ENVIRONMENTAL IMPACT EVALUATION

NEW CONSTRUCTION AND RENOVATION PROJECT

UNIVERSITY OF CONNECTICUT HEALTH CENTER
FARMINGTON, CONNECTICUT

MMI #1958-58

December 2011

Prepared for:

University of Connecticut Health Center
263 Farmington Avenue
Farmington, Connecticut 06030

Prepared by:

MILONE & MACBROOM, INC.
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773
www.miloneandmacbroom.com

MILONE & MACBROOM®

TABLE OF CONTENTS

3.0 EXISTING ENVIRONMENT AND ANALYSIS OF IMPACT

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

ACC	Ambulatory Care Complex
dBA	A-Weighted Decibels
CEPA	Connecticut Environmental Policy Act
CCEA	Connecticut Center for Economic Analysis
CGS	Connecticut General Statutes
CO	Carbon monoxide
ConnDOT	Connecticut Department of Transportation (also CT DOT or DOT)
CRCOG	Capitol Region Council of Governments
DEEP	Connecticut Department of Energy & Environmental Protection
DPH	Connecticut Department of Public Health
EIE	Environmental Impact Evaluation
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIS	Flood Insurance Study
FMC	Flood Management Certificate
FSC	Farmington Surgery Center
GIS	Geographic Information System
gpd	Gallons per day
HVAC	Heating, Ventilation and Air Conditioning
ITE	Institute of Transportation Engineers
LEED	Leadership in Energy and Environmental Design
LOS	Level of Service
MARB	Medical Arts and Research Building
MDC	Metropolitan District Commission
mgd	Million gallons per day
MMI	Milone & MacBroom, Inc.
NAAQS	National Ambient Air Quality Standards
NDDB	Natural Diversity Data Base
NO_2	Nitrogen dioxide
O_3	Ozone
OPM	Office of Policy and Management
Pb	Lead
PM_{10}	Particulate matter smaller than 10 micrometers in diameter
psi	Pounds per square inch
RCSA	Regulations of Connecticut State Agencies
ROD	Record of Decision
s.f.	Square foot
SFHA	Special Flood Hazard Area
SHPO	Connecticut State Historic Preservation Office
SO_2	Sulfur dioxide
STC	Connecticut State Traffic Commission
UConn	University of Connecticut
UCHC	University of Connecticut Health Center
WPCA	Water Pollution Control Authority
WPCF	Water Pollution Control Facility

EXECUTIVE SUMMARY

PROJECT PURPOSE AND NEED

The University of Connecticut Health Center (UCHC) is an integrated academic medical center located in Farmington, Connecticut, approximately 10 miles west of the City of Hartford. The campus is home to the University's School of Medicine, School of Dental Medicine, the John Dempsey Hospital, the UConn Medical Group, UConn Health Partners, University Dentists, and research facilities. The Health Center currently employs approximately 5,000 people and generates nearly $1 billion annually in gross state product. The facility is closely linked with the university's main campus in Storrs through multiple cross-campus academic and administrative programs.

The following construction projects are proposed to be undertaken on the UCHC campus: a new hospital bed tower, a new ambulatory care complex (ACC), a new systems genomics/ personalized medicine facility, renovations to the original research laboratory facility, three parking garages, additional surface parking, renovations and infrastructure improvements, and related site work.

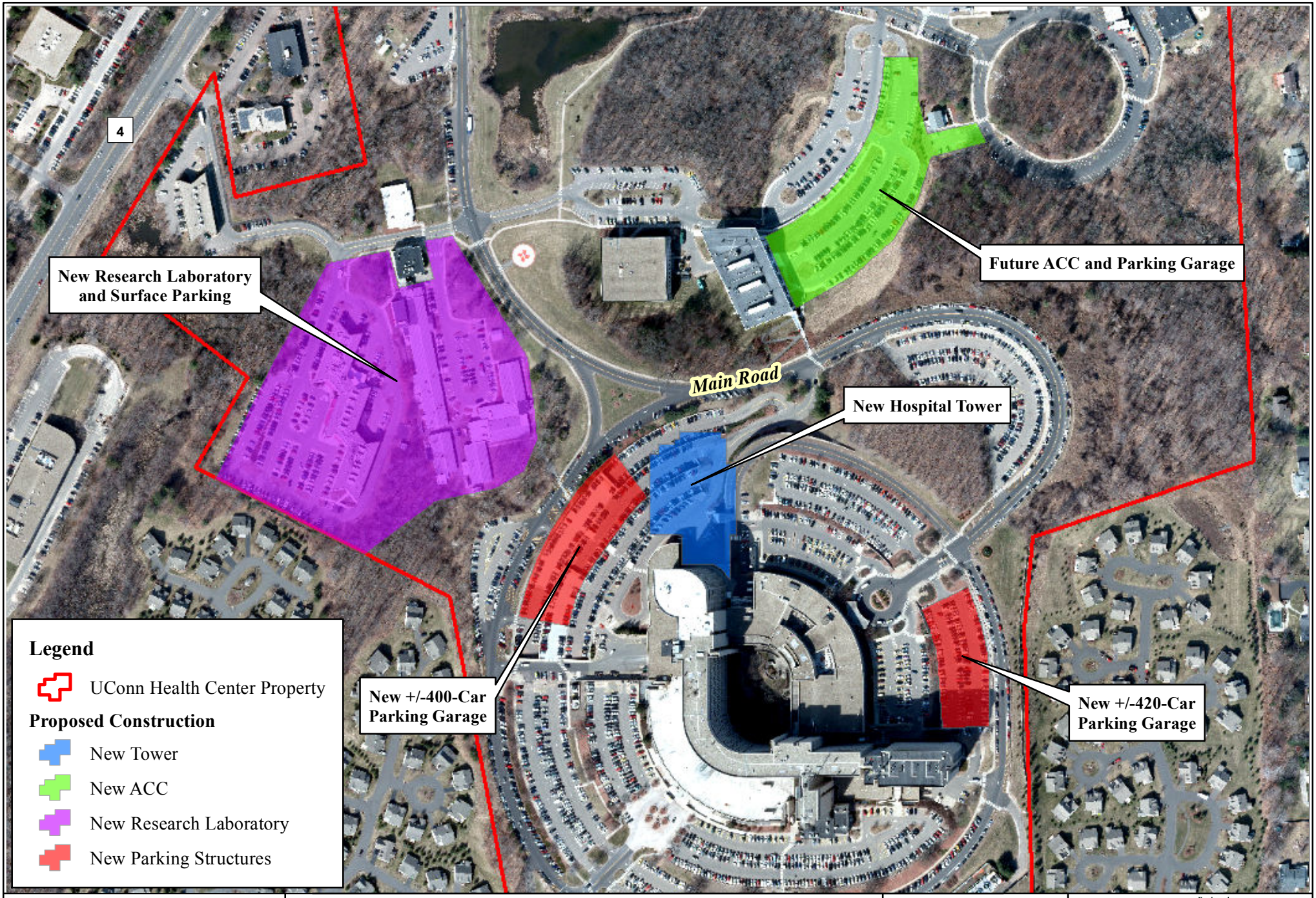
The purpose of the proposed facility expansion and renovation is to meet the following guiding principles identified in the 2002 UCHC Master Plan:

1. Protect and improve the campus environment
2. Provide for improvements in patient care facilities
3. Ensure the quality of educational programs and allow for their evolution
4. Provide for increases for research activity
5. Accommodate increases in ambulatory care
6. Foster efficient utilization of facilities

The format and content of the subject Environmental Impact Evaluation (EIE) are based upon the requirements of the Connecticut Environmental Policy Act (CEPA), Sections 22a-1 through 22a-1h of the Connecticut General Statutes (CGS), and Sections 22a-1 through 22a-1a-12 of the Regulations of Connecticut State Agencies (RCSA). State funds will be used for the design, construction, and renovation of the existing and proposed facilities, thus triggering the CEPA process. The sponsoring agency of this project is the UCHC.

ALTERNATIVES ANALYSIS

In accordance with CEPA requirements, alternatives have been analyzed for the UCHC Farmington campus. Selection of the aggregate project alternative included a several-tiered decision matrix. First, the no action alternative and a general comparison of off-site and on-site building alternatives for each project item were considered. Next, on-site alternatives were considered for the new hospital tower, new upper campus parking garages, new ACC, and new systems genomics/personalized medicine facility. Figure ES-1 presents an overview of the selected aggregate project alternative.



SOURCE:
2009 CRCOG Aerial Photo from CT ECO
University of Connecticut Health Center

N

Figure ES-1: Proposed Construction Areas

University of Connecticut Health Center
Environmental Impact Evaluation

LOCATION:
Farmington, CT

Map By: SJB
MMI#: 1958-58
MXD: P:\FigES-1Proposed.mxd
Date: December 13, 2011
Scale: 1 in = 300 ft

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM®
99 Realty Drive Cheshire, CT 06410
(203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com

EXISTING ENVIRONMENT AND ANALYSIS OF IMPACT

An inventory was conducted of the existing environment at the UCHC campus and an analysis was undertaken of potential impacts related to the proposed project. The following elements were considered:

Land Use – The proposed project is consistent with state, regional, and local land use plans and is in keeping with allowable land uses within the Town of Farmington's zoning regulations. No direct adverse impacts are anticipated to occur to land uses in the project vicinity and no inconsistencies with long-range planning strategies at the local, regional, or state levels. The proposed research laboratory, while consistent with surrounding land uses, may require a zone change and/or special permit from the local zoning board.

Socioeconomics – The proposed project is expected to have a positive impact on the local and regional socioeconomic horizon through creation of direct new employment on campus as well as indirect and induced job creation off campus. According to the Connecticut Center for Economic Analysis (CCEA), direct new employment on campus will reach about 680 by 2017. Direct, indirect, and induced employment is expected to reach 2,200 in 2019 and grow to as large as 16,400 by 2037. New job creation during the construction phase of the project is estimated to be 3,000 per year from 2012-2018 (CCEA). The Town of Farmington and its neighboring communities are well poised to absorb the expected increase in population and housing demand resulting from the UCHC expansion. The region already supports a population of diverse socioeconomic characteristics through a variety of housing types. Because UCHC is so easily accessible, it is anticipated that spin-off economic development will occur regionally, and thus increased population will disperse regionally.

Community Facilities and Services – The proposed project is intended to increase hospital efficiency as well as provide for an expansion of services. While the hospital will offer exceptional medical care to additional patients, the burden on local emergency services personnel is not expected to increase significantly. Rather, outpatient services, clinical services, and other non-emergency inpatient services are expected to increase.

Aesthetic and Visual Resources – The proposed facilities at UCHC are not expected to substantially change the aesthetics of the area. Viewed from off site, the most prominent feature will be the new tower, which will be similar in height and style to the existing tower, with more glass and architectural treatments. The remaining elements will be visible from points internal to the campus, with limited off-site exposure.

Public Utilities and Services – The project site is currently served by public water, sanitary sewer, storm sewer, electric, gas, telephone, and cable services. These utilities and services are believed to be adequate to serve the proposed project, with no significant adverse impacts. Improvements in stormwater management practices and energy efficiency are expected.

Cultural Resources – The land on which construction activities are proposed has been disturbed by past development, with no known sensitivity to historic or archeologic resources.

Traffic, Transportation and Parking – Traffic generation and intersection capacity analysis have been evaluated under existing and future conditions, both with and without the project. The results indicate that seven of the eight study intersections would operate at an unacceptable level of service (LOS) under future peak hour conditions even without the project. The additional traffic that is expected as a result of the proposed project will represent an additional burden on these intersections. As such, mitigation is proposed. Available mitigation alternatives include signalization, lane restriping, signal timing and/or phasing improvements, roadway widening, and provision of designated turning lanes. While a set of mitigation measures have been identified to offset impacts, ultimately, the extent and type of mitigation will be dictated by the Connecticut Department of Transportation through the State Traffic Commission (STC) permitting process. Additional parking is proposed as part of this project through a combination of parking structures and surface parking. The campus-wide increase in spaces is believed to be sufficient to satisfy demand at UCHC for at least the next 10 years.

Water Resources – No direct impacts will occur to surface water or groundwater associated with the implementation of this project. The majority of proposed construction at the UCHC campus will occur in areas that are already nearly 100% impervious. Minimal aggregate increases in impervious surfaces are expected to occur as a result of the facility expansion. Therefore substantial changes in stormwater runoff volumes are not anticipated. The project provides an opportunity to improve stormwater management and water quality controls at the campus.

Flood Hazard Potential – A Federal Emergency Management Agency (FEMA) designated special flood hazard area is located in the eastern portion of the existing parking lot near the Dowling South building on campus. Any work in that area, including incidental grading, will need to comply with National Flood Protection Act requirements.

Biological Environment – The vast majority of proposed development will occur in areas that are currently paved and/or existing buildings that do not support significant biological communities. The design will strive to avoid impacts to nearby wetland and if impacts are unavoidable, they will be minimized and/or mitigated through the design process.

Physical Environment – No significant changes are anticipated to the physical environment as a result of the proposed project. Localized regrading will be necessary; however, significant modifications to area topography are not contemplated. The size and scale of proposed structures is in keeping with the existing development on campus.

Air Quality – The project will not significantly impact air quality in the town or the region. A number of new air emitting sources will be utilized; however, these will be operated in accordance with current regulations and required permit conditions. Numerous controls are proposed for minimizing short-term impacts to air quality from fugitive dust and other pollutant emissions during the construction phase of this project.

Noise Quality – Temporary noise impacts associated with the construction of the new facilities are anticipated during construction. The majority of construction activities will occur in the

daylight hours to minimize noise impacts. Following construction, there will be no significant environmental noise impact generated by the proposed project.

Solid Waste and Hazardous Materials – Other than temporary construction and demolition-related impacts, minimal impacts related to solid waste and hazardous materials are expected to be associated with the renovation and expansion at UCHC. Modest increases in solid wastes are expected due to the increased patient capacity, service efficiency, and increased staff at the hospital. Such waste will continue to be removed through a private waste hauler. However, waste generation will not be significant in comparison to existing rates at the campus.

Energy Resources – Hospitals and healthcare facilities require significant amounts of energy. As with any new construction project, energy usage on the site will increase as a result of this project, particularly in regard to electricity and fossil fuel use. No renewable energy sources are currently proposed as part of this project although the use of green building designs involving glass increases the opportunity for direct solar heating. It is expected that by utilizing LEED certification-caliber energy efficiency designs, the new hospital tower will be approximately 10% more energy efficient over baseline conditions, while the new ACC and systems genomics/personalized medicine facilities will be at least 20% more energy efficient. Accordingly, the building design will minimize energy waste in an energy-intensive facility.

Cumulative Impacts – The potential for cumulative impacts was assessed for each aspect of the project environment. Positive cumulative impacts are projected through socioeconomic benefits, stormwater system improvements, and improvements to the quality of health care at the Heath Center. Cumulative traffic generation and utility demands have been identified; however, significant impacts are not projected to occur.

Unavoidable Adverse Environmental Impacts – Although a goal of this project has been environmental impact avoidance, minimization, and mitigation, certain adverse impacts will be unavoidable. These are predominantly in the category of short-term construction related impacts. The project will undergo a construction phase wherein additional equipment will be utilized at the site. Mitigation measures have been identified with respect to associated short-term air and noise quality. However, a certain degree of additional truck and equipment use and access will be necessary during this time period, which is unavoidable. Potential soil erosion and sedimentation impacts have also been identified. These will be mitigated through proper construction management techniques.

Irreversible and Irretrievable Commitment of Resources – The construction of the proposed project will utilize non-renewable resources (i.e., construction supplies, fuel, etc). Since these resources can not be reused, they are considered to be irreversibly and irretrievably committed. Similarly, disposal of demolition material at a landfill and/or solid waste disposal facility will take up capacity in such facilities which is irreversible and irretrievable.

PROJECT COSTS AND BENEFITS

State funding for this project is estimated at $700M. The project is expected to secure UCHC as a top tier academic medical center with the ability to draw in top students, educators, and researchers. The expansion will result in state-of-the-art hospital beds and facilities for emergency and inpatient services that are on par with competitive models. The following specific benefits are expected to occur as a result of the construction and operation of the Health Center expansion:

- Creation of a substantial number of construction-related jobs over multiple years as well as long-term permanent jobs
- Increase in access to high quality health care and improved patient care facilities in a multipurpose medical center
- Increase in and centralization of ambulatory care
- Increase in research activity to complement and augment existing academic research
- Retention and graduation of additional physicians and dentists through quality educational programs
- Future growth of UCHC
- Strengthening and stabilization of UCHC's finances
- Protection and improvement of the campus environment
- Utilization of more energy-efficient buildings

CERTIFICATES, PERMITS AND APPROVALS

The following table presents some of the pertinent local, state, and federal regulations and statutes that may affect this project.

List of Potentially Required Construction and Operational Permits

Permit/Approval	Reviewing Authority
STC Permit	State Traffic Commission
Flood Management Certification	Department of Energy & Environmental Protection
Air Quality Permit	Department of Energy & Environmental Protection
Inland Wetlands Permit	Department of Energy & Environmental Protection
Wastewater Discharge Permit – Sanitary	Department of Energy & Environmental Protection
Wastewater Discharge Permit – Process	Department of Energy & Environmental Protection
Stormwater Permit	Department of Energy & Environmental Protection
Construction Dewatering Permit	Department of Energy & Environmental Protection
Wastewater Discharge Approval	Farmington WPCA
Certificate of Occupancy	State Building Inspector
Fire Safety Approval	State Fire Marshal

1.0 INTRODUCTION

1.1 BACKGROUND

The University of Connecticut Health Center (UCHC) is an integrated academic medical center located in Farmington, Connecticut, approximately 10 miles west of the City of Hartford (Figures 1-1 and 1-2). The campus is home to the University's School of Medicine, School of Dental Medicine, the John Dempsey Hospital, the UConn Medical Group, UConn Health Partners, University Dentists, and research facilities.

The Health Center currently employs approximately 5,000 people and generates nearly $1 billion annually in gross state product. The facility is closely linked with the university's main campus in Storrs through multiple cross-campus academic and administrative programs.

The John Dempsey Hospital provides specialized and routine inpatient and outpatient services for adults and is widely recognized for its excellence in fetal medicine, cardiology programs, cancer care, and orthopedics. The hospital represents the only full-service Emergency Department in the Farmington Valley.

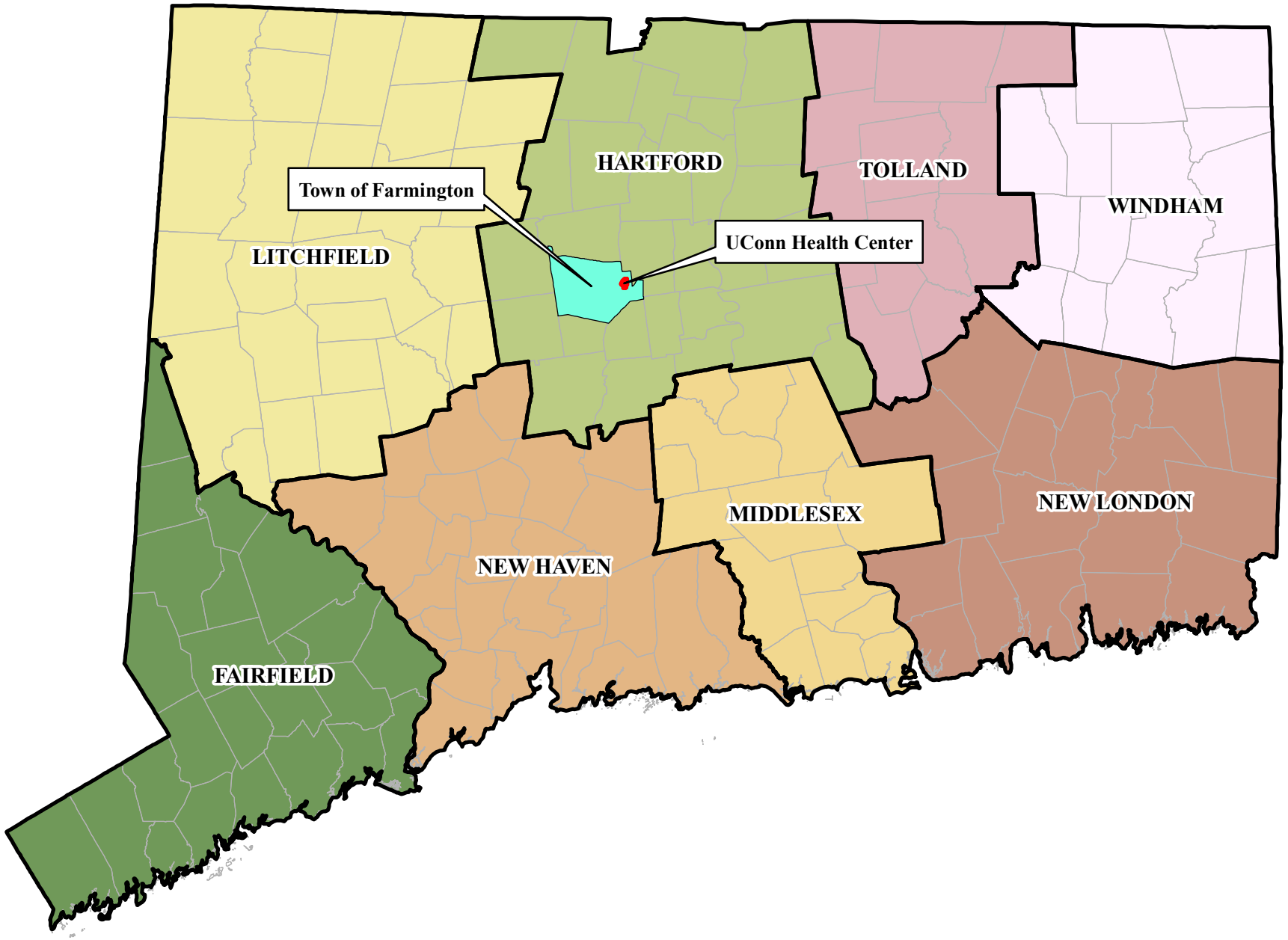
The UConn Medical Group provides a wide range of outpatient services. In all, the practice includes more than 450 physicians with expertise in more than 50 specialties. University Dentists provides complete preventive, corrective, and restorative care for patients of all ages. The campus also hosts the Center for Implant and Reconstructive Dentistry.

