public Notice. We will consider any comments received in response to the Public Notice in order to make a LEDPA determination and continue the permit review process.

If you have any questions, please contact Amy Bourne, of my staff, at (978) 318-8651.

Sincerely,

[Signature]

Jennifer L. McCarthy
Chief, Regulatory Division

Copy Furnished:

Fuss & O’Neill
Eric Mas
78 Interstate Drive
West Springfield, MA 01089
January 19, 2012

Amy Jackson-Grove
Division Administrator FHWA
628-2 Hebron Avenue, Suite 303
Glastonbury, Connecticut 06033

Re: Final Environmental Impact Statement North Hillside Road Extension Mansfield, Connecticut (CEQ #20110425)

Dear Ms. Jackson-Grove:

The Environmental Protection Agency-New England Region (EPA) has reviewed the Federal Highway Administration’s (FHWA)/Connecticut Department of Transportation’s (CTDOT) Final Environmental Impact Statement (FEIS) for the North Hillside Road Extension project in Mansfield, Connecticut. We submit the following comments in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

The DEIS describes the proposed extension of the North Hillside Road on the UConn Storrs Campus to the north to connect with Route 44 in Mansfield, Connecticut. The 3400-foot extension is proposed as a two-lane 32-foot-wide road intended to relieve local traffic, provide an alternate entrance to the UConn campus, and provide access to the proposed North Campus development area. Funding for the project would be provided in part by a $6.1 million federal appropriation to be administered by CTDOT.

EPA’s comments on the DEIS highlighted our concerns related to wetlands, air quality and secondary/cumulative impacts for consideration as the FEIS was developed for the proposed project. The FEIS addresses many of our DEIS comments but we continue to encourage FHWA and CTDOT to refine the project design and proposed mitigation to avoid environmental impacts related to stormwater runoff and wetlands. Our specific recommendations follow.

Stormwater Management

Our comments on the DEIS highlighted the Eagleville Brook watershed—the focus of the first impervious cover, stormwater Total Maximum Daily Load (TMDL) analysis in the United States. This first of its kind TMDL has become a model for other states’ efforts in addressing stormwater in a TMDL, and we believe it should serve as the model for how activities in the project area watershed should be implemented. Our DEIS comments specifically recommended significant use of pervious pavement for new development areas (such as parking spaces) and
explained that this cost effective best management practice (BMP) has been extensively studied and its effectiveness documented in New England by the University of New Hampshire's (UNH) Stormwater Center. The FEIS notes that, "UConn will consider the use of pervious pavement..." and states that the FEIS has been revised "to reflect the potential use of pervious pavement...." While this is helpful, we continue to believe that a more committed approach is warranted. We believe FHWA/CTDOT/UConn should develop and implement requirements for this specific BMP for parking lots.

Further, the FEIS does not fully explore the question we posed in comments on the DEIS regarding the need for 3.5 parking spaces per 1,000 square feet of building floor space. The FEIS asserts that the Town of Mansfield requires a minimum parking ratio of 4 spaces per 1,000 square feet of building floor space for the types of uses proposed for the North Campus, but that UConn is proposing just 3.5 spaces to reduce the development footprint and amount of impervious cover. While this reduction is a step in the right direction, the FEIS does not contain an assessment of whether these types of uses -- if located on a shuttle-served college campus instead of elsewhere in a community -- require the proposed 3.5 parking spaces or if fewer would suffice. As we indicated in our comments on the DEIS, even a reduction to 3 spaces per 1,000 square feet of building floor space would lessen the number of parking spaces considerably. This issue is important since impervious cover not only can generate stormwater runoff but excess parking can lead to increased vehicle trips, resulting in greater greenhouse gas emissions. Before UConn enters the next stage of design and permitting, we strongly recommend it calculate how many spaces are actually needed, using reasonable assumptions about what percentage of the trips to North Campus will be on foot, bicycle, or shuttle. As we said before, some of the best research on the subject of parking requirements has been done by UConn's Connecticut Transportation Institute and we highly recommend consulting experts on that faculty.