UCHC conducts an array of research programs in neuroscience, vascular biology, molecular biology, molecular pharmacology, biochemistry, cell physiology, cancer immunology, and stem cell research, among other fields.

The Health Center offers degree programs in medicine, dental medicine, and biomedical sciences; masters degree programs in public health and dental science; postdoctoral fellowships; residency programs; and continuing education programs for practicing health care professionals.

UCHC's public safety and emergency personnel provides assistance to the Town of Farmington services when requested. In addition to providing emergency service assistance, the UCHC Fire Department provides paramedic services to additional surrounding towns when requested.

Construction of the Health Center's main campus began in 1966. The main complex occupies a prominent hilltop near Interstate 84. In all, the campus consists of 37 buildings totaling over 2.1 million square feet (Figure 1-3).



SOURCE:
CT DEEP GIS Data
Town of Farmington

N

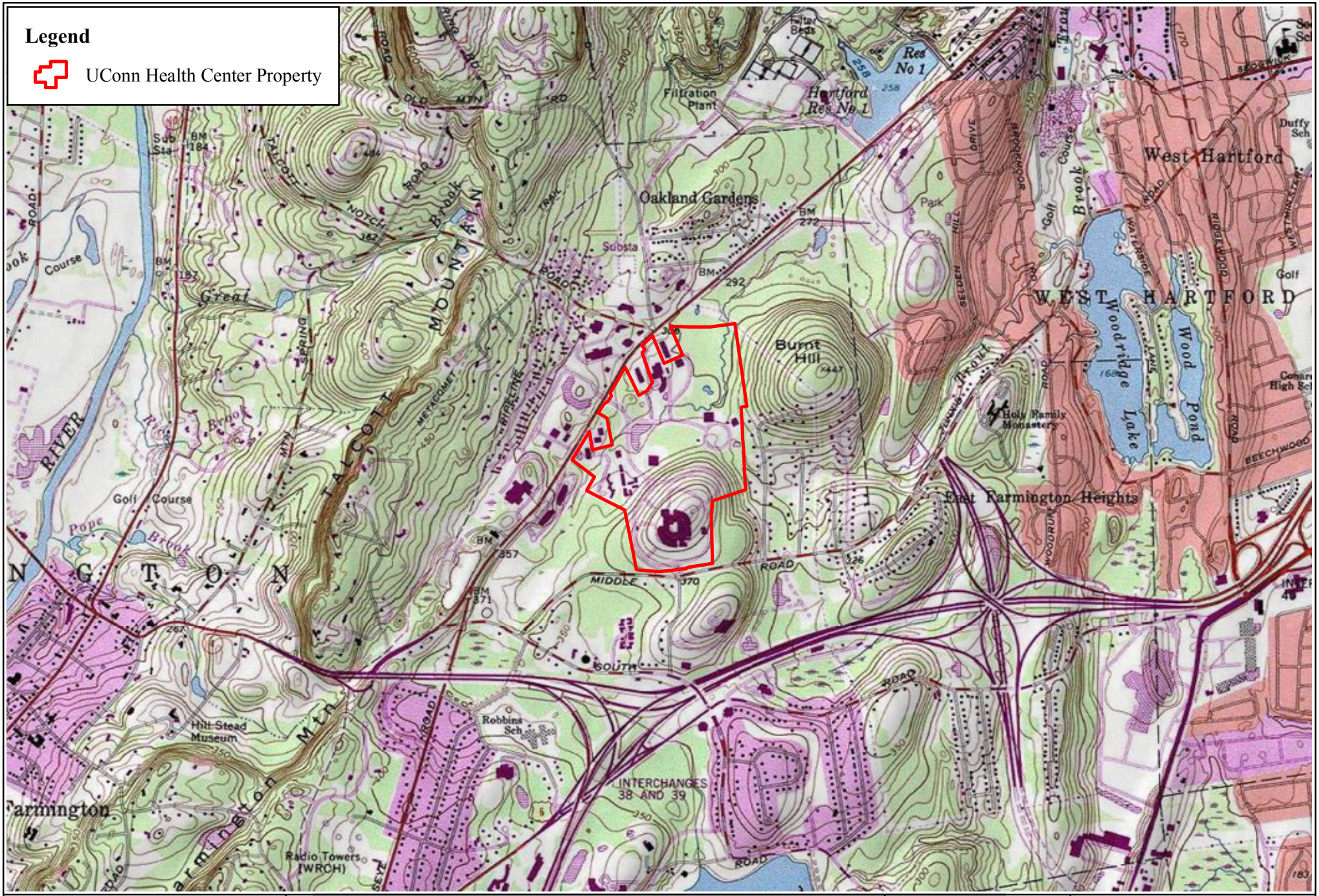
Figure 1-1: Location Map

University of Connecticut Health Center
Environmental Impact Evaluation

LOCATION:
Farmington, CT

Map By: SJB
MMI#: 1958-58
MXD: P:\Fig1-1Location.mxd
Date: September 7, 2011
Scale: 1 in = 60,000 ft

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM®
99 Realty Drive Cheshire, CT 06410
(203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com



SOURCE:
1997 USGS Topographic Map vis ESRI GIS service
Town of Farmington

N

Figure 1-2: Vicinity Map

University of Connecticut Health Center
Environmental Impact Evaluation

LOCATION:
Farmington, CT

Map By: SJB
MMI#: 1958-58
MXD: P:\Fig1-2Vicinity.mxd
Date: September 7, 2011
Scale: 1 in = 2,000 ft

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM®
99 Realty Drive Cheshire, CT 06410
(203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com

SOURCE(S):
2009 CRCOG Aerial Photograph
University of Connecticut Health Center

Figure 1-3: Existing Campus Map

LOCATION:
Farmington, CT

N

University of Connecticut Health Center Environmental Impact Evaluation

Map By: scottb
MMI#: 1958-58
MXD: H:\1958-58\GIS\Maps\Report\Fig1-3-Campus.mxd
1st Version: December 13, 2011
Revision: -
Scale: 1 inch = 500 feet

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM®
99 Realty Drive Cheshire, CT 06410
(203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com

The following construction projects are proposed to be undertaken on the UCHC campus: a new hospital bed tower, a new ambulatory care complex (ACC), a new systems genomics/ personalized medicine facility, renovations to the original research laboratory facility, three parking garages, additional surface parking, renovations and infrastructure improvements, and related site work. The new construction is integral to the implementation of *Bioscience Connecticut*, an initiative that was approved by the Connecticut General Assembly and signed into law by Governor Dannel P. Malloy in 2011.

The *Bioscience Connecticut* initiative strives to create research synergies between Storrs, Farmington, New Haven, and points in between. The initiative aims to jump start the state's economy by generating long-term, sustainable economic growth based on bioscience research, innovation, entrepreneurship, and commercialization. It is a multifaceted plan that aims to strengthen the state's position as a national and global center for bioscience innovation and improve access to quality healthcare for Connecticut's citizens while simultaneously securing the Health Center's future as a top-tier academic medical center. The plan doubles the amount of small business incubator space currently available across the entire university to foster new business start-ups. In addition, the plan is forecast to increase the medical and dental school enrollments by 30%. *Bioscience Connecticut* objectives include the following:

- Provide an estimated average of 3,000 construction jobs annually each year from 2012-2018 (according to the 2011 Study by the Connecticut Center for Economic Analysis, CCEA);
- Generate an expected $4.6 billion increase in personal income and generate 16,400 high-quality, permanent jobs by 2037 (CCEA, 2011);
- Double federal and industry research grants to drive discovery, innovation, and commercialization;
- Increase access to high-quality health care;
- Graduate and retain more physicians and dentists to meet forecasted workforce shortages and meet increased demand for health care services resulting from health care reform; and
- Strengthen and stabilize UCHC's finances.

Bioscience Connecticut will further position the Health Center as a top medical research and education institution and enhance patient care services for generations to come.

The subject Environmental Impact Evaluation (EIE) assesses the potential environmental impacts related to the proposed facility expansion.

1.2 DESCRIPTION OF PROPOSED ACTION

The following construction projects are proposed to be undertaken on the UCHC campus in Farmington, Connecticut:

New Hospital Tower – Construction of a new 12-story, ±400,000 square foot hospital tower to be located north of John Dempsey Hospital adjacent to the existing hospital tower. This is an area that has been previously developed and consists primarily of existing lawn and pavement. The new tower will include the following elements:

- Emergency, surgery and surgery support, and central sterile processing areas;
- Approximately 169 licensed patient beds in six nursing units, including:
  - ✓ A 28-bed Intensive Care Unit
  - ✓ A 29-bed Step Down Unit
  - ✓ A 28-bed Orthopedic Unit
  - ✓ A 28-bed Hematology / Oncology Unit
  - ✓ Two 28-bed Medical / Surgical Units

  This expansion will yield a total of 234 beds in the existing and new towers in addition to the existing 40 beds in the Connecticut Children's Medical Center neonatal intensive care unit, located in the existing tower.
- Inpatient rehabilitation, renal dialysis, and respiratory therapy areas; and
- A new lobby and entrance serving the John Dempsey Hospital.

The new tower will be constructed in accordance with the Leadership in Energy and Environmental Design (LEED) green building certification system requirements. The LEED certification system is an internationally recognized certification that demonstrates that a building or community was constructed to promote energy savings, resource efficiency and sensitivity to potential impacts, emissions reduction, and improved indoor environmental quality. The new tower will be designed to LEED Silver standards in compliance with State of Connecticut and university goals for new buildings.

New Parking Structures – Construction of a new visitor parking structure with an approximately 420-car capacity in the area of the existing I-lot and construction of a new staff parking structure with an approximately 400-car capacity to be located adjacent to the new hospital tower. These structures will replace displaced parking as well as support the increased staff and patient population. Each will occupy areas that are currently used for surface parking. These previously disturbed areas currently support little natural habitat or vegetation.

New Ambulatory Care Building and Associated Parking Structure – Construction of a new Ambulatory Care Complex (ACC) of approximately 300,000 square feet in two buildings to be located to the east of the existing Medical Arts and Research Building (MARB) on the lower campus. This complex will support personal health care consultation, treatment, and dental clinics. The majority of this space is currently a paved parking area. Associated parking will support approximately 1,250 cars with a combination of garage and surface parking. The project will be designed to LEED Silver standards.

New Systems Genomics/Personalized Medicine Facility – Construction of a new systems genomics/personalized medicine facility in place of the existing Lower Campus Research Complex. The new building will initially provide 170,000 to 200,000 square feet of research space with expansion capability to 250,000 square feet. Existing parking in the vicinity of the proposed facility will be replaced with 350 surface parking spaces, with expansion potential to approximately 500 spaces. The emphasis of the research laboratory will be genomics and personalized medicine, namely research into how people react differently to drugs based on their genetic makeup. The project will be designed to LEED Silver standards.

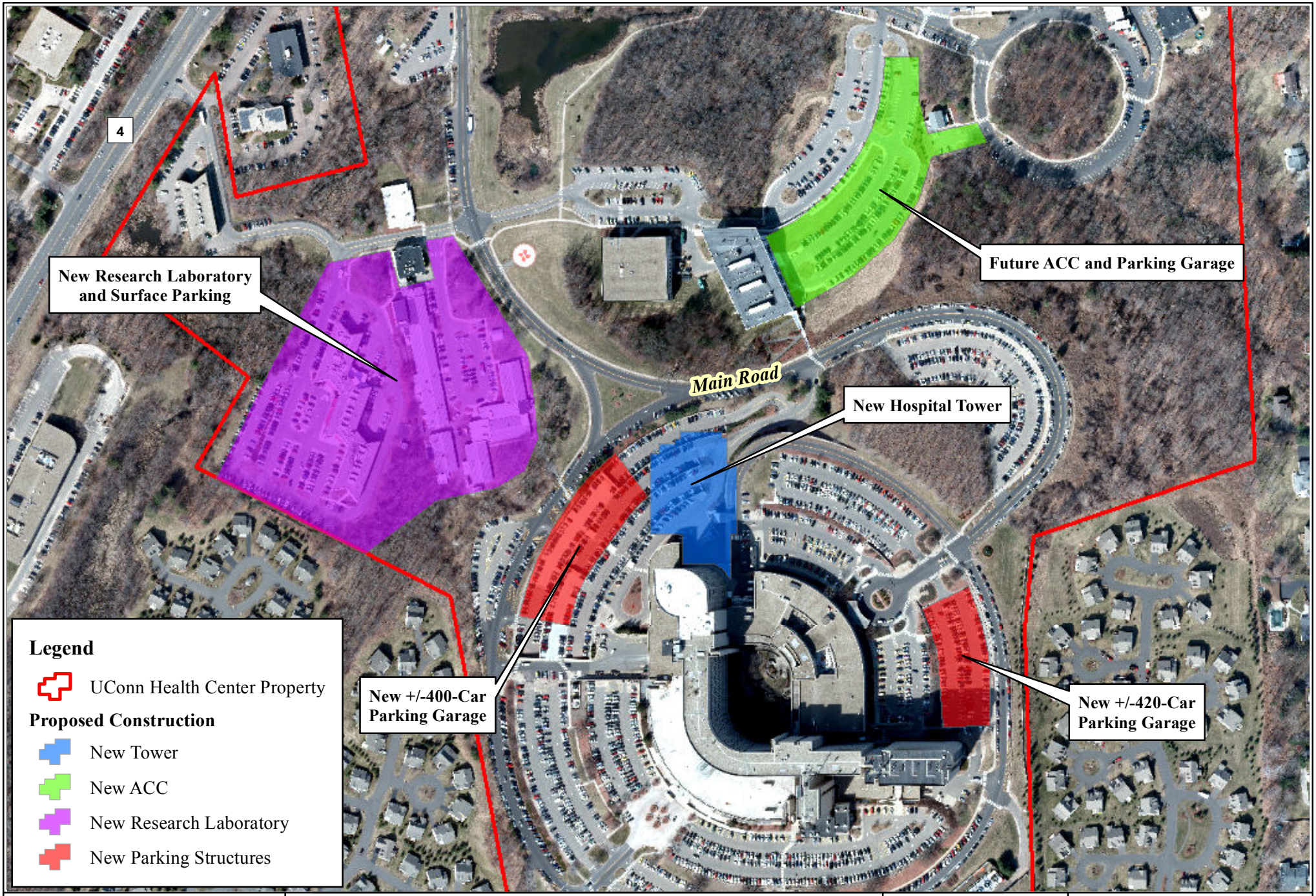
Renovation and Infrastructure Improvements – Renovation and infrastructure upgrades in several areas of the campus. Such activities include renovations to the Clinical "C" and John Dempsey Hospital "H" Buildings, improvements required for proper circulation and functioning of the new hospital tower, renovations to Building L (143,000 square feet in Phase 1 and 138,000 square feet in Phase 2) including 28,000 square feet of new incubator space), and subsequent enhancements to support the new overall site configuration. Approximately 230,000 square feet of renovations are proposed in order to expand the Cardiology Services, Clinical/Pathology Labs, Pharmacy, and Cancer Center programs. The renovation project will utilize sustainable design practices where possible.

A schematic layout of the above improvements is shown in Figure 1-4. This figure is intended to depict the general areas of proposed construction rather than detailed site and building layout. The shape, layout, and orientation of individual structures and parking areas will be refined during the design phase.

Project construction cost has been estimated as follows:

- New Hospital Tower and Upper Campus Parking Structures: $215 million
- John Dempsey Hospital Renovations: $53 million
- New Ambulatory Care Complex: $140 million*
- New Systems Genomics/Personalized Medicine Facility: $290 million*
- Building L Renovations – $143.8 million (both phases)

*Includes Private Financing



SOURCE:
2009 CRCOG Aerial Photo from CT ECO
University of Connecticut Health Center

N

Figure 1-4: Proposed Construction Areas

University of Connecticut Health Center
Environmental Impact Evaluation

LOCATION:
Farmington, CT

Map By: SJB
MMI#: 1958-58
MXD: P:\Fig1-4Proposed.mxd
Date: December 13, 2011
Scale: 1 in = 300 ft

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM®
99 Realty Drive Cheshire, CT 06410
(203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com

The anticipated design and construction schedule is presented in Table 1-1 based on currently available information.

TABLE 1-1
Anticipated Design and Construction Schedule

	2011		2012		2013		2014		2015		2016		2017		2018	
New Hospital Tower																
Design																
Construction																
New ACC and Parking Structure																
Design																
Construction																
Replacement Staff Parking Structure (At Existing Structure)																
Design																
Construction																
New Visitor Parking Structure Above Lot I																
Design																
Construction																
New Systems Genomics/Personalized Medicine Facility and Parking Structure																
Design																
Construction																
Hospital Renovations																
Design																
Construction																
Other Construction																
Utility Upgrades																

1.3 PROJECT PURPOSE AND NEED

In 2002, UCHC underwent a comprehensive master planning process that resulted in the November 2002 Master Plan. The Master Plan was prepared to guide the physical development on the Farmington campus specifically to meet the challenges of an emerging health care system and ensure the continued excellence of the research and educational components of its medical and dental schools. The guiding principles developed and presented in the Master Plan are as follows:

1. Protect and improve the campus environment;

2. Provide for improvements in patient care facilities;

3. Ensure the quality of educational programs and allow for their evolution;

4. Provide for increases for research activity;

5. Accommodate increases in ambulatory care; and

6. Foster efficient utilization of facilities.

The Master Plan projected future deficiencies as well as opportunities for improvements. The following needs and opportunities were identified:

- The Dowling buildings need replacement.
- A new research building is needed to accommodate projected levels of continued recruitment and research funding.
- The hospital needs additional private rooms to be on par with competitive models.
- Improvement of the quality of inpatient facilities can be achieved through reconfigurations and/or additions. In addition to more private rooms, increasing volumes of Emergency Department visits require increased space.
- Buildings 1 through 26 are approaching the end of their useful lives.
- Additional parking is needed to support further campus development.
- Improved student life will improve the competitiveness of the schools.

Recommendations of the 2002 Master Plan included the following:

- Plan to renovate and expand the UCHC campus with building use that corresponds to operational zones (i.e., health care, education, research, and support services).
- Develop additional ambulatory care capacity. Since the early 1980s, hospital care has trended toward providing more ambulatory care and outpatient services.
- Increase the number of private patient rooms.
- Upgrade educational, teaching, and research space and plan for future programmatic changes and enrollment, including renovation of the Lab Building (Building L) to modernize its mechanical and electrical systems and improve space utilization.
- Expand infrastructure, including parking, to support new construction and changes in use.

The purpose of the proposed facility expansion and renovation is to meet the guiding principles identified in the 2002 Master Plan and address the identified needs, deficiencies, and recommendations contained therein. Note the following:

- The proposed facility expansion and associated renovations will be centered around health care, education, research, and support services operational zones.

- The development of an ACC in the lower campus will provide better patient accessibility, ease parking demand at the upper campus, and relocate a percentage of workload volume in the hospital and clinics. This, in turn, will allow more resources for inpatient services and more flexibility for future research growth on campus.

- The proposed new hospital tower at John Dempsey Hospital will provide additional state-of-the-art hospital beds as well as additional facilities for emergency and inpatient services.

- Proposed academic and research expansion and facility renovations will secure UCHC as a top-tier academic medical center and draw in top students, educators, and researchers.

- The proposed parking garages and surface parking will provide better space utilization than surface parking, with a net increase of approximately 1,625 spaces in addition to those associated with the new systems genomics/personalized medicine facility.

1.4 THE CONNECTICUT ENVIRONMENTAL POLICY ACT (CEPA)

The format and content of the subject EIE are based upon the requirements of the Connecticut Environmental Policy Act (CEPA), Sections 22a-1 through 22a-1h of the Connecticut General Statutes (CGS), and Sections 22a-1 through 22a-1a-12 of the Regulations of Connecticut State Agencies (RCSA). State funds will be used for the design, construction, and renovation of the existing and proposed facilities, thus triggering the CEPA process. The sponsoring agency of this project is the UCHC.

CEPA recognizes the complex relationship between the natural environment and human actions. The CEPA regulations outline a process whereby, through coordination with local, regional, state, and federal governments as well as public and private entities, a sponsoring state agency can determine and minimize impacts to the resources of the state.

A major function of the CEPA process is the determination of whether or not a project will have a "significant effect." Significant effect means substantial adverse impact on the environment (RCSA 22a-1a-1, Definitions). Agencies preparing such CEPA documents must consider direct and indirect effects as well as cumulative impacts. Public input and participation are major components of the CEPA process. Therefore, early scoping and information exchange is essential.

Public participation in the CEPA process is encouraged through contact with interested persons and affected agencies. The overall process for public participation and approval of the EIE is summarized below.

- The sponsoring agency must notify state review agencies and other interested parties with regard to the proposed action via a Scoping Notice. Reviewers are given a

minimum of 30 calendar days to respond to the Scoping Notice with comments about the nature and extent of environmental impacts that might result.

- Upon the request by 25 or more people, the sponsoring agency must hold a public Scoping Meeting to further explain the proposed action.

- During the preparation of an EIE, the sponsoring agency must consider the issues and comments provided by the reviewers along with other information gathered.

- After the Draft EIE is prepared, the sponsoring agency must publish notice of its availability and circulate the draft for review and comment. Any interested parties may provide written comment within 45 days.

- Upon the request of 25 or more people, the sponsoring agency must hold a public hearing in accordance with state statutes and Section 22a-1a-11 of the regulations. A period of no less than 30 days following the date of availability of the Draft EIE must transpire before such public hearing is held.

- The sponsoring agency must review comments, perform any additional environmental study and analysis, and amend the evaluation as appropriate. It is the sponsoring agency's responsibility to respond to all substantive comments received. The agency then finalizes the EIE and prepares its Record of Decision.

- The sponsoring agency must forward its Record of Decision (ROD) and the EIE to the Office of Policy and Management (OPM) for a determination of the adequacy of the evaluation. The following information must be included: (1) public notice documentation; (2) a transcript of the public hearing if one is held; (3) comments received from all interested parties along with responses to the pertinent issues raised by the public and state agencies; (4) the agency decision relative to proceeding with the proposed action; and (5) intentions for initiating actions for reducing impacts.

- The CEPA process concludes with the review of the EIE and ROD by OPM and its determination of whether or not regulatory requirements have been satisfied. The Final EIE and ROD are the basis for the implementation of the project.

1.5 RELATIONSHIP TO OTHER PROJECTS AND PLANNING DOCUMENTS

A review of planned or in-progress projects near the Health Center was made, and these were taken into consideration as part of the impact analysis. Health Center leaders meet with officials from the Town of Farmington on a regular basis to discuss and fully vet ideas and developments. Two approved but yet to be built projects in the vicinity of the UCHC campus include the Farm Glen Office Park Expansion and the Village at Yorkshire development project.

Additionally, numerous local, state, and regional planning documents have been evaluated in the context of this EIE as listed below:

1. Town of Farmington, Connecticut, 2007, *Plan of Conservation and Development Update 2007*, http://www.farmington-ct.org/town_services/planning_and_economic_development/index.html

2. Office of Policy and Management Intergovernmental Division. *Conservation and Development Policies Plan for Connecticut 2005-2010*.

3. Town of Farmington, Connecticut, 2010, *Regulations for Zoning, Subdivision, Inland Wetlands* amended August 20, 2010, http://www.farmington-ct.org/plan_and_zoning Commission/index.html

4. Capitol Region Council of Governments. 2009. *Achieving the Balance: A Plan of Conservation and Development for the Capitol Region*. http://www.crcog.org/publications/community_dev.html

5. *Campus Sustainable Design Guidelines – University of Connecticut.* Prepared by JJR. November 2004.

6. University of Connecticut Health Center, 2002, *Campus Master Plan*, Flad & Associates, Frank Zilm & Associates, and Affiliated Engineers.

The relationship of this project to these planning documents is presented throughout this document.

2.0 ALTERNATIVES CONSIDERED

2.1 OVERVIEW

In accordance with CEPA requirements, alternatives have been analyzed for the UCHC Farmington campus, including a "no action" alternative and numerous action alternatives. Each has been evaluated based on its ability to meet the project purpose, need, and guiding principles presented in Section 1.0 of this document.

2.2 NO ACTION OR NO BUILD ALTERNATIVE

Under the No Action alternative, no new buildings or facilities would be constructed, and renovations to existing facilities would not occur. The Health Center would continue to operate with existing facilities and infrastructure.

The No Action alternative would result in no negative environmental consequences; however, it fails to meet the guiding principles identified in the 2002 Campus Master Plan that forms the foundation of this project. Similarly, the No Action alternative does not meet the project purpose and need and would hinder UCHC's ongoing commitment to provide outstanding medical facilities and promote the highest level of academic achievement. The No Action alternative would also limit the ability of UCHC to provide current technology to its patients and students as well as the ability to operate with energy-efficient teaching, clinical, and research facilities both now and in the future.

2.3 OFF-SITE ALTERNATIVES

Constructing new facilities at an off-site location was considered. This would require UCHC to acquire and/or control land of sufficient size and configuration to enable substantial development. Constructing the proposed facilities off site would require land areas that are on the order of 20 or more acres in size to accommodate the new structures and associated parking. Parceling out the proposed systems genomics/personalized medicine facility under full build-out conditions could require a buildable area of five or more acres, with greater total acreage to accommodate entrance drives, site setbacks, and grading, as well as allocation of no-build areas in and near wetlands, water features, and other environmentally sensitive areas. Note the following:

- There are no state-owned land holdings within one mile of UCHC that are of sufficient size to accommodate the new construction.

- Two vacant parcels of significant size are located within one mile of the Health Center in Farmington though neither are actively on the market and are not likely to become available in the foreseeable future. One belongs to the Hillstead Museum; the other is Batterson Park on the Farmington-New Britain municipal border. Additional undeveloped property is located in the Town of West Hartford, but this

land is also parkland or open space that is protected by the Metropolitan District Commission (MDC).

- The cost of land purchase of the magnitude needed would add significant cost to the project, potentially in the multimillion dollar range, not including the costs associated with development of driveways, intersection improvements, site clearing, and the like associated with development on currently undeveloped land.

- In addition to adding cost, purchasing a new property to support the proposed facilities would lengthen the time for design and construction due to the variety of assessments and legal and administrative processes that would be required for state purchase of private land.

- The new systems genomics/personalized medicine facility is a land use that is only typically allowed by special permit in certain zones (the Professional Office Zone and the Business Restricted Zone) in Farmington. A total of 10 parcels of greater than four acres in size within these zones are located within one mile of UCHC in Farmington. Each of these parcels is already developed; only one parcel (on Farmington Avenue immediately north of Quarry Road) appears to have any additional developable land, and most of the available land is comprised of wetlands.

Beyond obtaining sufficient developable land area, off-site construction of the proposed facilities has a number of significant drawbacks. Note the following:

- UCHC is an integrated academic medical center. Research informs education and clinical care. Most faculty members are involved in two of these three functions, and many are involved in all three. Close proximity of laboratories, patient beds, clinics, and classrooms is critical to the basic operation of the Health Center. Thus, locating the new facilities off campus, even in close proximity, runs counter to the basic operating requirements.

- Locating the proposed facilities at a different site would serve to bifurcate medical, educational, research, and economic development activities and operational functions. This would create inefficiencies due to redundancies in facility functions and infrastructure and would result in disjointed operations among the two campuses.

- The nexus of the existing UCHC campus with new facilities and functions is critical to an improved campus environment, improved patient care, research, and the quality of education at the medical and dental schools. Co-locating new incubator facilities will drive additional synergies and opportunities for innovation, entrepreneurship, and commercialization. New startup businesses locate in academic settings so they can be adjacent to the researchers and clinician scientists, collaborate on their inventions, and benefit from numerous university resources. An overriding policy objective of Public Act 11-52 is the job creation and economic expansion objectives associated

with expanded research, discovery, and commercialization. The synergy of these functions in one campus environment would be lost in a two-campus facility.

- Campus connectivity and pedestrian movement would be seriously compromised by a two-site facility and would result in additional off-site traffic for staff, visitors, and patients when traveling between the two campuses. Additionally, construction of off-site parking to serve on-site needs would detract from campus life and confuse wayfinding.

- The proximity of the new systems genomics/personalized medicine facility, while not a prerequisite for many Health Center functions such as Emergency Department operations, inpatient care, ambulatory care, and the like, is an important and complementary function for academic and research collaborations and sharing of knowledge, highly sophisticated and costly research equipment, and resources.

- The impact of placing new facilities on a currently undeveloped site would increase the required facility footprint since entranceways, driveways, and other site amenities would need to be constructed as compared to use of existing elements at the current UCHC campus. Beyond the cost associated with these site elements, greater impacts to currently undeveloped land would likely occur.

Separation of the existing UCHC campus from proposed hospital, ambulatory care, and expanded academic, research, and incubator facilities would fail to meet critical elements of the project purpose, need, and guiding principles. In addition, location of the proposed facilities off site may not be feasible considering the lack of developable land available in the immediate vicinity of UCHC. Given the project objectives, schedule, and overall cost, it is not viable to complete the project without the use of current state land holdings in one location and on one contiguous site. As a result, off-site options were not explored further.

2.4 NEW HOSPITAL TOWER ALTERNATIVES

2.4.1 SITE SELECTION CRITERIA

An in-depth investigation of site development options for the expansion on the existing UCHC upper campus was undertaken to select a strategic location for the new hospital tower. The goal is to provide an optimal solution that will achieve the objectives set forth in the guiding principles and result in favorable site layout relative to operational functionality, environmental impact, aesthetics, ease of construction, and cost.

Five separate site alternatives were analyzed for the new hospital tower and visitor parking facility. These alternatives were measured against specific site selection criteria as presented in the March 31, 2011 document entitled *New Construction and Renovation Project* prepared by HKS, Inc. and SBA Architects (HKS/SBA). Site selection criteria are as follows:

Constructability Cost/Value – Building site selection should strike a balance between long-term financial value of a particular site, initial construction cost, and operational impact during and after construction.

Connectivity – Significant departmental adjacencies and relationships permitting ease of access and access to care should be developed to promote clear multilevel hospital circulation patterns for disparate populations within the Health Center.

Parking Access – Parking must be accessible, convenient, and identifiable for visitors and staff while being evaluated based on current parking demand, phasing implications, and ability to address current site wayfinding issues.

Site Wayfinding – Site selection should enhance the development of clear and concise site circulation patterns that provide unambiguous identifiable access points to the Health Center.

Safety – Patient safety and pedestrian safety should be prioritized in the selection of building site and site circulation patterns during and after construction.

Image – The site selection should maximize opportunities to create a grand statement from multiple visual and physical access corridors surrounding the site.

Constructability Schedule Impact – The site selection should enhance rather than limit flexibility of potential options for project phasing in order to adhere to the established schedule.

Distinct Entry – Site selection should enhance the potential for creation of separate acute and ambulatory entries for the Health Center.

Future Flexibility – Building site selection should not restrict future site expansion and flexibility.

Existing Views – Site selection should maximize views and vistas from the UCHC campus.

External Green Space – Site selection should enhance the natural beauty of the campus by promoting development of gardens, courtyards, green roofs, and green space.

Environmental Impacts – Site selection should be analyzed for its impact on the development of environmental strategies in relation to the building design and the overall campus.

Campus Connectivity – Site selection should address the potential to create pedestrian access from the upper campus main building to the ACC in order to accommodate physician and staff circulation needs.

2.4.2 SITE CONSTRAINTS AND OPPORTUNITIES ANALYSIS

An initial analysis of general site constraints and opportunities was performed as a basis for understanding general campus and master planning issues. This assessment, conducted by HKS/SBA, included an assessment of regional connectivity, major circulation analysis, site utility analysis, significant site views, solar analysis, site zoning, topography, essential facilities, and potential site development options. A summary of the analysis follows.

Regional Connectivity – UCHC is located approximately 35 miles from the university's main campus in Storrs, Connecticut. The proposed New Britain-Hartford Busway, anticipated to be running as early as 2014, will have a spur and connection to UCHC, providing a transportation alternative to important teaching-affiliated hospitals in these urban communities. The UCHC campus is located on a prominent hilltop with expansive views of the downtown Hartford skyline. This location along the I-84 corridor and Farmington Avenue (State Route 4) offers vantage points from the surrounding community and promotes the Health Center as a modern iconic image.

Major Circulation Analysis – The UCHC campus is bordered by I-84 on the southeast and is situated prominently off Farmington Avenue to the west. Main Road is the main entry for the UCHC campus and ties directly into the loop road, which surrounds the upper campus. The loop, which consists of West Road, East Road, and Main Road, serves as the link through the campus from Farmington Avenue to Middle Road and Munson Road. Currently, Circle Road serves as the access for all emergency and service vehicles and is the primary access to the site for patients, visitors, staff, and academics. A secondary entry exists off Middle Road and serves as access to the academic and research side of the campus as well as access for staff from the east.

Site Utility Access – The campus is organized such that the majority of utilities are located along the loop, and Circle Road serves as an access for UCHC emergency response, daycare, and warehouse facilities and links the facility back to services on Farmington Avenue and Middle Road. This design allows for multiple access points for electrical, water, and sanitary services around the main UCHC facility and creates a system to allow for redundancy to service the hospital during construction. The locations of these primary utilities serve to inform the appropriate location of the new facility, with the intent of minimizing disturbance and cost.

Significant Site Views – The prominent hilltop on the site provides panoramic views of the surrounding scenic rolling hills and downtown Hartford. For four decades, the UCHC facility has been a prominent visual feature seen from I-84 and surrounding areas within Farmington.

Solar Analysis – A solar diagram was created to analyze the general solar orientation of the existing facility and to begin to understand the general site locations and how building orientation will affect the energy efficiency of future buildings and additions. Additionally,

the analysis identified areas susceptible to glare from the sun. The data concluded that there will be minimal sun impact on the north façade of buildings given the limited times of year and times of day when sun will reach the northern face. Additionally, with the altitude of the sun, glare is a source of concern for east-, south-, and west-facing windows.

Site Zoning – The overall campus master plan created zones of development that serve to inform future development. The main UCHC facility is bordered on two sides by residential development that continues to expand. Farmington Avenue serves as the commercial corridor, connecting West Hartford and Farmington. The campus is zoned into distinct ambulatory care, research, and hospital/clinic zones. Finally, the main UCHC facility is zoned with specific building components designed to link the tenants of academics, research, and clinical practice with the goal of promoting interdisciplinary learning. Due to the close proximity of the UCHC facility to the surrounding single-family residential communities, future development must be sensitive to the potential impacts associated with expansion.

Site Topography – The existing topography, while providing a prominent location for the facility, creates challenges for future expansion at the site. There is a significant grade change, between 90 and 100 feet, separating the existing lower campus from the hilltop. This creates challenges for pedestrian-friendly connections between the various campus zones.

Alternatives related to the new hospital tower on the upper campus are presented in the following sections.

2.4.3 NEW HOSPITAL TOWER ALTERNATIVE #1 – ABOVE DOCK

New Hospital Tower Alternative #1 would place the tower to the west of the existing John Dempsey Hospital (also known as Building H or H Tower) above the area currently used as the loading dock. Figure 2-1 presents a schematic of this alternative.

Under this alternative, the Emergency Department would be located below the tower in new construction, allowing for emergency traffic to be removed from the balance of site traffic circulation before reaching the upper campus and allowing the existing Emergency Department to remain operational during construction.

Advantages and disadvantages of this alternative in terms of the site selection criteria are summarized below. Advantages and neutral aspects are shown in normal font. Disadvantages are shown in bold.

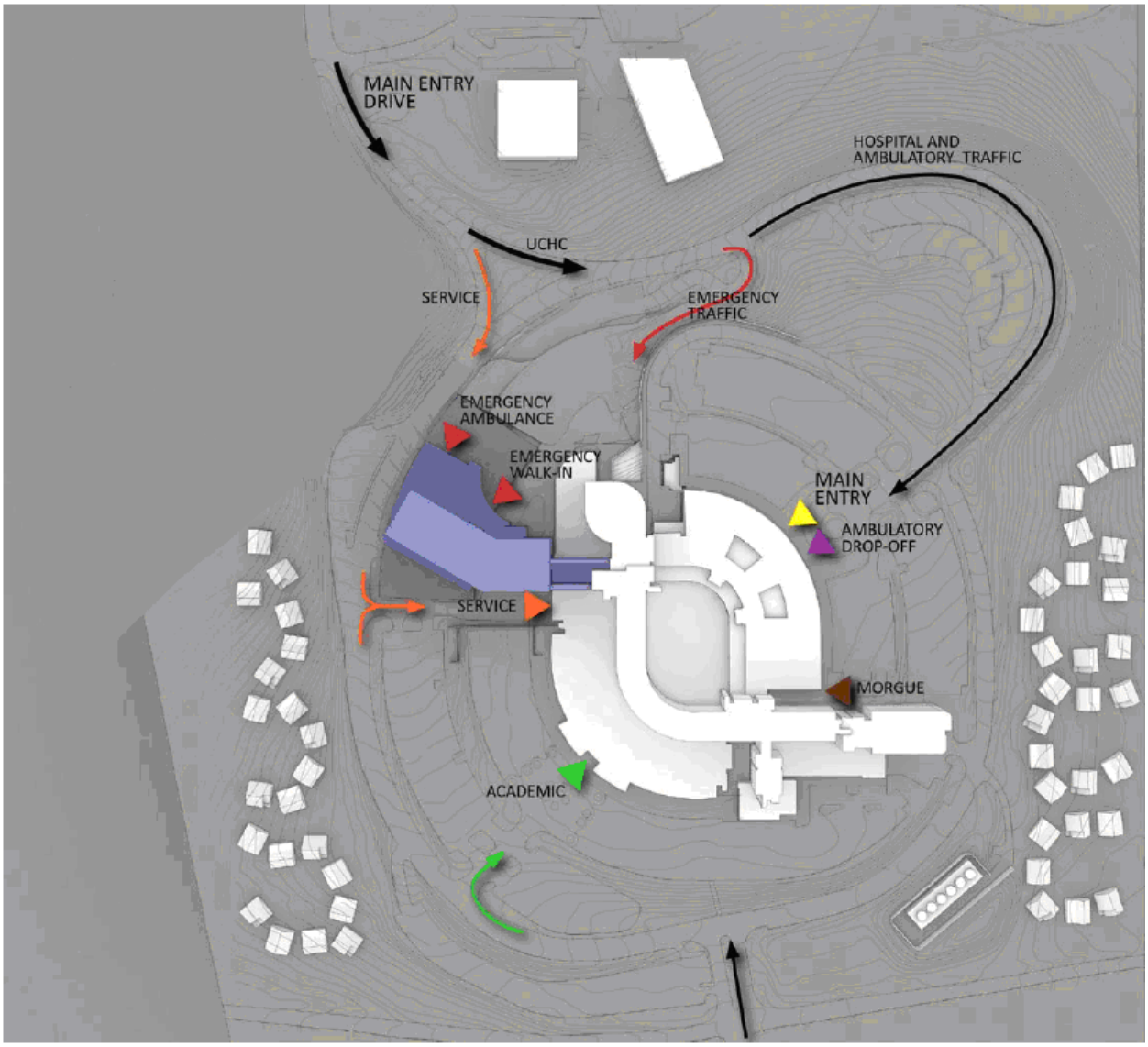
Constructability Cost/Value

- **High cost per space for parking garage spots beneath bed tower.**

Connectivity

- No significant advantages or disadvantages.

Figure 2-1
New Hospital Tower Alternative #1



Original image prepared by HKS, Inc. and SBA Architects

Parking Access

- Parking directly below tower.
- Discharge lobby possible in garage.

Site Wayfinding

- Separate emergency entrance.
- Direct link to existing elevator core.
- Overall simplification of traffic circulation patterns.
- Main entry would not change or be excessively distant from new bed tower.

Safety
- No significant advantages or disadvantages.

Image
- New tower clearly visible from Route 4 and Interstate 84.

Constructability – Schedule Impact
- Limits operational disturbance to Emergency and Surgery Departments.
- **Requires complicated construction above existing loading dock and service entry.**
- **Requires construction above cafeteria.**
- **Difficult phasing solution to accommodate service entry remaining operational during construction.**

Distinct Entry
- Distinct service, emergency, and main/ambulatory entries.
- **Main entry would be excessively distant from new bed tower.**

Future Flexibility
- No significant advantages or disadvantages.

Existing Views
- **Disturbs cafeteria views.**

External Green Space
- No significant advantages or disadvantages.

Environmental Impacts
- Preferred solar orientation.
- Construction located primarily on existing impervious areas.

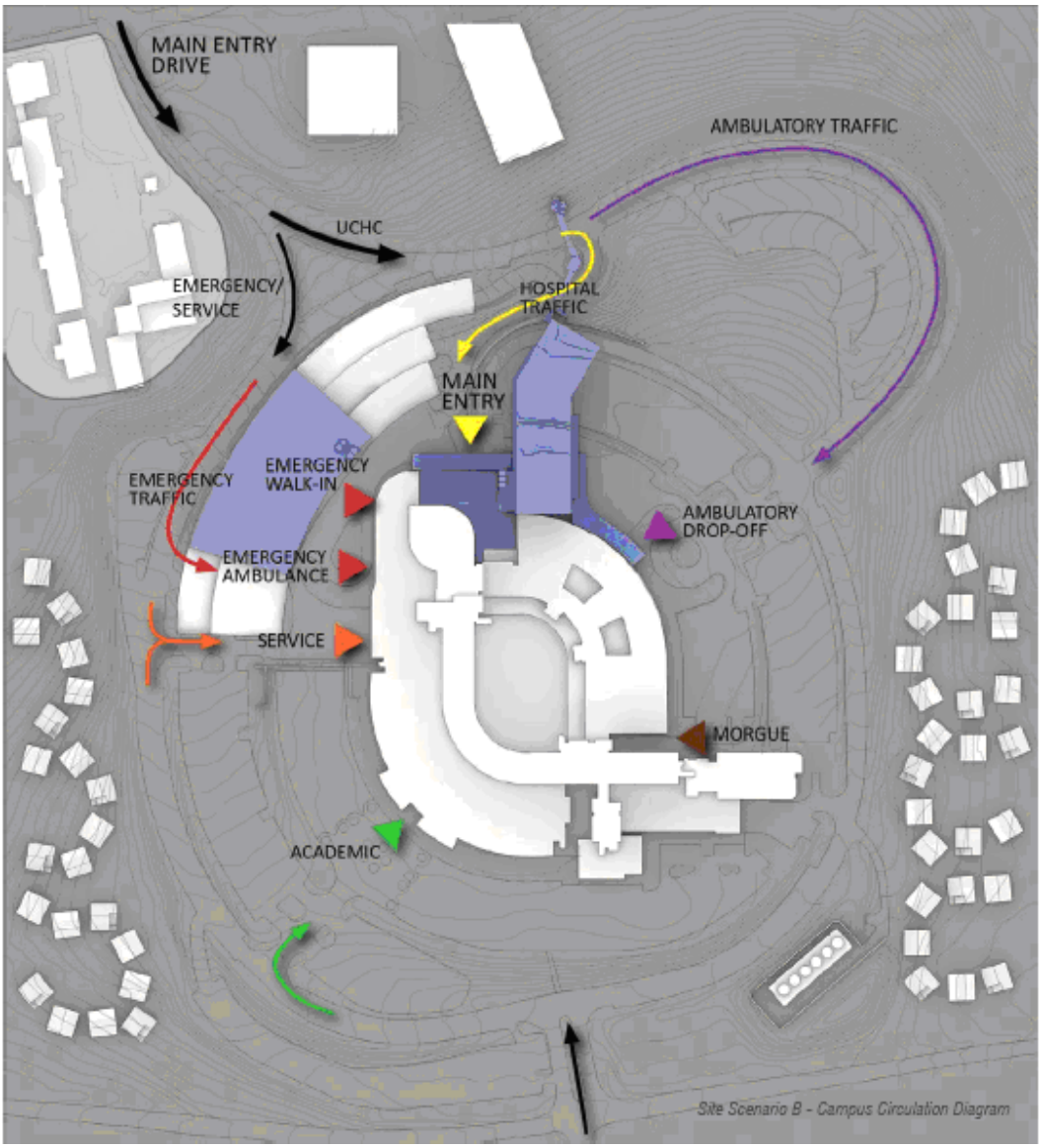
Campus Connectivity
- Potential pedestrian bridge to existing Lower Campus Research Complex.
- **Poor main hospital and ambulatory traffic patterns.**
- **Emergency traffic required to utilize a hairpin turn off Main Road.**

While this scenario simplifies the traffic circulation patterns and provides a good construction phasing scenario for the Emergency Department, the remoteness of the main entry from the new construction is considered to be an unconquerable obstacle. In addition, construction above the existing loading dock and service entry would be very complicated under this scenario.