In addition, we support the work at UConn (mentioned in the FEIS) to develop a sustainable development policy that would address pervious pavement and other LID measures. At a minimum, all planned and future infrastructure expansion should commit to using pervious pavement wherever feasible and unless it can be definitively demonstrated that it is impracticable. We recommend that these mitigation requirements be incorporated in the FHWA Record of Decision (ROD) to guide future infrastructure development on the North Campus. Our comments on the DEIS requested a meeting to discuss stormwater management issues in greater detail. To my knowledge, such a meeting never occurred. EPA continues to be willing to coordinate with FHWA, CTDOT and UConn regarding stormwater management related to the project and potential secondary development.

**Wetland Issues**

We note that the most recent Clean Water Act (CWA) Section 404 application to the U.S. Army Corps of Engineers was withdrawn by the applicant on June 22, 2009, and that no subsequent revised application has been submitted. A complete CWA Section 404 application must be submitted and reviewed prior to the determination of the Least Environmentally Damaging Practicable Alternative (LEDPA) and approval of proposed compensatory mitigation. Additional information may be required while the CWA Section 404 permit review process is...
conducted. In general, EPA continues to support the avoidance and preservation approach to mitigation described in the FEIS and will continue to participate in the development and review of the mitigation plans as they progress through the CWA Section 404 process. As part of future mitigation discussions we will likely recommend that an additional parcel of land with a vernal pool and forested wetlands—which serves as a wildlife corridor—be preserved along with the larger conservation area.

Thank you for the opportunity to review the FEIS for the North Hillside Road Extension project. Please contact Timothy Timmermann (617-918-1025) of EPA's Office of Environmental Review with any comments or questions about this letter.

Sincerely,

H. Curtis Spalding
Regional Administrator

cc:

Richard A. Miller
Director of Environmental Policy
University of Connecticut
31 LeDoyt Road U-3055
Storrs, Connecticut 06269-3055
January 23, 2012

Richard A. Miller
Director of Environmental Policy
University of Connecticut
31 LeDoyt Road, U-3055
Storrs, Connecticut 06269-3055

Amy Jackson-Grove
Division Administrator
Federal Highway Administration
628-2 Hebron Avenue, Suite 303
Glastonbury, Connecticut 06033

Dear Mr. Miller and Ms. Jackson-Grove:

The Department of Energy & Environmental Protection (DEEP) has reviewed the Final Environmental Impact Statement (FEIS) prepared for the North Hillside Road Extension on the UConn campus in Storrs. The following commentary is submitted for your consideration.

The Inland Water Resources Division reports that, in general, the FEIS accurately describes the coordination that has occurred with the Department and Army Corps of Engineers since the publication of the draft document.

Figure 3-7, Proposed Conservation Easement, includes both Non-Development Area and Proposed Conservation Easement; the difference between these designations is unclear. On page 126, the vernal pool mitigation measures include limiting development within the 750-foot critical upland area to less than 25%. It is not clear whether this applies to each vernal pool separately or to all of the vernal pools collectively. For example, will this standard apply to Vernal Pool #1, with the development envelope to the south and roadway to the west?

The IWWRD has used the FEIS to preliminarily identify issues that will require the submittal of additional documentation in applications for subsequent permitting for the project. These include:

- detailed reasons for the rejection of Alternative A-5 during the final selection of the preferred roadway alignment,
- language describing development restrictions in the proposed conservation areas,
- incorporation of Low Impact Development techniques in the design of stormwater collection systems for both the roadway and subsequent lot development,
- a baseline assessment of the geomorphic conditions of Cedar Swamp Brook, including channel stability, bank erosion potential and bank erosion rates, in order to demonstrate that increased development will not lead to degradation of aquatic resources similar to that which has occurred in Eagleville Brook and...
Connecticut Department of Energy and Environmental Protection

Richard A. Miller
Amy Jackson-Grove

January 23, 2012

- site plans that provide a clear and unambiguous delineation and identification of the areas being proposed for development and the areas on which no development will occur (i.e., areas to be placed under conservation easements and any other areas that will not be developed in the future).