2.4.4 NEW HOSPITAL TOWER ALTERNATIVE #2 – DETACHED OVER VISITOR PARKING

New Hospital Alternative #2 would place the new tower to the north of Building C above the western portions of Lots F and G. Figure 2-2 presents a schematic of this alternative.

Figure 2-2
New Hospital Tower Alternative #2



Original image prepared by HKS, Inc. and SBA Architects

Under this alternative, construction would include a new main entry in the vicinity of the existing Emergency Department, the ambulatory drop-off being relocated to the existing main entrance, and the Emergency Department entrance being relocated to the vicinity of the existing loading dock. Many of the Emergency Department functions would be relocated to the lower campus. Advantages and disadvantages of this alternative in terms of the site selection criteria are described below. Advantages and neutral aspects are shown in normal font. Disadvantages are shown in bold.

Constructability Cost/Value

- **Located above main electrical switch gear and transformer station for existing hospital, which would need to be replaced at significant cost.**

Connectivity

- Surgical department all on one level.
- Direct connection back to existing Clinic Building, Radiology Department, Dental Clinics, and Cardiology Department.
- **Emergency Department separated from Radiology Department.**
- **Limited connections back to existing tower.**

Parking Access

- Parking structure can be built independent of tower phasing.
- Can vertically expand existing parking structure.

Site Wayfinding

- Distinct discharge lobby; separation of ambulatory, emergency, service, and visitor traffic.
- **Main entry would be slightly hidden from Main Road.**

Safety

- **Traffic leaving main entry would need to make left turn onto Main Road.**

Image

- **New tower visible from Route 4 but not from Interstate 84.**

Constructability – Schedule Impact

- No impact to existing service entry.
- **Poor Surgery Department phasing (necessary to build new Surgery Department before being able to renovate the existing surgical department for the new Emergency Department).**
- **Construction would occur immediately next to the existing Emergency Department, creating difficult construction phasing.**
- **Multiple construction phases would be required.**

Distinct Entry

- Creates three separate and distinct entries to the hospital.
- New, distinct ambulatory entry near existing main entrance.

Future Flexibility

- No significant advantages or disadvantages.

Existing Views

- **Limits views from existing H tower to northeast.**

External Green Space

- No significant advantages or disadvantages.

Environmental Impacts

- Construction primarily on currently impervious areas.
- **Not preferred solar orientation.**

Campus Connectivity

- Potential pedestrian bridge connection to MARB.
- **Visitor traffic required to utilize a hairpin turn off Main Road.**

While this scenario provides excellent connectivity to the existing Clinic Building and distinct entries for hospital functions, the significant complications associated with the surgical and emergency phasing and the limited connections back to the existing tower are considered to be major disadvantages.

2.4.5 NEW HOSPITAL TOWER ALTERNATIVE #3 – IN FRONT OF EXISTING HOSPITAL

New Hospital Alternative #3 would place the new tower to the north of John Dempsey Hospital, with the tower trending west above the existing parking structure. This layout pushes the base of the tower down to provide a more prominent and visible entry. Figure 2-3 presents a schematic of this alternative.

Under this alternative, construction would include a new main entry and access road in the vicinity of the existing parking located off the hairpin turn. The ambulatory drop-off would be relocated to the existing main entrance, and the Emergency Department entrance would be near its existing entrance. New parking towers would be constructed in Lot D and Lot H. Advantages and disadvantages of this alternative in terms of the site selection criteria are described below. Advantages and neutral aspects are shown in normal font. Disadvantages are shown in bold.

Constructability Cost/Value

- Lower level mechanical floor can minimize costs.
- **Two separate parking towers increases project cost.**

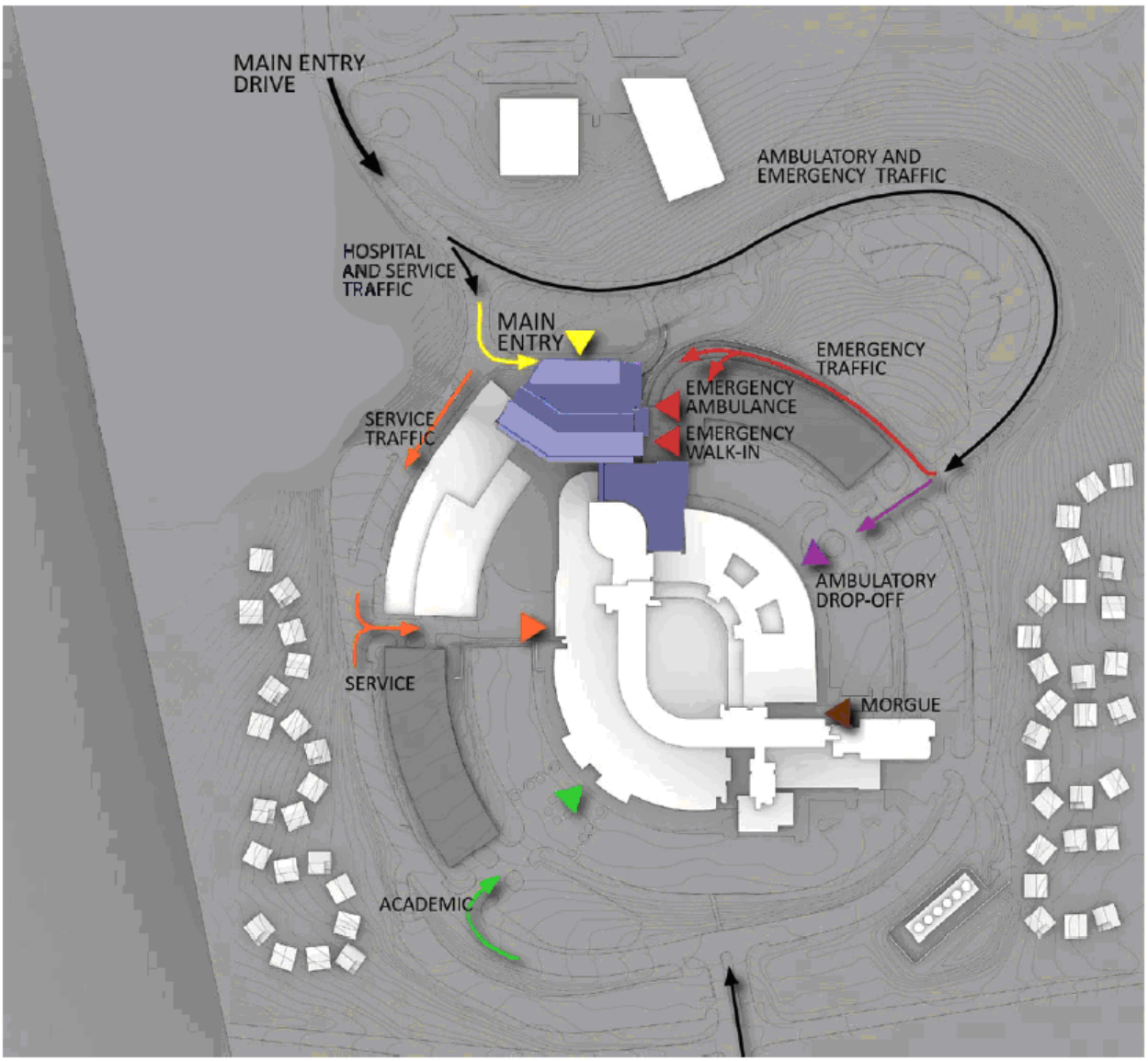
Connectivity

- Good Emergency Department and Radiology Department connectivity.
- **Limited connection back to existing Clinic Building.**

Parking Access

- **Parking separate and dispersed on campus.**
- **Existing parking structure confusing to visitors.**

Figure 2-3
New Hospital Tower Alternative #3



Original image prepared by HKS, Inc. and SBA Architects

Site Wayfinding

- Separation of ambulatory, emergency, service, and visitor traffic.
- Ambulatory and emergency traffic follow existing routes.
- **New main entry is so prominent that it could cause wayfinding issues for emergency traffic.**

Safety

- **Traffic leaving the main entry would need to make a left turn onto Main Road.**

Image
- Extremely prominent location allowing for a signature facility image.

Constructability – Schedule Impact
- Good Surgery and Emergency Department phasing.

Distinct Entry
- Three separate and distinct entries to the hospital.
- New, distinct ambulatory entry near existing main entrance.
- Prominent and distinct main entry.
- **New main entry considered to be too prominent (could cause wayfinding issues).**

Future Flexibility
- **Limited stacking and traffic flow options.**

Existing Views
- **Reduced tower height due to building at a lower level.**
- **Limits views from existing H tower to north and northwest.**

External Green Space
- No significant advantages or disadvantages.

Environmental Impacts
- Construction primarily on currently impervious areas.
- Preferred solar orientation.

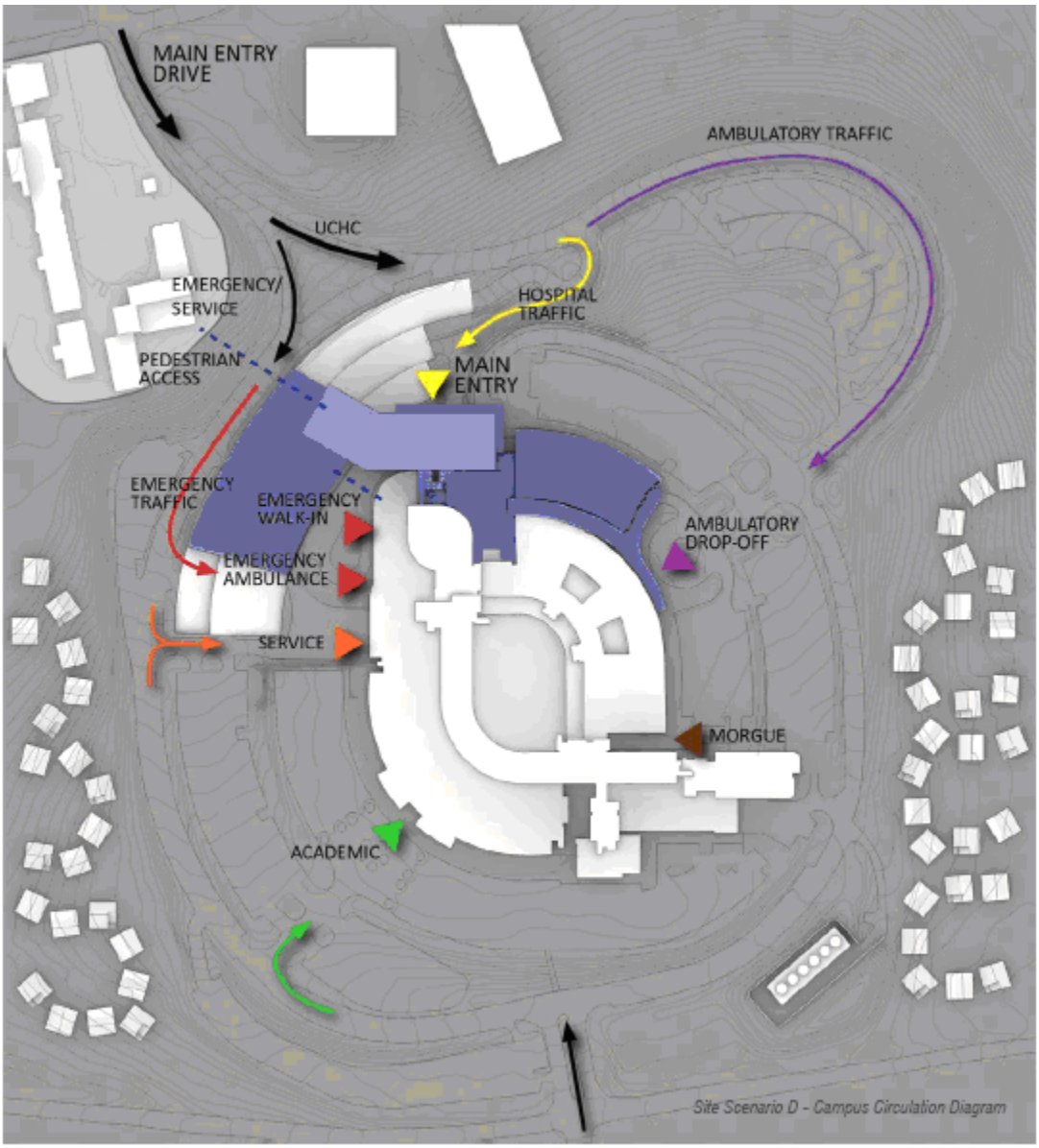
Campus Connectivity
- Near access points to lower campus.
- Potential pedestrian bridge to existing Lower Campus Research Complex.
- New improved access road to main hospital entrance.
- **No improvement in emergency and ambulatory traffic patterns.**
- **Parking access from main entry drop-off would need to return to main loop road before circulating to the parking structures, causing potential congestion.**

While this scenario provides prominent and distinct entries, the main entry on the lower level would be so prominent that it could lead to increased traffic congestion and confusion for emergency traffic. Other disadvantages of this alternative include limited connectivity to the Clinic Building, an inferior parking scheme, and difficult traffic patterns.

2.4.6 NEW HOSPITAL TOWER ALTERNATIVE #4 – OVER EXISTING DECK

New Hospital Tower Alternative #4 would place the new bed tower in a similar location to Alternative #3 but construct a separate building over existing Lot F (north of the Clinic Building) for clinical expansion. Figure 2-4 presents a schematic of this alternative.

Figure 2-4
New Hospital Tower Alternative #4



Original image prepared by HKS, Inc. and SBA Architects

Advantages and disadvantages of this alternative in terms of the site selection criteria are described below. Advantages and neutral aspects are shown in normal font. Disadvantages are shown in bold.

Constructability Cost/Value

- **High cost per space for parking garage below tower.**
- **New clinical addition located above electrical transformer and switch gear for hospital.**
- **Relocation would be expensive.**

Connectivity

- New distinct ambulatory entry and mall off existing Clinic Building.
- Surgical Department all on one level and adjacent to Intensive Care Unit.
- Good connectivity with existing Clinic Building and hospital tower.
- Allows expansion of dental clinics.
- Creation of comprehensive cardiology clinical floor adjacent to cardiac step-down in new tower.
- **Separation of Emergency and Radiology Departments.**

Parking Access

- Direct access to parking below bed tower.
- Parking structure access from main entry road and main loop road.
- Parking lot access to the main entry and Emergency Department entry.
- Enhanced number of spaces over existing parking structure.
- **Reduces available upper campus parking (loss of Lot F).**
- **Higher proportion of parking farther from outpatient uses in the Clinic Building.**

Site Wayfinding

- Distinct campus traffic patterns.
- Distinct hospital entry points.
- Development of ambulatory care zone on upper campus.
- **New main entry difficult to see from Main Road due to hairpin turn.**
- **Limited traffic capacity at this access point.**

Safety

- **Traffic leaving main entry would need to make a left turn onto Main Road or route through parking structure.**

Image

- Extremely prominent location allowing for a signature facility image.

Constructability – Schedule Impact

- Preferred phasing for Dental Clinic program to remain operational throughout construction.
- **Simultaneous construction at three locations on the upper campus would be very disruptive.**

Distinct Entry
- Three separate and distinct entries to the hospital.

Future Flexibility
- **Limits future upper campus parking options.**

Existing Views
- **Reduced tower height due to building at a lower level.**
- **Limits views from existing H tower to north and northwest.**

External Green Space
- No significant advantages or disadvantages.

Environmental Impacts
- Construction primarily on currently impervious areas.
- Preferred solar orientation.

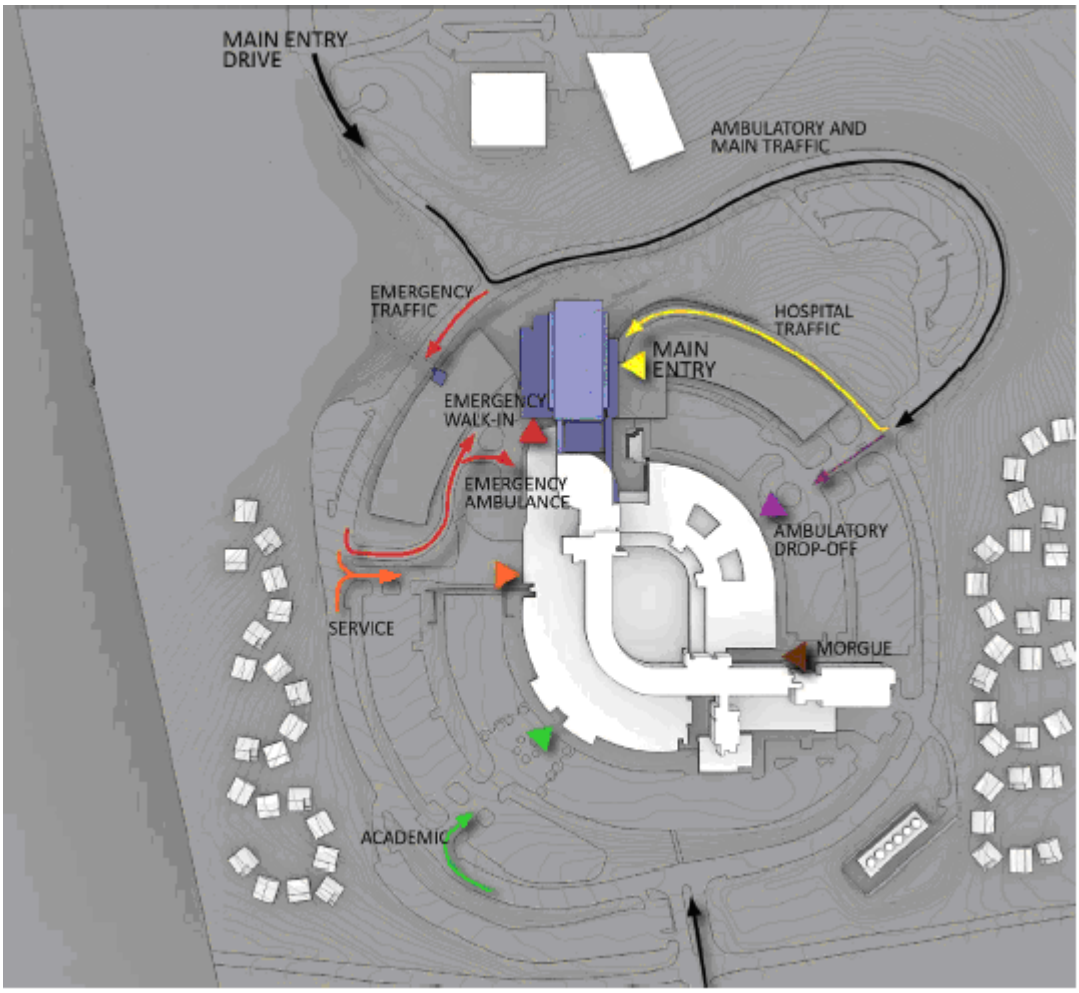
Campus Connectivity
- Very good campus connectivity.
- Potential pedestrian bridge to existing Lower Campus Research Complex.
- **Access to main entry via hairpin turn.**

While this scenario provides excellent connectivity to the existing tower and Clinic Building and provides for separate and distinct main entries, it has several serious disadvantages. The use of the existing hairpin turn to access the proposed main entry is a major impediment to preferred traffic flow patterns. In addition, the cost to relocate the main electrical transformer and switch gear would be prohibitively expensive. The loss of Lot F and expansion of the existing parking structure would also relocate a significant amount of parking away from the Clinic Building when there is a definitive need for additional outpatient parking. Finally, the need for simultaneous construction in three separate areas of the upper campus is a significant disadvantage.

2.4.7 NEW HOSPITAL TOWER ALTERNATIVE #5 – IN FRONT OF EXISTING EMERGENCY DEPARTMENT

The final new hospital tower alternative consists of construction of a new tower in the area immediately north of John Dempsey Hospital. The goal was to attempt to address the concerns raised under the previous scenarios regarding building stacking, site circulation, parking needs, and overall cost while providing three separate entries for the hospital, Emergency Department, and Ambulatory Care functions. Figure 2-5 presents a schematic of this alternative.

Figure 2-5
New Hospital Tower Alternative #5



Original image prepared by HKS, Inc. and SBA Architects

Under this alternative, the existing parking structure would be demolished and replaced with a new structure, with a potential pedestrian connection to the existing Lower Campus Research Complex and distinct entries for the hospital, emergency, and ambulatory care facilities. A second one-story parking structure would be built above Lot H to provide additional visitor and outpatient parking.

Advantages and disadvantages of this alternative in terms of the site selection criteria are described below. Advantages and neutral aspects are shown in normal font. Disadvantages are shown in bold.

Constructability Cost/Value

- **High cost of replacing existing structured parking.**

Connectivity

- Good connectivity to existing tower.
- Good juxtaposition of existing and expanded services.
- **Minimal direct connectivity to existing Clinic Building.**

Parking Access

- Separate parking available for various hospital uses.
- New parking structure to replace existing parking structure with better traffic circulation.
- Direct access to parking structure from Emergency Department drop-off.
- Direct access to new tower from parking structure and staff parking.

Site Wayfinding

- Distinct and separate Emergency Department traffic circulation pattern and entry.
- Separate main entry from ambulatory entry on same main level of hospital facility.

Safety

- Good traffic circulation through site.

Image

- Prominent location visible from main entrance off Route 4.
- **Main entry partially blocked by proposed one-story parking structure in Lot H.**

Constructability – Schedule Impact

- Good Surgery and Emergency Department phasing during construction and renovation.
- **Simultaneous construction at two locations on the upper campus would be disruptive.**

Distinct Entry

- Three separate and distinct entries to the hospital.