The following comments provide updates of the information provided in Section 4.9, Air Quality Impacts, to reflect changes which have occurred since publication of the DEIS. The standards for sulfur dioxide, carbon monoxide, ozone, nitrogen dioxide and lead were revised in October 2011; the new standards can be found at [http://www.epa.gov/air/criteria.html](http://www.epa.gov/air/criteria.html). The text states that Connecticut adopted the national standards; it should be noted that the State does not need to adopt national standards into state regulation in order to be bound by them. In addition, as of July 2011, DEEP operates a network of 21 sites [not the 26 reported in the FEIS] throughout Connecticut used for monitoring pollutant and meteorological parameters, as noted in the Connecticut 2011 Annual Air Monitoring Network Plan.

Most of the narrative contained in Section 4.9.5.1, Greenhouse Gases and Global Climate Change, has been added since the DEIS. The following comments are offered to clarify this information. The GHG reduction targets established by Connecticut’s Global Warming Solutions Act (GWSA), Section 22a-200a of the Connecticut General Statutes, are unaffected by intervening federal or regional action. The second paragraph of section 4.9.5.1 suggests that these reduction targets are affected by ROGI or federal intervention.

This section of the FEIS also places a large amount of emphasis on Connecticut’s Climate Change Action Plan when discussing the state’s efforts to address climate change. While the information regarding Connecticut’s Climate Change Action Plan is accurate, the GWSA is ultimately the driving force behind the state’s climate change action, while the Climate Change Action Plan is more akin to a historical guidance document.


Section 4.9.5.2, Potential Impacts, states that, “Because climate change is a global issue, and the emissions changes due to project alternatives are very small compared to global totals, this FEIS does not include a detailed quantitative analysis of projected GHG emissions for the Proposed Action.” This characterization of the impact of project alternatives fails to recognize that the FEIS should address the impact of emissions changes as they relate to state-specific GHG requirements. Therefore, any discussion of the effect of emissions changes on global totals is not germane to this analysis.

The following list includes specific recommendations for incorporation into section 4.9.5.3, Mitigation Strategies:

- To mitigate the increased GHG emissions that are associated with the project, alternative transportation fuels should be considered for all project vehicles.
Connecticut Department of Energy and Environmental Protection

Richard A. Miller
Amy Jackson-Grove

- 3 -

January 23, 2012

- Alternative energy sources should be considered in the additional buildout of the North Campus. This could offset some of the GHG emissions increases associated with energy use of the North Campus facilities resulting from the expansion.

- Finally, project leaders should take advantage of the opportunity that the project provides to consider including infrastructure for electric vehicle charging or other alternative fueling infrastructure.

In our comments on the DEIS, the Department recommended the use of construction equipment that has the best available controls on diesel emissions and that such requirements be included in contract specifications. The responses and the revised FEIS state that this will be done, where appropriate. The Department again urges that this mitigation measure be adopted. We also reiterate our recommendation that the project sponsor include language similar to the anti-idling regulations in the contract specifications for construction in order to allow them to enforce idling restrictions at the project site without the involvement of the Department.

Thank you for the opportunity to review the FEIS. If there are any questions concerning our comments, please contact me at 860-424-4111 or david.fox@ct.gov.

Sincerely,

David J. Fox
Senior Environmental Analyst
Office of Environmental Review

cc: Robert Hannock, DEEP/OPPD
Paul Parrell, DEEP/APS
Robert Gilmore, DEEP/IWRD
Sara Radaelli DEEP/IWRD
January 23, 2012

Ms. Amy Jackson-Grove
Division Administrator-FHWA
628-2 Hebron Avenue, Suite 303
Glastonbury, CT 06033
Email: Amy.Jackson-Grove@dot.gov

Mr. Richard A. Miller
Director of Environmental Policy
University of Connecticut
31 LeDoyt Road U-3055
Storrs, CT 06269-3055
Email: rich.miller@uconn.edu

Re: Final Environmental Impact Study (FEIS) for North Hillside Road

Dear Ms. Jackson-Grove and Mr. Miller:

Thank you for providing the opportunity to comment on the Final Environmental Impact Study for North Hillside Road. As was noted in the Town’s comments on the 2008 Draft EIS (DEIS), the Town Council and Planning and Zoning Commission agreed with the conclusion of the DEIS that the North Hillside Road Extension project and associated development of UConn’s North Campus could be implemented without significant environmental impact. The only request made as part of our DEIS comments was that Mansfield residents and representatives be given adequate notice and opportunity to review and comment on construction plans prior to their approval and implementation.

The FEIS maintains the preferred roadway alignment identified in the DEIS and incorporates several new mitigation measures to further reduce the environmental impact of the project, including:

- Significant measures to protect wetlands along the roadway alignment through the construction of two bridges where previously culverts had been proposed.
Matthew W. Hart, Mansfield Town Manager

- Further reduction in wetland impacts through changes to the preferred North Campus Development by replacing development Parcel A with a ±76 acre conservation easement and reallocating development previously proposed for Parcel A to Parcel B.
- Incorporation of additional measures to further mitigate impacts on wetlands and water quality, including:
  - Use of Low Impact Development (LID) techniques as part of the overall stormwater management plan for the roadway construction and the development of the North Campus
  - Measures to reduce impacts of deicing and anti-icing activities
  - Measures to mitigate impacts of lighting on night skies and nocturnal habitats
  - Implementation of a monitoring program to control invasive species
  - Timing of construction to maximum extent possible to minimize impacts on impacts to amphibian habitats.
- Acknowledgement of impacts on Greenhouse Gas Emissions (GHG) and measures to mitigate those impacts.
- Acknowledgement of the potential secondary and cumulative impacts that may occur to various environmental resources in Mansfield and the region through the development of housing and other services to support the anticipated growth in employment resulting from the development of North Campus.

Based on the above summary, staff has found the FEIS to be consistent with the comments provided by the Town Council and Planning and Zoning Commission in 2008. Additionally, we provide the following comments for your consideration:

- While the response to our 2008 comments included in Appendix N indicated that opportunities for review and comment on construction plans would be provided during subsequent stages of the design and permitting process, we would like to take this opportunity to reiterate that request for the record.
- To ensure that the change from culverts to bridges as referenced above meets the desired goals of reducing wetland impacts and protecting wildlife habitat connectivity, specific measures should be put in place during construction such as restricted laydown areas and location of ‘no equipment’ areas, etc. to minimize impacts on those areas during construction.
- While no significant changes were made to the assessment of traffic impacts and mitigation measures, it is important to note that the intersection of South Eagleville Road and Separatist Road/Sycamore Drive has been of ongoing concern to the Town due to the number of accidents at the intersection and resident complaints. The FEIS recognizes that the Separatist Road approach will operate at a LOS F during PM Peak hours under both the 2010 and 2030 No Build Conditions. As such, we respectfully request that signalization of this intersection be made a priority and installed prior to full build-out of the North Campus area.
- As with any document of this magnitude and duration, there are projects referenced whose status has changed since the drafting of the document, including:
  - Water Reclamation Facility. This project is referred to in various places as being under consideration or design. These references should be updated to reflect current construction status and anticipated completion date. (Pages ES-12, 95)
Matthew W. Hart, Mansfield Town Manager

- Storrs Center. References should be updated to reflect that the project is under construction.
- University Water Supply Plan. References should reflect completion date of May 2011 instead of 'anticipated completion date.' (Page 98)
  - It appears that the reference at the bottom of page 30 to 'Alternative 2B' should be revised to 'Alternative 2C' to correctly reflect the new number for the plan being described in the following parcel descriptions.

In closing, we look forward to your continued cooperation regarding the review and implementation of construction plans for the North Hillside Road extension and the associated development of UConn's north campus. If you have any questions regarding the comments included in this letter, please contact Linda Painter, Director of Planning and Development.