Future Flexibility

- Does not inhibit potential Clinic Building expansion.

Existing Views

- Minimal effect on views from existing tower.

External Green Space

- No significant advantages or disadvantages.

Environmental Impacts

- Construction primarily on currently impervious areas.
- **Not preferred solar orientation.**

Campus Connectivity

- Very good campus connectivity.
- Potential pedestrian bridge to existing Lower Campus Research Complex.

This scenario provides good departmental connectivity, excellent parking access, excellent site wayfinding, and promotes separate and distinct hospital entries. The high cost of replacing the existing parking structure, the limited direct access to the existing Clinic Building, and the need for simultaneous construction on multiple areas of the upper campus are the main drawbacks of this alternative. In addition, creation of a parking structure in Lot H could inhibit sight lines to the new main entry.

2.4.8 ENVIRONMENTAL REVIEW OF NEW HOSPITAL TOWER ALTERNATIVES

For all of the new hospital tower alternatives, new construction would be located almost entirely within existing developed, paved areas, thus a minimal to no increase in impervious surfaces would occur. Alternative #2 removes the open lawn area currently located to the west of Lot G and thus would cover a slightly greater amount of impervious surface. In all cases, existing tree-covered areas are preserved. Construction-related impacts would also be common to all of the alternatives evaluated. Site controls will minimize migration of debris and sediment into the existing stormwater system, thereby minimizing impacts to downstream wetland areas. A comparison of potential environmental impacts related to the new construction is included in the matrix in Section 2.4.9.

2.4.9 COMPARISON OF NEW HOSPITAL TOWER ALTERNATIVES

Table 2-1 presents an evaluation of site selection criteria for the on-site alternatives. Based on a review of all of the new hospital tower alternatives, Alternatives #4 and #5 best meet the project purpose, need, and site selection criteria. Relocation of the electrical transformer and main switch gear, removal of parking necessary in the Clinic Building and other areas of the upper campus, and the hairpin turn to the main entry associated with Alternative #4 are substantial. The associated cost differential does not justify selection of this alternative. Accordingly, Alternative #5 was selected as the preferred alternative.

To address the remaining concern of creating a one-level parking structure on Lot H and the visibility of the main entrance, further evaluation of a preferred parking scenario on the upper campus was explored (as outlined in Section 2.5). This preferred parking scenario addresses the need for additional parking at the Clinic Building.

TABLE 2-1
Evaluation Matrix of New Hospital Tower Alternatives

Alternative	Alternative #1	Alternative #2	Alternative #3	Alternative #4	Alternative #5
Required Evaluation Criteria					
Constructability – Cost / Value	Good	Fair	Excellent	Fair	Excellent
Department Connectivity	Good	Good	Very Good	Excellent	Very Good
Parking Access	Excellent	Fair	Excellent	Excellent	Fair
Site Wayfinding	Good	Very Good	Fair	Excellent	Excellent
Safety	Excellent	Excellent	Very Good	Excellent	Excellent
Additional Validation Criteria					
Image	Very Good	Very Good	Excellent	Excellent	Very Good
Constructability – Schedule Impact	Very Good	Fair	Excellent	Very Good	Excellent
Distinct Entry	Poor	Fair	Good	Excellent	Excellent
Future Flexibility	Very Good	Good	Excellent	Excellent	Excellent
Existing Views	Fair	Excellent	Very Good	Very Good	Excellent
External Green Space	Fair	Very Good	Very Good	Very Good	Very Good
Environmental Impacts	Excellent	Fair	Excellent	Excellent	Very Good
Campus Connectivity	Fair	Poor	Excellent	Excellent	Excellent

From matrix originally prepared by HKS, Inc. and SBA Architects

2.5 ALTERNATIVES FOR NEW FACULTY PARKING GARAGE

The 2002 Master Plan identified a need for additional parking on the upper campus to support both new construction and current uses. As discussed in Section 2.4.9, the proposal for Alternative #5 included a one-level parking garage structure to be included in Lot H. This structure would assist with an immediate and future need for parking in the existing Clinic Building. Following the evaluation of alternatives for the new hospital tower, a parking analysis was performed to determine the best alternative for providing necessary parking to the upper campus. Two such alternatives are described below.

2.5.1 UPPER CAMPUS PARKING ALTERNATIVE #1 – NEW STRUCTURE AND VALET PARKING

Under the first alternative, the existing parking structure to the west of the proposed hospital tower would be replaced with a new 400-car capacity parking garage. A new access drive and ramp would be constructed to support Emergency Department patient admissions. Valet parking would be required to accommodate the parking need at the main entry. Lot L would become the valet parking lot to support up to 300 cars. The shortage of staff parking would be met through the use of Shuttle Lot #3 or the top levels of a new garage associated with the ACC development.

This alternative results in a complex and undesirable operating scheme. Routing the Emergency Department drop-offs around and through the new parking garage could cause issues with site wayfinding. The need for proximal staff parking is also poorly addressed under this alternative. In addition, requiring valet parking for visitors may

have the potential to cause unnecessary emotional stress to visitors. These issues are all inconsistent with the project-specific guiding principles.

2.5.2 UPPER CAMPUS PARKING ALTERNATIVE #2 – TWO NEW PARKING STRUCTURES

This alternative includes replacing the existing parking structure to the west of the proposed hospital tower with a new parking garage totaling approximately 400 spaces, 50 of which would be used for patient/Emergency Department admissions and the remainder allocated for staff. A new access drive and ramp would be constructed between the parking garage and the existing tower (Building H) to support Emergency Department patient admissions. A second new parking garage would be constructed above Lot I to provide parking for 420 cars (a net addition of 280 cars above the existing 140 parking spaces) to be used for outpatient and visitor needs.

This alternative has the advantage of increasing the amount of available parking at the upper campus while not restricting visibility of the new hospital tower. Additional staff parking is made available although staff overflows would still need to utilize shuttle lots or other UCHC parking facilities. Additional parking may be needed on the upper campus beyond the year 2020.

2.5.3 PREFERRED UPPER CAMPUS PARKING ALTERNATIVE

Based on the two parking alternatives evaluated, construction of a new 400-car staff parking garage and construction of a 420-car visitor garage (net increase of 280 cars) at Lot I comprise the preferred upper campus parking alternative as this arrangement best meets the needs of the project.

2.6 ALTERNATIVES FOR AMBULATORY CARE COMPLEX

A new ACC has been proposed in two previous master plan studies in 2002 and 2010. The 2011 report entitled *New Construction and Renovation Project*, HKS/SBA utilized a subset of the evaluation criteria used to site the new hospital tower to evaluate the site of a new ACC on the lower campus. Based on a review of the facilities that would need to move into the new ACC, a facility with approximately 300,000 square feet of floor space is proposed (in one or two buildings), with associated parking for approximately 1,250 cars with a combination of garage and surface parking.

A number of locations on the lower campus were evaluated for a new ambulatory care complex. Areas that were considered too small to support a new building and parking garage, that needed major construction in natural wooded or wetland areas, or that were located far from the upper campus were not considered in any detail. A total of four site alternatives are presented in the following sections.

2.6.1 ACC ALTERNATIVE #1 – LOWER CAMPUS RESEARCH COMPLEX

ACC Alternative #1 considers construction of the complex in the vicinity of the existing laboratories and pharmacology buildings that comprise the Lower Campus Research Complex. Buildings 1, 2, 3, 4, 5, 6, 7, 10, 14, 16, 26, and 27 totaling over 57,000 square feet of floor space would be demolished to make room for the new complex. The location of this alternative is schematically depicted in Figure 2-6.

This site has the advantage of being located just off Main Road and close to the upper campus but distinctly separate such that ambulatory and outpatient traffic would not circulate with hospital traffic at the upper campus. The existing buildings to be demolished are out-of-date and have been identified as exceeding their useful life. The proximity of the upper campus could be improved via the construction of a pedestrian bridge over West Road between the proposed parking garage and the new parking structure on the upper campus. In addition, this area is already serviced by utilities. This alternative has the option of expanding westward into the area currently occupied by the Dowling South building if or when additional expansion is necessary. Finally, enough space is available such that good construction phasing could be designed with minimal impact to existing research.

Parking that is lost in the vicinity of the new buildings would be replaced by the proposed parking garage and surface parking. This alternative could increase impervious surfaces at the site and involves clearing and excavation into the wooded hillside south of Building 2. Wetland areas located southwest of Building 4 could also be affected. This alternative has a significant pedestrian burden (unless a pedestrian bridge were constructed) due to the greater than 100-foot difference in elevation between the upper and lower campus. If this alternative were constructed with a single building, the site could support a four-story ACC building and a three- or four-story parking garage in an area where the current maximum building height is three stories (i.e., the Dowling South building). However, given the proximity of the hospital towers on the upper campus, the additional story is not likely to have a significant impact on overall aesthetics at the site.

Figure 2-6
ACC Alternative #1 – Lower Campus Research Complex Area

2.6.2 ACC ALTERNATIVE #2 – VICINITY OF DOWLING SOUTH BUILDING

ACC Alternative #2 considers the construction of the complex in the vicinity of the existing Dowling South building. The location of this alternative is schematically depicted in Figure 2-7.

Figure 2-7
ACC Alternative #2 – Existing Dowling South Area

Under this alternative, the Dowling South building would be demolished to make room for the new ACC structures. This site is located slightly further off the Main Road as compared to Alternative #1, farther from the upper campus but still distinctly separate such that ambulatory and outpatient traffic would not circulate with hospital traffic at the upper campus. The Dowling South building is considered to be aging, and previous *Master Plan* documents have recommended relocating the existing functions currently housed within it to a new facility. This portion of the campus has a large parking area that would be replaced by the proposed parking garage.

The area of ACC Alternative #2 has the potential for expansion eastward into the area currently occupied by the Lower Campus Research Complex. Construction at this location would likely result in little to no minimal increase in impervious surfaces, and utilities already service the area.

Construction of the ACC facility in the vicinity of the Dowling South building has several challenges. First, a portion of the parking area is located in an unnumbered Zone A (100-year) Special Flood Hazard Area, which could complicate site permitting as well as building access during high flows. Second, wetland areas are located immediately west and southeast of the area that could potentially be impacted by construction activities. Third, parking would be lost during construction, which would need to be replicated in more distant shuttle lots during the construction period. The proposed building height is one story higher than the existing Dowling South building, which could have a minor impact on aesthetics when looking from Route 4.

There is a significant pedestrian burden associated with this alternative due to the greater than 100-foot difference in elevation between the upper and lower campus, with no direct pedestrian connection opportunity. The Dowling South building would need to be demolished prior to construction of a new building. This would cause the existing outpatient facilities in the Dowling South building to be unavailable during construction, and such facilities would be difficult to relocate to other buildings even temporarily.

2.6.3 ACC ALTERNATIVE #3 – VICINITY OF LOT L

ACC Alternative #3 considers construction of the complex in the vicinity of Lot L, located on Main Road to the northeast of the upper campus. The location of this alternative is schematically depicted in Figure 2-8. The area has sufficient space to support buildings and parking for 1,250 cars through a mix of garage and surface parking.

This site is located on Main Road relatively close to the upper campus. The existing large parking area would be replaced. There are no existing buildings in this area that would require demolition, and no known adjacent wetland areas on the wooded hillside southwest of the parking lot. The site is also located approximately 20 to 40 feet below the grade of the existing Clinic Building, presenting less of a pedestrian burden than other alternatives.

Construction of one or more new buildings and associated parking would encroach into the wooded hillside to the southwest, thereby increasing the amount of impervious surfaces at the site. No water or sewer lines are located in the vicinity of Lot L; therefore, project costs would need to include extension of these utilities. Existing storm drainage would need to be rerouted as well. This area would require outpatient traffic to circulate on Main Road along with the ambulatory and visitor traffic going to the upper campus. This would present a difficult left-hand turn to reenter Main Road.

Lot L occupies an area that is overshadowed vertically by the existing hospital on the upper campus but is higher in elevation than the MARB and Administrative Services Building to the northwest. The creation of a four-story building and a three- to four-story parking garage at this location would significantly change the aesthetics of the upper campus, and the associated buildings would be highly visible to the subdivision located immediately to the southeast.

Figure 2-8
ACC Alternative #3 – Vicinity of Lot L

2.6.4 ACC ALTERNATIVE #4 – VICINITY OF LOT N NEAR MARB

This alternative considers construction of the ACC in the upper section of Lot N adjacent to the existing Farmington Surgery Center (FSC) and MARB. The location of this alternative is depicted in Figure 2-9. The facility would be constructed near the southern hillside leading south up to Main Road, providing the potential for pedestrian access from Lot L (similar to the existing walkway from the FSC).

Figure 2-9
ACC Alternative #4 – Vicinity of Lot N Near MARB

Under this alternative, a connecting link could be constructed between the new building (or buildings) and the MARB to the west. Part of this building would be constructed adjacent to the southern hillside leading south up to Main Road, providing the potential for pedestrian access from Lot L (similar to the existing walkway from the FSC). The parking garage could be accommodated in the northeastern portion of upper Lot L, with the potential for a connection to the terminus of Circle Road through the existing Green Building parking area.

The area around Lot N has sufficient space to support the proposed ACC and associated parking. Utilities that currently serve the FSC could be extended to the new ACC and associated parking structure/surface parking. Existing storm drainage would be removed and rerouted. There are small wetland pockets southeast of the Green Building and

wetlands in the wooded areas to the south of Circle Road that could be impacted by this alternative.

2.6.5 ENVIRONMENTAL REVIEW OF ACC ALTERNATIVES

For all of the ACC alternatives, new construction would be primarily located in existing developed areas. Alternatives #2 and #4 do not require construction into a wooded hillside. While all sites may have wetlands nearby, none are located near substantial wetland areas. The preliminary layouts for the ACC presented in this EIE do not represent final designs. Potential wetland impacts will be minimized during the detailed design process.

2.6.6 COMPARISON OF ACC ALTERNATIVES

Any of the sites evaluated could potentially accommodate the ACC facility, and none present insurmountable issues. However, Alternative #4 appears to best meet the aggregate site selection criteria for the ACC complex, followed closely by Alternative #1. In particular, Alternative #4 is desirable in terms of constructability both for cost/value and for schedule impact (particularly in regard to replacing existing services in the Dowling South building that is slated for eventual demolition) and its proximity to existing outpatient services in the MARB.

2.7 NEW SYSTEMS GENOMICS/PERSONALIZED MEDICINE FACILITY ALTERNATIVES

In October 2011, a new systems genomics/personalized medicine facility at the UCHC campus was approved by the General Assembly as a follow on to the *Bioscience Connecticut* initiative. The facility could span five floors with an initial development of 170,000 to 200,000 square feet of floor space for research activities, with expansion capability up to 250,000 square feet. Associated parking would be on the order of 350 cars in surface parking. Potential nearby off-site locations for this building were considered in Section 2.3. As no suitable state-owned sites were found in the vicinity of the UCHC property, the focus of this EIE shifted to evaluating potential locations for the new systems genomics/personalized medicine facility on the lower campus.

Each of the ACC alternative locations was revisited in light of a new systems genomics/ personalized medicine facility. The proposed ACC requires approximately 300,000 square feet of floor space and parking for 1,250 cars. The new systems genomics/ personalized medicine facility needs are slightly less even at full buildout (up to 250,000 square feet of total overall floor space could be built at maturity, requiring an additional 150 parking spaces or 500 total) and significantly less at the outset (170,000 to 200,000 square feet and parking for 350 cars). The need for patient connectivity is eliminated with the systems genomics/personalized medicine facility, but most other site considerations are similar.

Alternative #4 near the existing MARB facility was selected for the ACC facilities. While other sites could potentially support the new systems genomics/personalized medicine facility, a combination of Alternative #1 at the Lower Campus Research Complex area and Alternative #2 near the Dowling South building and parking area best meets the site needs for the contemplated research complex, with expansion potential near the Dowling North building (which is slated for eventual replacement) in the future if such expansion is realized. In addition, construction of the new building at this location replaces the outdated research buildings currently located at this site.

2.8 SELECTION OF AGGREGATE PROJECT ALTERNATIVE

Selection of the aggregate project alternative included a several-tiered decision matrix. First, the no action alternative and a general comparison of off-site and on-site building alternatives for each project item were considered in Sections 2.2 and 2.3. Next, on-site alternatives were considered for the new hospital tower (Section 2.4), new upper campus parking garages (Section 2.5), new ACC (Section 2.6), and new systems genomics/ personalized medicine facility (Section 2.7). Refer back to Figure 1-4 for an overview of the aggregate project alternative. A further comparison of the aggregate project alternative as related to the project guiding principles is shown in Table 2-2. The aggregate project alternative meets the goals and intents of the project-specific guiding principles outlined for this project.

TABLE 2-2
Comparison of On-Site Alternatives to Guiding Principles

Criteria	Hospital Tower	Upper Campus Parking	ACC Complex	Systems Genomics Facility
Protects/Improves Campus Environment?	Yes	Yes	Yes	Yes
Provides Improved Patient Care Facilities?	Yes	Yes	Yes	N/A
Ensures Quality of Educational Programs?	Yes	Yes	Yes	Yes
Provides for Increased Research Activity?	Yes	Yes	N/A	Yes
Accommodates Increases in Ambulatory Care?	N/A	N/A	Yes	N/A
Fosters Efficient Utilization of Facilities?	Yes	Yes	Yes	Yes

There are several notable benefits to this aggregate project alternative as follows:

- The aggregate project layout provides excellent constructability in terms of cost/value and schedule impact.
- Site wayfinding is enhanced as outpatient facilities are grouped on the northeastern side of the hospital.
- The configuration of facilities provides for pedestrian connections to both lower campus facilities.

- The locations of the lower campus sites leave open the possibility for future expansion.

- Location of facilities on predominantly developed and paved surfaces minimizes environmental impacts and provides the flexibility to design around areas of environmental sensitivity such as wetland areas.

3.0 EXISTING ENVIRONMENT AND ANALYSIS OF IMPACT

3.1 LAND USE AND ZONING

An understanding of land use plans and policies at the local, regional, and state levels is essential to the analysis of potential alterations of land uses in the project area. The following discussion sets the framework of land use policies that apply to the project area. Consistency of the proposed action with these plans, policies, statutes, and regulations is evaluated in the ensuing text.

3.1.1 STATEWIDE LAND USE CONSERVATION AND DEVELOPMENT

The following discussion presents portions of the *Conservation and Development Policies Plan for Connecticut* (*2005-2010*)[1] as they relate to the proposed facility expansion. Italicized sections are direct excerpts from the plan. Not all plan policies are included in this discussion as they may not directly apply. For an expanded review of the plan, the reader is directed to the full document on file with the Connecticut OPM.

The *Conservation and Development Policies Plan for Connecticut* (*2005-2010*) is a statement of the state's growth, resource management, and public investment policies. The plan provides a policy and planning framework for the administrative and programmatic actions and capital and operational investment decisions of state government, which in turn influence the future growth and development of Connecticut.

The Connecticut General Assembly, in accordance with Sections 16a-24 through 16a-33 of the Connecticut General Statutes, establishes the plan. The policies of the plan are intended to guide the planning and decision-making process of state government relative to: (1) addressing human resource needs and development; (2) balancing economic growth with environmental protection and resource conservation concerns; and (3) coordinating the functional planning activities of state agencies so as to accomplish long-term effectiveness and economies in the expenditure of public funds.

The plan embodies six statewide growth management principles as follows:

1. *Redevelop and revitalize regional centers and areas with existing or currently planned physical infrastructure.*

2. *Expand housing opportunities and design choices to accommodate a variety of household types and needs.*

3. *Concentrate development around transportation nodes and along major transportation corridors to support the viability of transportation options.*

[1] The next update of the *Conservation and Development Policies Plan for Connecticut* is proposed for 2013 and is currently in development. No draft version was available at the time of this writing.