Sincerely,

Matthew W. Hart
Town Manager

Enclosure: February 10, 2009 Letter from Town Council and PZC

C: Town Council
   Planning and Zoning Commission
   Conservation Commission
   Linda Painter, Director of Planning and Development
   Lon Hultgren, Director of Public Works
Gregory Haddad, Deputy Mayor, Mansfield Town Council

TOWN OF MANSFIELD
Planning and Zoning Commission

Richard A. Miller, ESQ
Director, Office of Environmental Policy
University of Connecticut
31 LeDoyt Road
Unit 3055
Storrs, CT 06269-3055

Bradley D. Keazer
Division Administrator, Federal Highway Administration
628-2 Hebron Avenue
Suite 303
Glastonbury, CT 06033-5007

Re: Draft Environmental Impact Study, North Hillside Road Extension

Dear Messers Miller and Keazer:

Mansfield’s Town Council and Planning and Zoning Commission, with staff assistance, have reviewed the December 2008 draft Environmental Impact Statement for the North Hillside Road Extension project. The following comments are presented for your consideration:

1. The North Hillside Road Extension project and associated development of UConn’s North Campus have been studied extensively for over ten years, with numerous opportunities for public review and comment. The December 2008 draft Environmental Impact Statement further refines the analysis of these inter-related projects and Mansfield’s Town Council and Planning and Zoning Commission are in agreement with the EIS conclusion that these projects can be implemented without significant environmental impact.

2. Mansfield’s Town Council and Planning and Zoning Commission support the subject projects for many reasons including the following:
   A. The extension of North Hillside Road will facilitate traffic movements on state and local roads and will reduce vehicular traffic on many local roadways that were not designed for current traffic volumes. This roadway project, and associated walkway and bicycle lanes, will promote both vehicular and pedestrian safety for all Mansfield residents and visitors, including UConn students and staff. This project has been a high priority transportation improvement for decades.
   B. The extension of North Hillside Road will facilitate the development of the UConn North Campus and provide regionally significant economic development opportunities. The North Campus development
Gregory Haddad, Deputy Mayor, Mansfield Town Council

will enhance research opportunities for UConn students and staff, job creation and collaborative public/private partnerships.

C. The extension of North Hillside Road and associated public sewer and water utility extensions will facilitate the coordination of needed utility extensions to Mansfield’s Four Corners area which has documented ground water contamination and private well and septic system problems.

3. The subject project is fully consistent with the Connecticut Policies Plan for Conservation and Development, the Windham Region Land Use and Transportation Plans and Mansfield’s Plan of Conservation and Development. Many specific goals, objectives, policies and recommendations contained in these plans would be promoted by the extension of North Hillside Road and the associated development of North Campus.

4. The draft Environmental Impact Statement appropriately identifies comprehensive mitigation measures that need to be incorporated into construction plans. It is essential that in association with the listed permits that need to be obtained, Mansfield residents and representatives be given adequate notice and opportunity to review and comment on construction plans prior to their approval and implementation.

Mansfield officials are available to discuss any of the comments contained in this letter. We anticipate continued cooperation regarding the review and implementation of construction plans for North Hillside Road extension and the associated development of UConn’s North Campus. If you have any questions regarding this letter, please contact Mr. Gregory J. Padick, Mansfield’s Director of Planning at 860-429-3329.

Very truly yours,

Gregory Haddad, Deputy Mayor
Mansfield Town Council

Rudy Favretti, Chairman
Mansfield Planning and Zoning Commission

Cc: Thomas A. Harley, CT Department of Transportation
Corey M. Rose, U.S. Army Corp of Engineers, N.E. District
James R. Knox

From: James Knox [mailto:jrknox1804@sbcglobal.net]
Sent: Sunday, January 15, 2012 2:32 PM
To: Miller, Richard
Subject: Extension of North Hillside Road

Richard A. Miller, Director
Office of Environmental Policy
University of Connecticut
Storrs, CT 06269-3055

January 15, 2012

Dear Mr. Miller:

I have examined the FEIS dated 12/13/2011 prepared for the extension of North Hillside Road, and I strongly support its conclusions.

From the viewpoint of a 40-year Mansfield resident, I can state that the road’s timely completion is important not only to the University but also to the many Mansfield residents who have had to tolerate heavy UConn traffic on our small local roads. When completed, the short extension will provide a direct access from Rt. 44 to the huge Charter Oak Dorm complex and to UConn’s North Parking garage.

The town has been suffering student and commuter traffic for decades, and we've waited for multiple studies of this road plan for at least 12 years. We hope you can expedite its final approval and completion.

Respectfully,
James R. Knox
146 Birch Road
Storrs, CT 06268
860-429-8288