4. *Conserve and restore the natural environment, cultural and historical resources, and traditional rural lands.*

5. *Protect and ensure the integrity of environmental assets critical to the public health and safety.*

6. *Promote integrated planning across all levels of government to address issues on a statewide, regional, and local basis.*

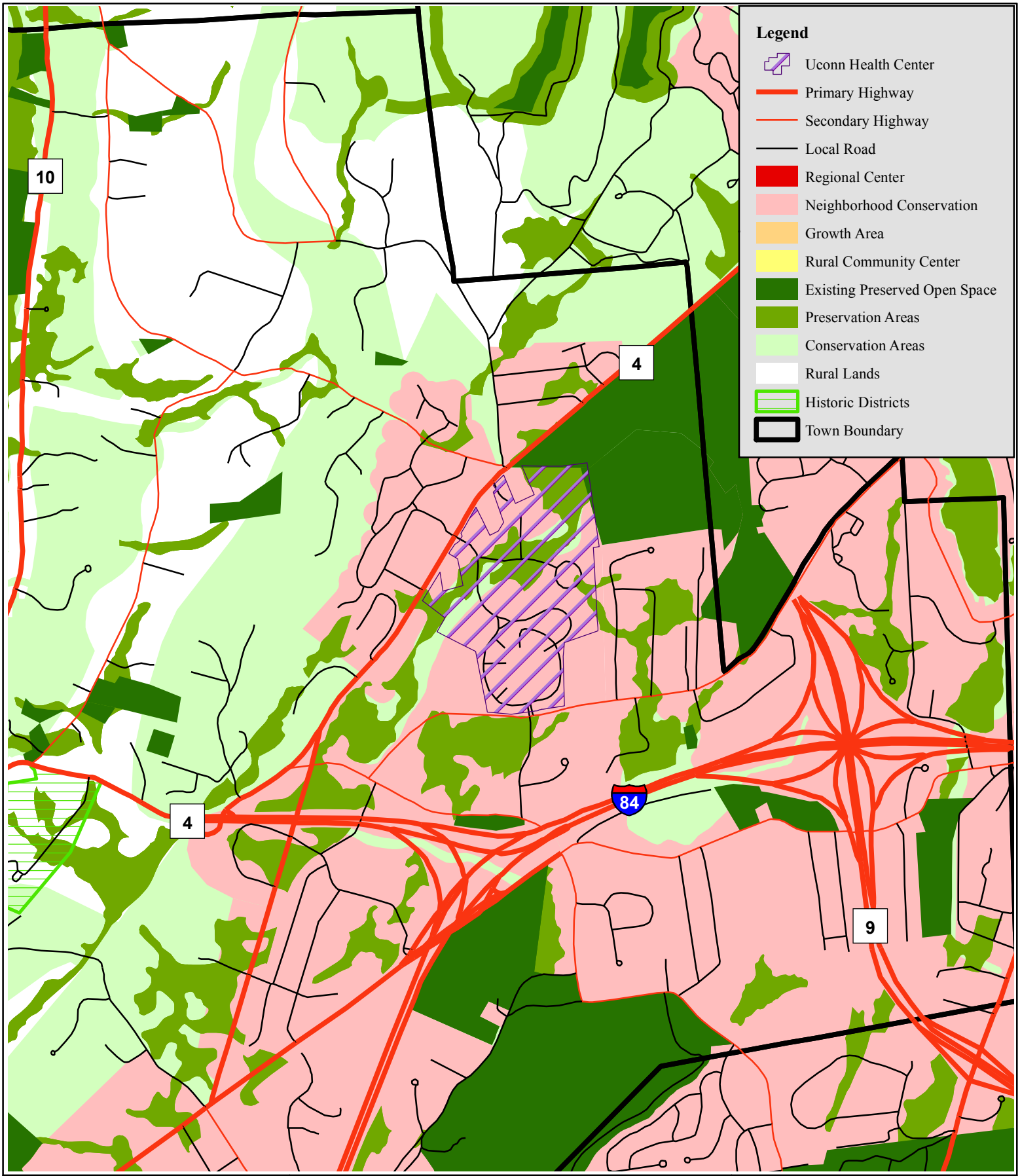
The accompanying *Conservation and Development Plan Locational Guide Map* apportions the state into land categories according to each area's characteristics and suitability for different forms of development or conservation activities. The categories of land use are designated on the *Locational Guide Map* as follows:

Statewide Development Areas
- Regional Centers
- Neighborhood Conservation Areas
- Growth Areas
- Rural Community Centers

Statewide Conservation Areas
- Existing Preserved Open Space
- Preservation Areas
- Conservation Areas
- Rural Lands
- Level A/B Aquifer Protection Areas
- Historic Areas

Figure 3-1 depicts the statewide conservation and development plan land designations for the project area. UCHC lies on land primarily designated as Neighborhood Conservation Area, with some designated Existing Preserved Open Space, Preservation Areas, and Conservation Areas. All new construction proposed under this project will occur in areas designated as Neighborhood Conservation Areas.

The state plan defines Neighborhood Conservation Areas as development areas that *promote infill development and redevelopment in areas that are at least 80% built-up and have existing water, sewer, and transportation infrastructure to support such development*. As stated in the plan, *the overall intent of this policy is to maintain the overall character and vitality of the area by promoting infill development and maximum use of existing infrastructure*.



SOURCE:
GIS data from Conservation and Development Policies Plan for Connecticut 2005-2010

Figure 3-1: Statewide Plan of Conservation and Development

LOCATION:
Farmington, CT

N

University of Connecticut Health Center New Construction and Renovation Project

Map By: SJB
MMI#: 1958-58
MXD: P:\Fig3-1StatePoCD.mxd
Date: Sept. 8, 2011
Scale: 1 in = 2,000 ft

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM®
99 Realty Drive Cheshire, CT 06410
(203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com

The proposed project is consistent with the state plan and current state guidelines for Neighborhood Conservation Areas. The project utilizes space in an existing developed area and includes both infill development (construction of a new hospital tower) and redevelopment (restructuring of the MARB parking area for the creation of the new ACC and redevelopment of the existing and outdated Lower Campus Research Complex). The project also maintains the overall character and vitality of the area by improving available health care facilities. In addition, the UCHC campus is located in an area served by existing water, sewer, and transportation arteries, thus maximizing the use of existing infrastructure.

The proposed project is consistent with the state plan growth management principles. It will redevelop and revitalize an area with existing physical infrastructure; it will concentrate development around transportation nodes and along major transportation corridors; it will conserve and preserve the integrity of environmental assets; and it will promote integrated planning to address health care, clinical care, academics, and research on a regional basis.

3.1.2 CAPITOL REGION PLAN OF CONSERVATION AND DEVELOPMENT

The Town of Farmington is located within the regional planning area associated with the Capitol Region Council of Governments (CRCOG). The following discussion presents portions of the 2009 CRCOG *Plan of Conservation and Development for the Capitol Region* as they relate to the proposed expansion. Italicized sections are direct excerpts from the plan. Not all plan policies are included in this discussion as they may not directly apply. For an expanded review of the plan, the reader is directed to the full document on file with CRCOG.

CRCOG prepared its original regional Plan in 2003 under the authority of Section 8-35a of the CGS. The 2009 update was prepared in response to Public Act No. 05-205 and *seeks to coordinate regional planning efforts with the responsible growth policies of the state*. It is a general guide for the future conservation and development of the greater Hartford area. The plan provides an overview of the factors that influence regional development as well as recommendations for future land use decisions.

The plan recommends a future development pattern in the region based on six major themes:

1. *Focus new regional development in areas in which existing and planned infrastructure can support that development.*

2. *Support efforts to strengthen and revitalize Hartford, the Capitol Region's central city, and also support the revitalization of older, urbanized areas throughout the region.*

3. *Develop in a manner that respects and preserves community character and key natural resources.*

4. *Implement open space and natural resource protection plans that acknowledge and support the multi-town nature of our natural systems.*

5. *Support the creation of new employment and housing opportunities, and transportation choices, to meet the diverse needs of our region's citizens.*

6. *Encourage regional cooperation in the protection of natural resources, the revitalization of urban areas, and economic development.*

The accompanying *Capitol Region Plan of Conservation and Development – Land Use Policy Map* apportions the region into land categories according to each area's existing characteristics and suitability for different forms of potential development or conservation activities. The categories of land use are designated on the *Land Use Policy Map* as follows:

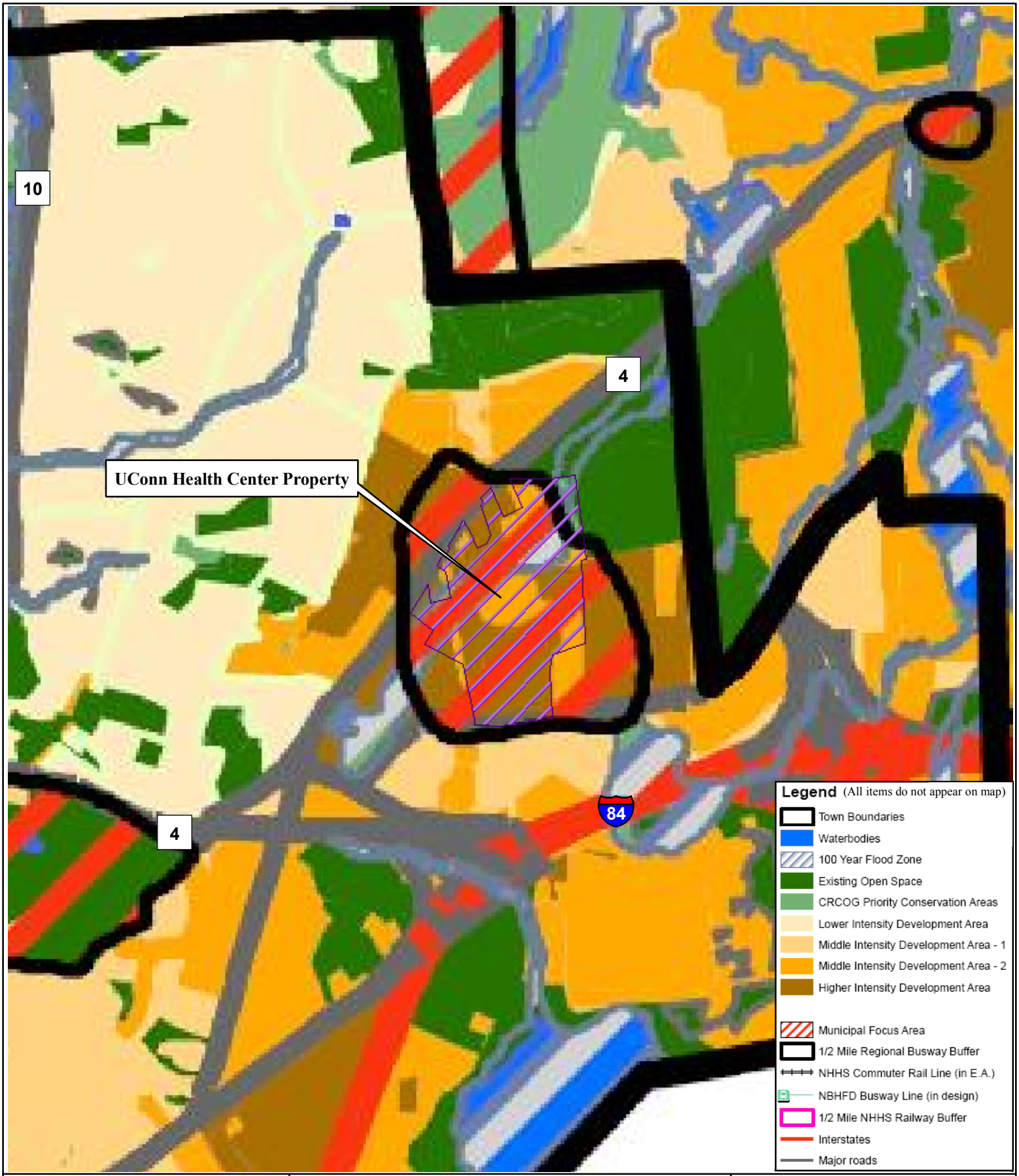
CRCOG Development Areas
- Higher Intensity Development Area
- Middle Intensity Development Area - 2
- Middle Intensity Development Area - 1
- Lower Intensity Development Area

CRCOG Conservation Areas
- Existing Open Space
- CRCOG Priority Preservation Areas

CRCOG Overlay Areas
- 100-Year Flood Zone
- Municipal Focus Area
- ½ Mile Regional Busway Buffer
- ½ Mile New Haven – Hartford – Springfield (NHHS) Railway Buffer

Figure 3-2 depicts the CRCOG conservation and development plan land designations for the project area. UCHC lies on land designated as a Higher Intensity Development Area and Middle Intensity Development Area - 2 as well as within a Municipal Focus Area for the Town of Farmington. All new construction proposed under this project will occur in areas designated by CRCOG as a Higher Intensity Development Area.

The 2009 *Plan of Conservation and Development for the Capitol Region* defines Higher Intensity Development Areas as a higher-density zoning designation that includes *downtowns, major business corridors, urbanized neighborhoods, village centers, and mixed use development with multi-family housing and retail*. The accompanying *Land Use Policy Matrix* notes that such areas are on or within one half mile of an existing or proposed sewer line, may be near proposed bus or rail lines, and that buildings may be three to four stories or taller. As stated in the plan, this designation *encourages the preservation of existing higher intensity areas which already exhibit these characteristics.*



SOURCE:
Capitol Region Plan of Conservation and Development - Land Use Policy Map dated October 21, 2009. Not all legend items appear in the vicinity of the UConn Health Center.

Figure 3-2: CRCOG Plan of Conservation and Development

LOCATION:
Farmington, CT

N

University of Connecticut Health Center New Construction and Renovation Project

Map By: SJB
MMI#: 1958-58
MXD: P:\Fig3-2CrcogPoCD.mxd
Date: Sept. 8, 2011
Scale: 1 in = 2,000 ft

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM®
99 Realty Drive Cheshire, CT 06410
(203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com

Municipal Focus Areas are those areas that *have been identified by town planners and include existing or potential conservation greenways; open space connections; commercial, retail, or mixed-use centers; traditional neighborhood developments; village greens; village centers; historic areas; transit-oriented developments; and technology or business centers.* The Municipal Focus Area in the vicinity of UCHC is defined for Commercial/Retail/Mixed-Use Center or Corridor Improvement on the accompanying *Capitol Region Plan of Conservation and Development – Municipal Focus Area Map*.

The proposed project is consistent with the current CRCOG guidelines for Higher Intensity Development Areas. The project utilizes space in an existing business corridor with all major utility services and includes development of multistory buildings. The project preserves an existing high density development area within the proposed Hartford-New Britain Busway corridor. The development of additional hospital facilities is consistent with the Commercial/Retail/Mixed-Use Center or Corridor Municipal Focus Area designation.

3.1.3 MUNICIPAL PLAN OF CONSERVATION AND DEVELOPMENT

The following discussion presents portions of the Town of Farmington's *Plan of Conservation and Development Update 2007* (adopted on February 22, 2008) as they relate to the proposed project. Italicized sections are direct excerpts from the plan. Not all plan policies are included in this discussion as they may not directly apply. For an expanded review of the plan, the reader is directed to the full document on file with the Town of Farmington Planning and Economic Development Department.

The 2007 plan is an update of the previous *Plan of Conservation and Development* prepared in 1995. It was prepared under the authority of Section 8-23 of the CGS to *provide a blueprint for the physical and economic development of [Farmington]*. The *Plan of Conservation and Development Update 2007* includes *an analysis of current demographic statistics and trends, an inventory of Farmington's natural resources, an identification of properties where development is not favored, and the planning policies expressed by the citizens of Farmington.*

A series of maps is included in the *Plan of Conservation and Development Update 2007* that provides somewhat detailed information regarding the UCHC site. As the mapping relates to the UCHC Farmington campus:

- Small areas of Prime Agricultural Soils (Map #1) are located in the northern and western portions of the property but not in the vicinity of proposed construction.
- The site does not contain Highly Erodible Soils (Map #4).
- The northeastern corner of the property is designated as a Primary Core Habitat area but not in the vicinity of proposed construction (Map #14).

- The UCHC property is not currently designated as Existing Open Space (Map #5) nor is it designated for future open space usage (Map #7).

- The Existing Land Use on site is designated as Government/Non-Profit and is surrounded by Open Space/Recreation to the northeast, Professional Office and Commercial uses to the west, and residential uses to the east and south (Map #11).

- Future Land Use on site is designated as Governmental/Institutional, with similar surrounding land uses to those currently in place (Map #12). As stated in the *Plan of Conservation and Development Update 2007*, the Government/Institutional category includes governmental functions, health and special population care facilities, schools, museums, and religious facilities.

Farmington's *Plan of Conservation and Development Update 2007* outlines several recommendations specific to UCHC as follows:

- *Continue to maintain a close working relationship with the University of Connecticut Health Center. Undertake a program which will make Farmington attractive to the development of bioscience industry within the town.*

- *Coordinate land use policies with the Health Center, which may seek to expand more of their facilities off campus.*

The proposed facility expansion is consistent with the current Farmington guidelines for Governmental/Institutional areas in that it is consistent with designated land uses, proposes facilities within the existing hospital property (as opposed to off-site areas), and advances the development of the bioscience industry within Farmington.

3.1.4 ZONING

As depicted on the most current version of the Farmington Zoning Map (dated June 8, 2007), the UCHC campus is classified as R40-Residential throughout most of the site and PR-Professional Office Zone in small areas in the western and northwestern part of the site. Areas of anticipated construction are located within the R-40-Residential Zone, with some potential extension of the new systems genomics facility into the PR-Professional Office Zone.

Figure 3-3 is an excerpt of the current Town of Farmington Zoning Map. The zoning regulations also designate three protective overlay zones within which additional height and aesthetic requirements apply. These are the Unionville Village District Zone, the Ridgeline Protection Zone, and the Airport Approach Overlay Zone. According to the Farmington Town Planner, UCHC does not lie in any of these zones.

Farmington's zoning regulations define hospitals as consisting of *a structure or structures used for the diagnosis, treatment, or other care of human ailments, and containing*

patient beds. Hospital uses are allowed by special permit in an R40-Residential Zone. Medical offices and laboratories are also allowed by special permit in a PR-Professional Office Zone. A portion of the new systems genomics laboratory is planned in an R-40 Zone. If this development is regulated as a non-state agency facility, a zone change and/or special permit will be necessary.

Given that the proposed uses at UCHC are consistent with existing land uses and are allowed under the existing local zoning regulations (even though they do not directly apply to state facilities), the proposed project is believed to be consistent with local zoning regulations. Though UCHC is not subject to the restrictions governing building setbacks, minimum lot sizes, and the like, the facility strives to be consistent with local zoning efforts whenever possible. The proposed research laboratories, while consistent with surrounding uses, may require a zone change and/or special permit.

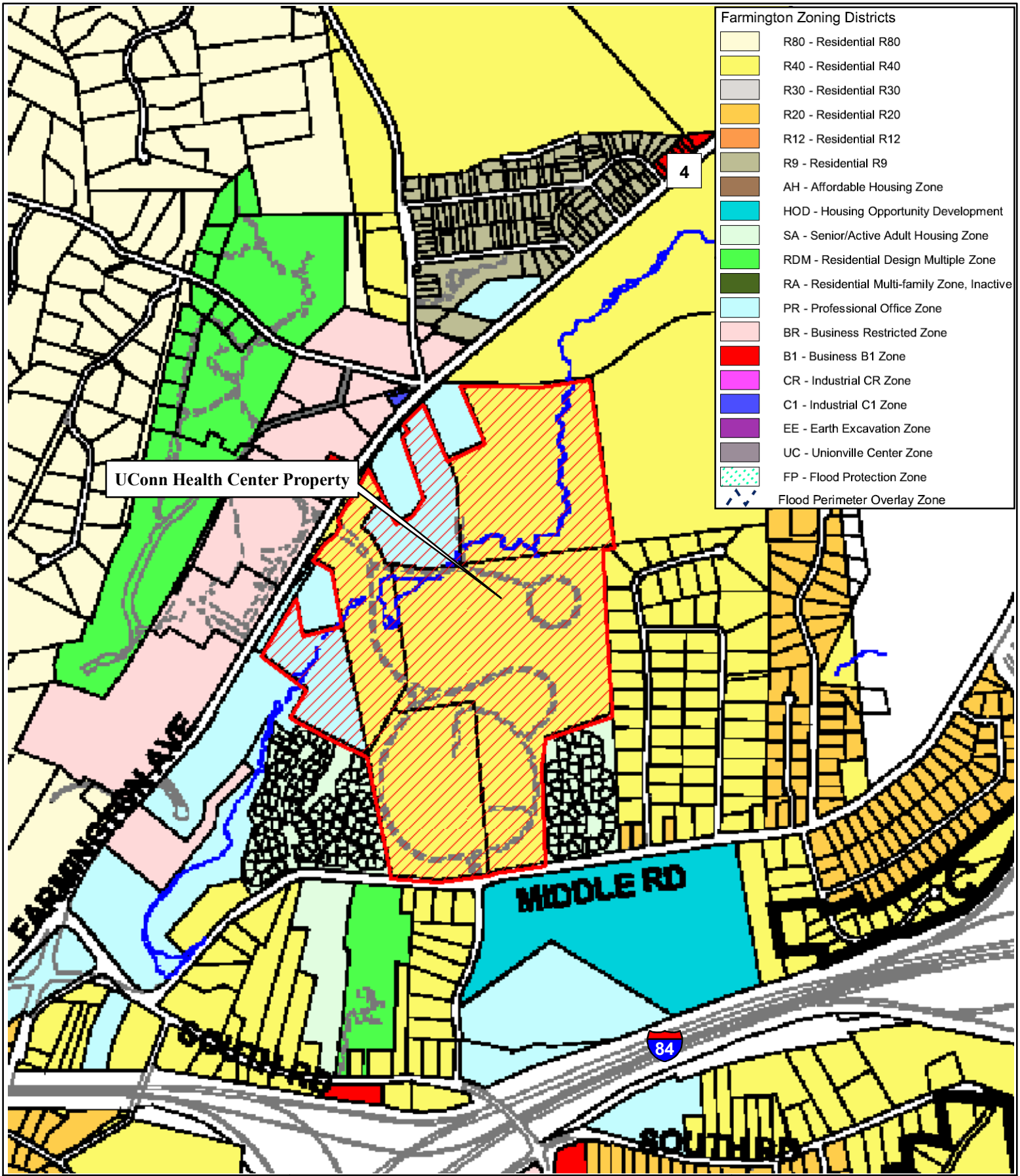
3.1.5 LAND USES IN THE PROJECT VICINITY

The State of Connecticut owns approximately 162 acres of land at the UCHC campus location as well as land within the surrounding vicinity. Figure 3-4 provides a breakdown of surrounding land uses. These consist of residential uses to the east, south, and southwest, developed commercial properties to the west and north, and forested open space to the northeast.

While land use at the UCHC campus may appear at first glance to be incongruent with the adjacent residential development along Middle Road, it is important to note that at the time of the UCHC campus construction in the 1960s there was very little development adjacent to the parcel. Much of the land surrounding the Health Center appears to have been vacant or in agriculture use on the 1970 aerial photography of the area (see Figure 3-5). A few residential homes were located along Munson Road and Middle Road, and a few buildings were visible along Route 4. Since that time, a significant amount of residential and commercial development has occurred on property surrounding the UCHC campus.

It is likely that UCHC has been a driving force for development in the area over the past four decades. The campus predates the residential subdivisions that lie immediately adjacent to the upper campus by more than 30 years.

It is anticipated that the new construction and renovation project will continue to promote development in the vicinity of UCHC's Farmington campus. As much of the surrounding land has already been developed, existing commercial properties that are proximal to UCHC could be refitted by private interests attempting to take advantage of the density of health care resources and research associated with UCHC and *Bioscience Connecticut*.



SOURCE:
Town of Farmington Zoning Map amended June 8, 2007. Not all legend items appear in the vicinity of the UConn Health Center.

Figure 3-3: Town of Farmington Zoning Map

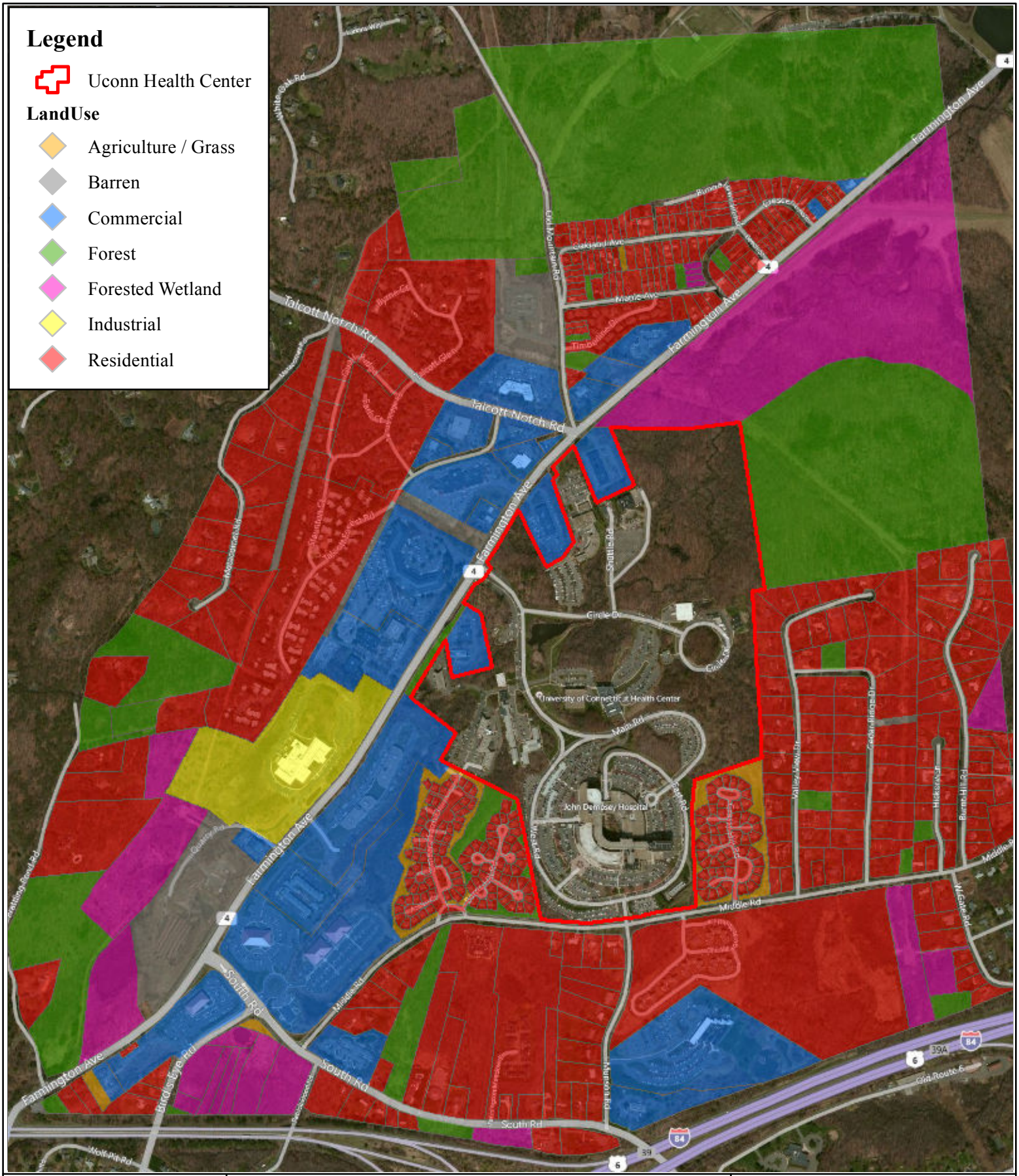
LOCATION:
Farmington, CT

N

University of Connecticut Health Center New Construction and Renovation Project

Map By: SJB
MMI#: 1958-58
MXD: P:\Fig3-3FarmZoning.mxd
Date: Sept. 8, 2011
Scale: 1 in = 1,000 ft

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM®
99 Realty Drive Cheshire, CT 06410
(203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com



SOURCE(S):
2007-2009 Aerial from Microsoft Virtual Earth via ESRI subscription service
Land Uses from site reconaissance by MMI

Figure 3-4: Land Uses in the Project Vicinity

LOCATION:
Farmington, CT

N

University of Connecticut Health Center EIE

Map By: scottb
MMI#: 1958-58
MXD: H:\1958-58\GIS\Maps\Report\Fig3-4LandUse.mxd
1st Version: 11/29/2011
Revision: 11/29/2011
Scale: 1 inch = 1,000 feet

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM®
99 Realty Drive Cheshire, CT 06410
(203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com

Figure 3-5
1970 Aerial Photograph

Image from Map and Geographic Information Center, University of Connecticut

3.1.6 SUMMARY OF DIRECT AND INDIRECT IMPACTS TO LAND USE AND ZONING

The proposed development is consistent with state, regional, and local land use plans and is in keeping with allowable land uses within the Town of Farmington's zoning designation. No direct adverse impacts are anticipated to occur to land uses in the project vicinity or long-range planning strategies at the local, regional, or state levels. No indirect impacts have been identified on land use, zoning, or community planning strategies.

3.2 SOCIOECONOMICS

The following information regarding demographics, employment, and tax base has been obtained from regional documents, census information and statistics, and publications of the CRCOG. This discussion provides background on the demographic and employment makeup of the Farmington region and the UCHC campus under existing conditions and in the context of the proposed project.

3.2.1 DEMOGRAPHICS

The Town of Farmington is an outer suburb of Hartford. The town and its rural neighbors Avon and Burlington experience a relatively strong demand for housing and strive to maintain a balance between new growth and sustaining preservation areas and open space. Farmington is also surrounded by the more densely populated urban and suburban communities of New Britain, Newington, Plainville, and West Hartford.

Table 3-1 presents a summary of census population figures for Farmington and its surrounding communities from 1970 to 2010. A large employer such as UCHC, especially with its good accessibility off Interstate 84 and Route 4, attracts employees from a region, not just within the Town of Farmington. Therefore, the impact on population within the region must be considered. Table 3-1 shows that smaller, more rural and suburban communities within the vicinity of UCHC have continued to increase in population over the last several decades while the larger, more urbanized communities have had relatively stable populations.

The expansion of the UCHC Farmington campus is expected to cause an increase in population within Farmington and its surrounding communities as direct and indirect employment generation increases demand for housing. However, given an overall population of nearly 300,000, the increase of employees and their families who settle in the area will not present a significant proportional increase.

TABLE 3-1
Historic Population of Farmington and Surrounding Communities (1970-2010)

	1970	1980	1990	2000	2010
Avon	8,352	11,201	13,937	15,832	18,098
Bristol	55,487	57,370	60,640	60,062	60,477
Burlington	4,070	5,660	7,027	8,190	9,301
Farmington	**14,390**	**16,407**	**20,608**	**23,641**	**25,340**
New Britain	83,441	73,840	75,491	71,538	73,206
Newington	26,037	28,841	29,208	29,306	30,562
Plainville	16,733	16,401	17,392	17,328	17,716
West Hartford	68,031	68,301	60,110	63,589	63,268
TOTALS	**276,541**	**271,021**	**284,412**	**289,486**	**297,968**

Sources: Connecticut State Register and Manual; U.S. Census Bureau

The anticipated direct and indirect jobs that will be created by this project will offer varying income levels, from highly paid research scientists to more modest spin-off service sector employees. The region already supports a wide diversity of healthcare, retail, and professional service employees, and UCHC will build upon this diverse population. Finally, the Farmington region already has a diversity of housing types with single-family, multifamily, condo, and rental units as shown in Table 3-2. This assortment of housing units can absorb the various income levels of new employees anticipated to result from the UCHC expansion.

TABLE 3-2
Housing Units by Type in Farmington Region (2010)

Towns	Total Housing Units	Single-Family	2-Unit	3 / 4 Units	5+ Units
Avon	7,260	5,927	162	490	674
Bristol	26,952	15,535	2,785	3,162	5,249
Burlington	3,288	3,125	35	42	53
Farmington	10,633	7,840	515	877	1,391
New Britain	30,865	10,816	5,424	5,839	8,779
Newington	12,764	10,058	296	606	1,804
Plainville	7,933	5,159	754	517	1,414
West Hartford	26,026	18,042	1,789	1,560	4,618

3.2.2 EMPLOYMENT

The Town of Farmington and its larger neighboring communities are home to many large employers. Table 3-3 presents the largest employers (more than 500 employees) by community. UCHC is the largest employer in the region.

The renovation and expansion is projected to increase permanent UCHC campus employment as follows:

- Approximately 100 new faculty clinicians and researchers
- Approximately 350 additional staff at the new Hospital Tower
- Approximately 230 new employees at the new ACC
- Approximately 330 new employees initially at the new systems genomics/personal medicine facility, growing to 660 at full buildout

In addition to direct employment in construction and/or permanent on-campus positions, indirect and induced employment and economic development within the region are anticipated to be significant. New job creation during the construction phase of the project is estimated to be 3,000 per year from 2012-2018 (according to the 2011 study by CCEA).

According to the CCEA *Economic Impact of Bioscience Connecticut* (2011), direct new employment on campus will reach about 680 by 2017. Direct, indirect, and induced employment is expected to reach 2,200 in 2019 and grow to as large as 16,400 by 2037.

The CCEA report calculates indirect and induced job creation through estimates on spin-off industries related to research and successful patents as well as economic multipliers for medical space. Thus, the UCHC expansion project will have a significant positive impact on employment in the Farmington region as spin-off service and supply companies locate or expand within these communities.

TABLE 3-3
Major Regional Employers

Employer	Town	Number of Employees
UCONN Health Center/Dempsey Hospital	Farmington	5,000
ESPN Sports Broadcasting	Bristol	3,400
Connecticut Department of Transportation	Newington	3,100
Hospital of Central Connecticut	New Britain	2,700
City of New Britain	New Britain	1,794
Bristol Hospital, Inc.	Bristol	1,750
Central CT State University	New Britain	1,716
City of Bristol & Board of Education	Bristol	1,656
The Hospital for Special Care	New Britain	1,396
State of Connecticut	New Britain	1,095
Town of West Hartford	West Hartford	1,000-2,000
University of Hartford	West Hartford	1,000-2,000
Town of Farmington/Board of Education	Farmington	966
Otis Elevator	Farmington	782
The Stanley Works	New Britain	780
Town of Newington	Newington	656
Data-Mail,Inc.	Newington	651
Tunxis Community College	Farmington	606
Bank of America	Farmington	600
Town of Avon	Avon	549
Town of Plainville	Plainville	538
Hebrew Home and Hospital	West Hartford	500-999
Wiremold Products, Inc.	West Hartford	500-999
Macy's/Filene's	West Hartford	500-999
Connecticare	Farmington	500

Sources: 2010 Comprehensive Annual Financial Reports of Avon, Bristol, New Britain, Newington, Plainville, and West Hartford, and CERC 2010 Burlington Town Profile.

3.2.3 SUMMARY OF DIRECT AND INDIRECT IMPACTS TO SOCIOECONOMICS

The Town of Farmington and its neighboring communities are well poised to absorb the expected increase in population and housing demand resulting from the UCHC expansion. The region already supports a population of diverse socioeconomic characteristics through a variety of housing types. Because UCHC is so easily accessible,

it is anticipated that spin-off economic development will occur regionally, and increased population will disperse regionally.

3.3 COMMUNITY FACILITIES AND SERVICES

The following information relative to education, health care, public safety, emergency services, and parks and recreation was taken in part from the Town of Farmington Plan of Conservation and Development, the Town of Farmington website, various college and university websites, and individual interviews. Personal telephone interviews and on-line research have been conducted to update and verify this information.

3.3.1 EDUCATION

The Town of Farmington has four lower elementary schools, one upper elementary school, one middle school, and one high school. Details of each school are presented in Table 3-4. Farmington public schools consistently rank as among the best in the nation.

Tunxis Community College, located in Farmington, offers two-year associate degrees in Allied Health, Dental Hygiene, Physical Therapist Assistant, Business Office Technology (Medical), Drug and Alcohol Recovery Counselor, Biomolecular Science Technology Studies, Human Services, and a variety of related certificate programs and continuing education programs. The Dental Hygiene program has a 30-year affiliation with the UCHC School of Dental Medicine.

TABLE 3-4
Public Schools in the Town of Farmington

School	Address	Grade	Enrollment
Farmington High School	10 Monteith Drive	9-12	1,400
Irving A. Robbins Middle School	20 Wolf Pit Road	7-8	690
West Woods Upper Elementary School	50 Judson Lane	5-6	700
East Farms School	25 Wolf Pit Road	K-4	430
Noah Wallace School	2 School Street	K-4	480
Union School	173 School Street	K-4	300
West District Elementary School	114 West District Road	K-4	280

Source: Town of Farmington

The University of Connecticut School of Medicine, School of Dental Medicine, and Graduate School offer a variety of baccalaureate, graduate, and doctoral degrees at its Farmington campus as follows:

School of Medicine – The current class of 2014 enrolled 89 students from 3,141 applications. There are 420 full-time faculty.

School of Dental Medicine – During the 2010-2011 application year, approximately 1,200 applications were received, and 75 were enrolled. There are 101 faculty and 110 staff associated with the school.

Graduate School – The graduate program typically supports 150 Ph.D. students, 35 Master of Dental Science students, and 120 Master of Public Health students.

The proposed expansion and renovation project will allow for an increase in student capacity at UCHC and provide access to state-of-the-art research and diagnostic facilities for educational purposes. Enrollment in the Schools of Medicine and Dental Medicine is expected to increase by 30% or roughly 150 students.

The only other medical degree program in Connecticut is hosted by the Yale University School of Medicine, located in New Haven. Yale offers masters and doctoral programs, continuing medical education, a physician associate program, nursing program, and other masters and doctoral programs. Currently, the school admits 100 students per year. The advent of *Bioscience Connecticut* and the research triangle between Storrs, Farmington, and New Haven will strengthen the three entities and promote medical bioscience research in the state. The proposed project will provide the opportunity for increased synergy with the surrounding educational institutions.

3.3.2 PUBLIC SAFETY AND EMERGENCY SERVICES

Police Protection

The UCHC campus maintains its own public safety and emergency personnel. They are specific to the UCHC campus and surrounding associated facilities but provide assistance to the Town of Farmington services when requested and may request assistance from town forces if the need arises. UCHC forces may also take enforcement off campus to other locations for moving traffic violations that originate on the UCHC campus.

The UCHC police force includes 14 police officers, 10 buildings and grounds security officers, and three dispatchers who collectively provide emergency and security coverage 24 hours per day, seven days per week. UCHC police, established under special statute, have jurisdiction over all UCHC owned or leased property. The facilities are equipped with 232 cameras, card readers for access doors, and 50 blue phones (dedicated safety phones). The campus recently underwent an $8M security upgrade.

The Town of Farmington police force is available to assist UCHC on an as-needed basis. The Farmington Police Department is one of 16 nationally accredited police departments in Connecticut. The full service department employs 90 people (approximately two-thirds are officers) and is divided into the administration, animal control, communications, detective, patrol, training, and records units. The town's Emergency Management Director is also the Chief of Police.

Emergency services can be contacted by dialing 9-1-1. Similar to the rest of Connecticut, land line calls and wireless calls to 9-1-1 reveal the location of the caller to the dispatcher. This information helps to provide more efficient emergency response. 9-1-1

emergency calls are initially routed to the Town of Farmington police emergency dispatch. If the situation involves UCHC, the call is then routed to UCHC police.

The proposed facility expansion will generate the need for increases in security staff. The new hospital tower will have 24/7 visitation, requiring additional security guards. Additional numbers of people on campus will also require more officers. The proposed parking garages will necessitate a different type of patrolling compared to the existing surface parking. These staffing additions will comprise a portion of the jobs that will be created through the implementation of this project.

Fire Protection

The University of Connecticut Fire Department Health Center Station is a fully operational 24-hour department consisting of four shifts of firefighters, fire officers, and chief officers. Currently, there are 19 full-time employees and two current vacant positions. All firefighters attend the *Recruit Firefighter* program at the Connecticut Fire Academy and receive continual training in specialized areas such as live fire training, radiological emergencies, hazardous materials incidents (EPA 40-hour), confined space rescue, and emergency medical services. Fifteen department staff are licensed paramedics, providing the highest level of pre-hospital medical care to the UCHC and surrounding communities.

In addition to the UCHC campus, the Fire Department provides paramedic services to the towns of Avon, Canton, and Farmington and response to other towns when requested. The department also provides automatic fire mutual aid to sections of Avon and Farmington and to other towns when requested.

The department is well equipped with two engines, two paramedic units, a shift commander SUV, two neonatal intensive care ambulances, a special operations/technical rescue vehicle, and a hazardous materials vehicle with the state mass decontamination trailer.

Emergencies on the UCHC campus are handled by a special emergency line (x7777) and are answered by UConn Public Safety Dispatch, a non-Public Service Answering Point (PSAP). Any 911 call received by a PSAP (Farmington or Connecticut State Police) when determined to be on UCHC property is transferred to UCHC Public Safety Dispatch.

The UConn Office of Fire Marshal and Building Inspector is responsible for permitting and inspection of all renovations and new construction not exceeding the threshold limit as described in Connecticut State Building Code 106.1.5. Existing building annual inspections are completed by the State Fire Marshal's Office until the building is deemed Code compliant. Approximately 90% of buildings on campus are sprinklered. Some of the existing buildings that are not sprinklered will be torn down in preparation for new construction.

The Farmington Fire Department is also available to UCHC on an as-needed basis. The department provides fire, rescue, and emergency medical services and is staffed by 147

volunteer fire fighters as well as eight career fire fighters. Medical patients are typically transported to UCHC.

The UCHC Fire Department will increase its staff to meet the demands of the proposed project, including an expected increase in calls for service. The department is in the process of updating the mutual aid response plan in preparation for the new construction projects and for the future expansion of the campus. This will assure that adequate resources are available to respond.

3.3.3 PARKS AND RECREATION

The Farmington Recreation Department manages activities on public lands at 18 locations throughout Farmington, including fields at the seven public schools, the Westwoods Golf Course, and several parks and park complexes. The Highway and Grounds Division of the Department of Public Works maintains these areas. In addition to town-owned recreation areas, other recreation areas in the town include the following:

- Bicycle and pedestrian trails owned and managed by the State of Connecticut or the Farmington Valley Trails Council
- Kayaking, tubing, boating, and fishing on the Farmington River
- The privately owned Farmington Sports Arena

According to the town's 2007 *Plan of Conservation and Development Update*, Farmington owns 43% of the open space in town out of a total of 5,912 acres. Fifty-nine percent of this area is utilized for Parks and Recreation facilities, with the remainder in forests, agriculture, or potentially developable land. Private organizations own 23% of the open space in Farmington, while the State of Connecticut owns 17%; the City of Hartford owns 5%; the Farmington Land Trust owns 3%; and the MDC owns 3%. The remaining 6% is associated with major waterbodies.

Two parcels to the northeast of UCHC are classified by the Town of Farmington as existing open space. This 133-acre tract of land stretches from the northern ends of Valley Ridge Drive and Burnt Hill Road to Farmington Avenue (Route 4), with the northern parcel owned by the State of Connecticut and the southern parcel owned by the Town of Farmington. A portion of this tract includes Critical and Unique Wetland Number 26 as delineated in the 2005 *Environmental Resource Inventory and Plan* of the Town of Farmington. In addition, an undeveloped parcel across Middle Road to the southeast from UCHC was classified by the Town of Farmington as potential future open space although a portion of this parcel has recently been developed into the Village at Yorkshire condominium complex.

The UCHC campus in Farmington provides some areas of passive recreation, with active use of the pedestrian walkways for walking and jogging by faculty and visitors alike. The new hospital tower will include a therapeutic garden. Otherwise, no new recreational amenities are proposed at the campus. The proposed construction at UCHC

is not anticipated to have a significant positive or negative impact on recreation in the Town of Farmington.

3.3.4 SUMMARY OF DIRECT AND INDIRECT IMPACTS TO COMMUNITY FACILITIES AND SERVICES

The proposed project is intended to increase hospital efficiency as well as provide for an expansion of services. While the hospital will offer exceptional medical care to additional patients, the burden on local emergency services personnel is not expected to increase significantly. Rather, outpatient services, clinical services, and other non-emergency inpatient services are expected to increase. In general, these services do not rely on public emergency services for transportation to the hospital. Thus, the impact to local emergency services is projected to be minimal, with projected service increases tied to population demographics.

The proposed construction at UCHC will not occur on or directly adjacent to any existing designated open space areas. Thus, the proposed project will not impact open space outside of the UCHC property.

3.4 AESTHETIC/VISUAL RESOURCES

3.4.1 EXISTING AESTHETICS

The prominent hilltop location of UCHC provides panoramic views of the surrounding hills in Farmington as well as downtown Hartford. The views are considered to be spectacular during the changing seasons. The UCHC facility is an icon for the area, with a modern design that is prominently displayed from several vantage points including Interstate 84, Middle Road, Farmington Avenue, and Main Road. The renovation of the existing buildings and construction of new buildings will further promote UCHC's image as a modern facility and a four-decade long visual landmark.

3.4.2 PROPOSED AESTHETICS

With the exception of the new hospital tower, which will be visible from I-84 and local vantage points within Farmington, the majority of the remaining structures associated with the UCHC expansion will only be visible from within the campus.

The proposed building and parking garage exterior facades will be harmonious with the existing architecture of the campus. The new hospital tower will have glass and architectural precast panel elements.

The height of the proposed structures will be consistent with the existing campus development, with multistory buildings and parking structures to minimize the construction footprint and impervious surfaces.

The vast majority of proposed construction will occur in developed portions of the campus, mostly replacing existing paved surfaces. A modest amount of clearing is anticipated, and this will occur on the periphery of the developed campus.

3.4.3 SUMMARY OF DIRECT AND INDIRECT IMPACTS TO AESTHETIC AND VISUAL RESOURCES

The proposed facilities at UCHC are not expected to substantially change the aesthetics of the area. Viewed from off site, the most prominent feature will be the new tower, which will be similar in height and style to the existing tower, with more glass and architectural treatments. The remaining elements will be visible from points internal to the campus, with limited off-site exposure.

In order to address concerns associated with light pollution, a number of strategies will be employed in the design and planning of the new John Dempsey Hospital bed tower addition and campus revitalization. Interior spaces will be equipped with occupancy sensors to control light in unoccupied spaces during the evening and nighttime hours of operation. The intent will be to create a lighting design that carefully controls any spillover or light pollution from the interior to the exterior environment. The concept of maintaining a dark sky for suburban and rural areas will be a focus of the design. While the campus will need to be designed to maintain security lighting on a 24-hour-per-day basis, the fixtures that are located along the perimeter of the campus will be installed with cutoff shielding to minimize light pollution to the surrounding community.

3.5 PUBLIC UTILITIES AND SERVICES

Public utilities in the Town of Farmington are provided by several different suppliers. The discussion below focuses on public utilities available in the vicinity of UCHC.

3.5.1 WATER SUPPLY

The MDC provides drinking water to the eastern portion of Farmington, including UCHC. MDC draws its water supply from a number of surface water reservoirs located in the Farmington River valley. Average day water demand for the existing UCHC campus facilities was 249,000 gallons per day (gpd) in the water year 2009 to 2010, with a peak day demand of 351,560 gpd in June 2010.

Water infrastructure improvements will be needed to serve the new buildings; however, no off-site improvements or expansion is proposed. Initial estimates of hospital tower water uses project an increase of approximately 40,000 gpd as follows:

- 169 beds at 175 to 200 gallons per bed per day = 29,750 to 35,000 gpd
- 12 operating rooms at 75 to 100 gallons per room per day = 900 to 1,200 gpd
- An additional 4,600 gpd for process flows (not directed to sewer)
- Total: 35,250 to 40,800 gpd

In 2010, UCHC contacted MDC regarding its ability to serve the campus with an increase in water consumption by 35,250 to 40,800 gpd related to the new hospital tower. Total water demands once the tower is operational are projected at 290,000 gallons on an average day and approximately 393,000 gallons on a peak day. The MDC confirmed by letter on September 21, 2010 that it had adequate capacity to provide the increased water consumption associated with the proposed hospital tower.

Preliminary estimates of potential water usage at the ACC and the new systems genomics/personalized medicine facility are as follows:

- The Connecticut Department of Public Health (DPH) design flow for water demand associated with a medical office building is 0.2 gpd/square foot (s.f.). The ACC is expected to support approximately 300,000 square feet of floor space. At 0.2 gpd/s.f., this equates to 60,000 gpd of water demand (and similarly, wastewater discharge). If the building has a physical plant for heating and cooling, process water could be on the order of an additional 5,000 gpd for a total of 65,000 gpd.

- There are no published average design flow rates that apply directly to a laboratory facility due to the varying nature of possible uses. A facility of the proposed size and function of the proposed systems genomics facility is anticipated to have a water demand between 75,000 and 100,000 gpd. Peak daily usage is estimated at 110,000 gpd.

New water demand on the site could increase by up to 205,800 gpd on average. This value will be reevaluated as specific building layout and design information becomes available.

The MDC currently operates two 16-inch diameter water mains on Route 4 and a 10-inch diameter water main on Middle Road. Each of these provides domestic and fire protection water to UCHC. Water pressure in the area is reported to be approximately 60 to 65 pounds per square inch (psi), which is an acceptable range. The current off-site infrastructure is expected to support the projected increased demand. Any infrastructure improvements related to the water mains on campus will be addressed as part of the detailed project design.

The MDC is one of the largest water utilities in Connecticut and provides public water supply to a large portion of central and northern Connecticut. The majority of its service area is located west of the Connecticut River. The MDC provides water to its customers from six active surface water sources. It had an average day demand of 54.55 million gallons per day (mgd) in 2007 and a peak day demand of 78.38 mgd. The amount of water available to MDC customers on an average day is 71.45 mgd and 110 mgd on a peak day.

The projected increased water demand of 205,800 gpd is equivalent to 0.4% of the MDC's average day demand in 2007. MDC's customer demands have not significantly increased or decreased since 2007. As such, the MDC system is believed to be adequate

to supply the required quantity of water to service the proposed project, and no significant impact is anticipated to water supply service as a result of the project.

3.5.2 SANITARY SEWER

Sanitary sewer service in the vicinity of UCHC is provided through the Town of Farmington Water Pollution Control Authority (WPCA). The Farmington Water Pollution Control Facility (WPCF) receives and provides advanced secondary treatment to 1.5 billion gallons of wastewater from Farmington, Avon, Canton, and Burlington each year. The collection system encompasses over 150 miles of pipeline and includes 17 pumping stations. According to the *State of the Farmington River Watershed Report* (2004), the Farmington wastewater treatment facility has a capacity of 5.56 mgd and an average discharge of 4.10 mgd. Its current permit was issued in 2007.

UCHC currently holds a discharge permit with the Town of Farmington for an average monthly sanitary flow of 350,000 gpd and a maximum daily flow of 400,000 gpd. There is no meter on the sanitary system, so current sanitary usage is estimated based on metered water records and estimates of losses due to evaporation in the heating and cooling equipment. For the purposes of this EIE, system losses are neglected. As noted in Section 3.5.1, peak day water demand was 351,560 gpd in 2010. As such, UCHC is currently operating within the limitations of its existing permit.

Additional sewer discharges related to the project have been estimated in relation to potential new water usage. Similar to water supply infrastructure, only on-site improvements are contemplated to serve the new buildings. No off-site expansion is proposed. These discharge estimates are summarized below:

- The new hospital tower is expected to generate sewer flows of 30,650 to 36,200 gpd.
- The new ACC is expected to generate sewer flows of 60,000 gpd.
- The new systems genomics/personalized medicine facility is expected to generate sewer flows of up to 70,300 gpd.
- The above totals 166,500 gpd of new sewage into the Farmington WPCA system.

Recall from Section 3.5.1 that the average day water demand at UCHC was 249,000 gallons in 2010 and that the peak day water demand was 351,560 gallons in June 2010. Neglecting losses from the cooling towers, the addition of 166,500 gpd of sewage flows to the existing average day demand will result in a sewage flow of approximately 415,500 gpd and up to 587,000 gpd on peak days. These discharges volumes exceed UCHC's existing permit limits.

The Town of Farmington granted permission by letter dated September 22, 2010 for UCHC to increase its sanitary system discharge by approximately 36,000 gallons per day in association with the new hospital tower. This permission was granted subject to approval by the town WPCA and State of Connecticut Department of Energy & Environmental Protection (DEEP).

UCHC applied to DEEP in 2011 for an increase in its discharge permit. A draft permit was issued in September 2011 that allows UCHC to discharge an average monthly flow of 430,000 gpd. UCHC will need to secure additional permit modifications from the Town of Farmington and DEEP to increase permitted sewage flows. Additionally, long-term pump station capacity and sewage treatment plant facilities planning (currently underway) will need to factor in the proposed increases in discharge rates in the coming years. These will be undertaken in concert with detailed design. As the proposed sewage discharge increase is a small percentage (4%) of the Town of Farmington's existing treatment rate, it is believed that no treatment plant upgrades will be necessary to support the proposed project.

3.5.3 STORM SEWER

General

Stormwater at the UCHC campus drains through a complex system of storm sewer pipes, open water, and detention ponds. The majority of stormwater runoff from the campus flows to an unnamed brook that flows approximately parallel to Farmington Avenue for about 2,500 feet before entering the campus. Within the campus, the brook generally flows north and east, passing beneath the roadway between the North and South Dowling buildings, under Main Road, through a detention/sedimentation pond, under Circle Road, under Shuttle Road, and through an undeveloped wooded and wetland area before exiting the property at the northeast corner and crossing Farmington Avenue approximately 4,700 feet from the property line.

The remaining stormwater runoff leaves the campus along a portion of the southeasterly boundary, along the southerly boundary to Middle Road, or at a point on the northerly boundary to the drainage system in Farmington Avenue. The drainage system consists of overland flow on paved, landscaped, or naturally vegetated areas; channelized flow in paved, riprap-lined, grass-lined, or natural channels; and flow through an extensive network of inlet structures and pipes.

Hydrology

Topography of the UCHC campus is characterized by the lower easterly slope of Talcott Mountain and the valley floor on the northwesterly side of the site and drumlin-like formations along the southeasterly side of the site. Elevations (relative to the National Geodetic Vertical Datum of 1929) vary, with approximate elevations of 310 to 330 feet along the northwesterly (Farmington Avenue) side, elevation 290 to 315 feet along the valley floor, and approximately 425 feet at the top of the drumlin in the south central portion of the site. Elevations along the southerly property line (Middle Road) vary between 355 and 375 feet. An unnamed, perennial brook flows along the valley floor. Ground slopes within the site vary from less than 1% along the brook to as much as 67% (one foot vertical to 1.5 feet horizontal) on the side slopes of the drumlin.

Land cover on the UCHC campus consists of buildings, roadways, parking areas, maintained landscaped areas, and wooded areas with wetlands. The primary area of development on the site comprises a dense cluster of medical and related buildings, roadways, parking areas, and maintained landscaped areas. Other buildings, roadways, parking, and landscaped areas are scattered throughout the remainder of the parcel. Undeveloped portions of the site are generally wooded.

Buildings, roadways, and parking areas (impervious areas) occupy approximately 38.5% of the campus. The maintained landscape areas account for approximately 11.4% of the property. Wooded areas occupy approximately 50.0% of the site within which is 35 acres of wetland (approximately 22% of the site).

Hydraulic features on the property include the unnamed brook that flows southwest to northeast through the site and 30 storm sewer systems collecting and conveying runoff from the roadways and parking areas. The unnamed brook crosses four of the site roadways in pipe or box culverts and flows through a sedimentation basin located in the west central portion of the site. Approximately 144 acres or 89% of the campus drains to the brook.

The watershed of the unnamed brook at the northeast corner of the campus is bounded by the Talcott Mountain ridge on the west, South Road on the south, approximately the easterly UCHC property line to the high point of Burnt Hill to the east, and the northerly property line (extended) of the UCHC campus to the north. The total watershed area is approximately 495 acres.

There are three ponds on the UCHC campus. The first is located at the southwest corner of the Dowling North building. This pond is formed by an earth berm on its south side and has a surface area of approximately 0.4 acre. It is heavily silted. Inflow to this pond comes primarily from developed property west of Farmington Avenue and also from a portion of the Farmington Avenue drainage system. The earth berm has been breached, and outflow is not controlled. Discharge from the pond flows in a channel through a wetland area and into the unnamed brook crossing the UCHC campus.

The second pond is located in the area immediately east of Main Road and south of Circle Road. This pond was formed by the embankments for Main and Circle Roads and by a constructed earth berm on its easterly side. The 1994 Stormwater Management Plan for the campus indicates that this pond was constructed as a detention pond and as an aesthetic addition to the property. It was constructed with an impermeable liner on its sides and bottom. The pond acts as a sediment basin and has retained sediment to a depth of three to four feet. A project is currently underway (in design and permitting) to restore the pond back to its original function and capacity.

Drainage systems from the primary area of development (i.e., the south central portion of the site), from development on the westerly side of Farmington Avenue, from the northerly part of Main Road (between Circle Road and Farmington Avenue), and from

the Administrative Services Building discharge to this pond. The unnamed brook also flows into the pond through a 48-inch diameter culvert under Main Road. Discharge from the pond is controlled by a concrete weir at the easterly end of the pond.

The third pond is located in the northeasterly portion of the site, east of Shuttle Road. It appears to be fed by ground water and overland flow from the immediately adjacent wooded areas. Outflow from the pond discharges to the northeast into a wetland area and then into the unnamed brook.

Existing Drainage System

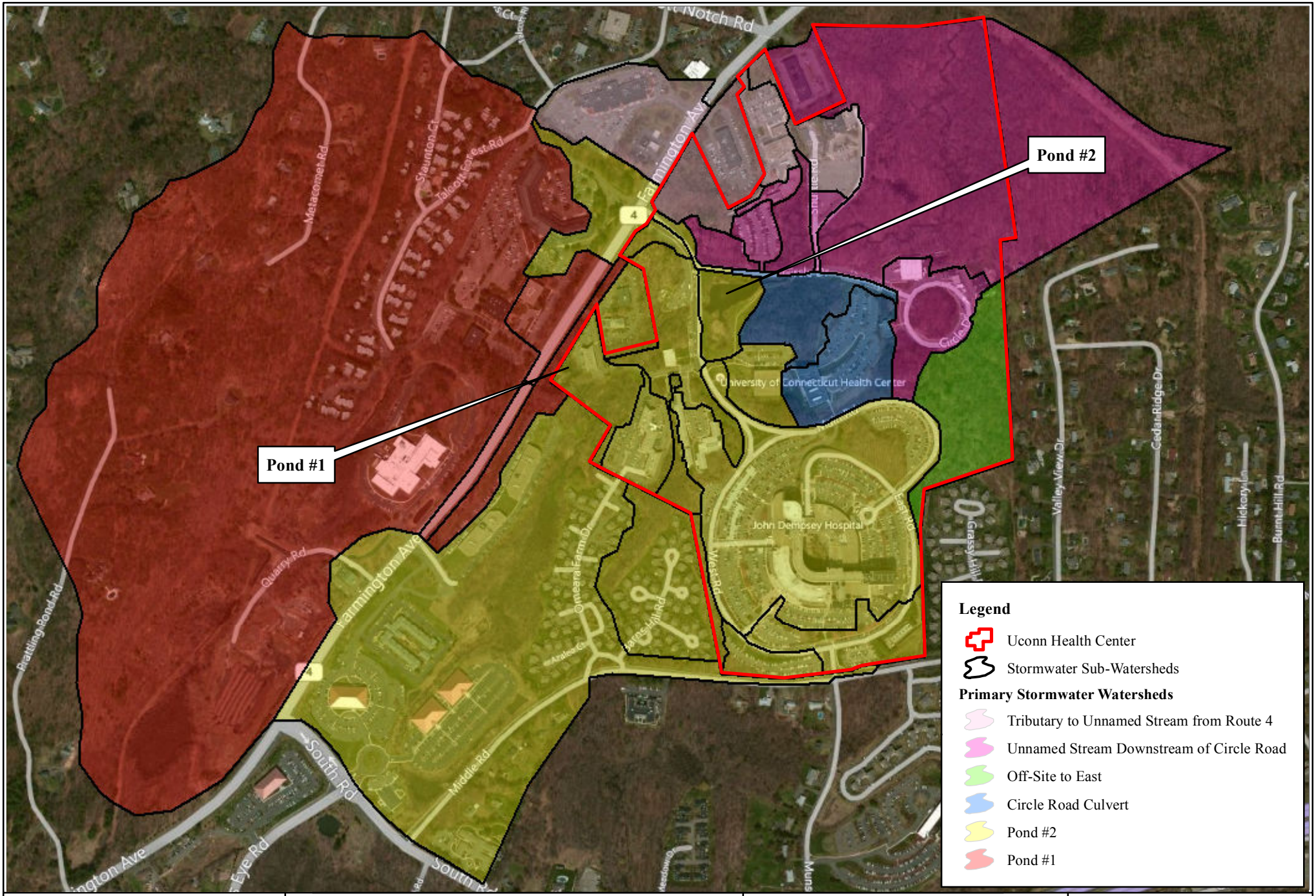
The configuration and extent of the existing drainage system serving the UCHC campus was compiled from mapping and recent field survey of a portion of the site provided by UCHC staff. This data was supplemented by field surveys of the sedimentation basin area, the MARB area (including Parking Lot N), and the Creative Child Care Center available from survey archives. Data was verified, to the extent possible, through field observations to identify the existence and location of drainage structures; the size, type, and direction of pipe connections; and the general condition of overland and underground conveyance systems. Figure 3-6 depicts the stormwater collection system and subwatersheds.

Planned Improvements

The new hospital tower and two associated parking structures will be constructed on areas that are currently paved. The primary storm drainage trunk lines conveying runoff from this subwatershed to the current discharge point (i.e. the sedimentation pond near the intersection of Main and Circle Roads) is not proposed to be significantly altered. The proposed construction is anticipated to reduce impervious surface areas near the new hospital tower as compared to existing conditions.

The proposed ambulatory care facility and associated parking will be located adjacent to the Medical Arts & Research/Farmington Surgery Center Building in what is now Lot N. This location will result in a majority of the new complex being constructed on an existing paved area. The outer edge of the development will encroach upon but generally follow the topography of the adjacent sloping hillside. Increases in impervious area are expected to be modest.

The new systems genomics/personalized medicine facility will be constructed in a currently developed area near the Lower Campus Research Campus and Dowling North building complex, much of which is currently paved. Similar to the ACC development, increases in impervious area are anticipated to be modest.



SOURCE(S):
2007-2009 Aerial Photograph from Microsoft Virtual Earth via ESRI subscription service
Stormwater sub-watershed delineation performed by URS

N

Figure 3-6: Stormwater Watersheds

University of Connecticut Health Center EIE

LOCATION: Farmington, CT

Map By: scottb
MMI#: 1958-58
MXD: H:\1958-58\GIS\Maps\Report\Fig3-6Storm.mxd
1st Revision: 11/29/2011
Revision: 11/29/2011
Scale: 1 in = 750 ft

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM®
99 Realty Drive Cheshire, CT 06410
(203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com

All new facilities will be constructed in areas draining to the unnamed stream that flows northeast through the UCHC campus. Construction on the upper campus and near the existing Lower Campus Research Complex will tie into the stormwater management system that currently conveys stormwater north and west along Main Road to the primary sediment collection basin for the UCHC campus (the large pond located at the intersection of Main Road and Circle Road). Construction in Lot N near the MARB will tie into the existing stormwater system that drains through a detention basin and a wetland to eventually discharge into the unnamed stream just upstream of Circle Road.

Anticipated decreases in impervious surfaces from the new hospital tower will be used to aid in mitigating any increases in impervious surfaces from the ACC and new systems genomics/personalized medicine facility. Detailed hydrologic and hydraulic modeling and analysis will be undertaken in the design phase to more exactly quantify these numbers.

Conclusion

The stormwater collection system will not be significantly impacted by the project, particularly given the anticipated lack of significant increase in impervious area at the site. The goal will be to achieve no net increase of impervious area on a campus-wide basis.

3.5.4 ELECTRIC, GAS, TELEPHONE, AND CABLE SERVICE

Electric Service

Electrical service to UCHC is provided by Connecticut Light & Power. Underground electrical lines run throughout the UCHC campus. Electrical service will be extended to new buildings as appropriate, including the new hospital tower, new ACC, new systems genomics/personalized medicine facility, and the new parking garages.

Connecticut Light & Power has sufficient supply to meet additional UCHC demands associated with the proposed construction and renovation project. Other than extending service, no electrical utility upgrades are anticipated to support this project.

Natural Gas Service

Natural gas service to the UCHC campus is provided to the site by Connecticut Natural Gas. Underground gas lines run throughout the UCHC campus. Gas service will be extended to new buildings as appropriate. Natural gas usage for the proposed project has been estimated as follows:

- New hospital tower – 400,000 square feet at 60 BTU/hr (BTUH)/square foot = 24,000 thousands of British Thermal Units per Hour (MBH)
- New ACC – 300,000 square feet at 50 BTUH/square foot = 15,000 MBH

- New systems genomics/personalized medicine facility – 250,000 square feet at 100 BTUH/square foot = 25,000 MBH. UCHC estimates a peak demand of 556 cubic feet per minute.
- Total = 64,000 MBH

Connecticut Natural Gas provides natural gas to 155,000 customers in central Connecticut. The company is serviced with natural gas by the Algonquin Gas Transmission Company and the Tennessee Gas Pipeline Company, and both companies boast extensive networks of transmission pipelines. As a natural gas reseller, it is believed that Connecticut Natural Gas has sufficient supply to meet additional UCHC demands associated with the proposed construction and renovation project. No major infrastructure improvements are anticipated as a result of this project.

Telephone and Cable Service

AT&T Connecticut provides telephone service, and UCHC utilizes Comcast for cable television. Both utilities will be extended to serve the new buildings, but no major infrastructure improvements will be generated from the new construction.

3.5.5 STEAM AND CHILLED WATER

Under current conditions, the upper campus is serviced by four steam boilers located in Building E, along with multiple chillers and cooling tower for the chilled water system. Other areas throughout the campus are served by localized heating and cooling systems.

Existing process water demands for steam and chilled water at John Dempsey Hospital are estimated to be less than 50,000 gpd. The new hospital tower will utilize public water supply to provide steam and chilled water production. Demands from the new tower are estimated to be on the order of 4,600 gpd. This system will be separate from the existing system in the remainder of John Dempsey Hospital.

It is anticipated that the proposed ACC and new systems genomics laboratories will be served by localized heating and cooling systems. The water demands and wastewater discharges associated with these functions are expected to be modest and have been included in the overall water and wastewater projections.

3.5.6 SUMMARY OF DIRECT AND INDIRECT IMPACTS TO PUBLIC UTILITIES AND SERVICES

Based on the information and analysis in the foregoing narrative, the existing systems coupled with proposed extensions for water, sanitary sewer, storm drainage, electric, natural gas, telephone, cable, and steam services are believed to be sufficient to serve the proposed project without causing significant environmental impact.

Projected water demands and sewage generation are expected to increase over existing levels but are not anticipated to place undue strain on the utility providers.

No impact to the Health Center's electrical service and related consumption is anticipated to occur as a result of the proposed project, or to electrical service in the surrounding area. Similarly, no impact to the natural gas service line and consumption is anticipated or to natural gas service in the surrounding area.

Steam and chilled water demands are currently moderate at the site and are expected to increase slightly as a result of the proposed expansion. However, no significant impact is anticipated due to this project.

Finally, the proposed project is not anticipated to have a negative impact on existing telephone and cable services nor to telephone and cable services in the surrounding area.

3.6 CULTURAL RESOURCES

The land on which construction activities are proposed is highly disturbed, with no known sensitivity to historic or archeologic resources. Neither the State Historic Preservation Office (SHPO) nor the State Archeologist provided comment on the project during the formal scoping period. A letter was sent to SHPO requesting confirmation that the contemplated development areas do not possess cultural resource sensitivity. Response is pending. However, no direct or indirect impacts are anticipated to occur to cultural resources as a result of this project.

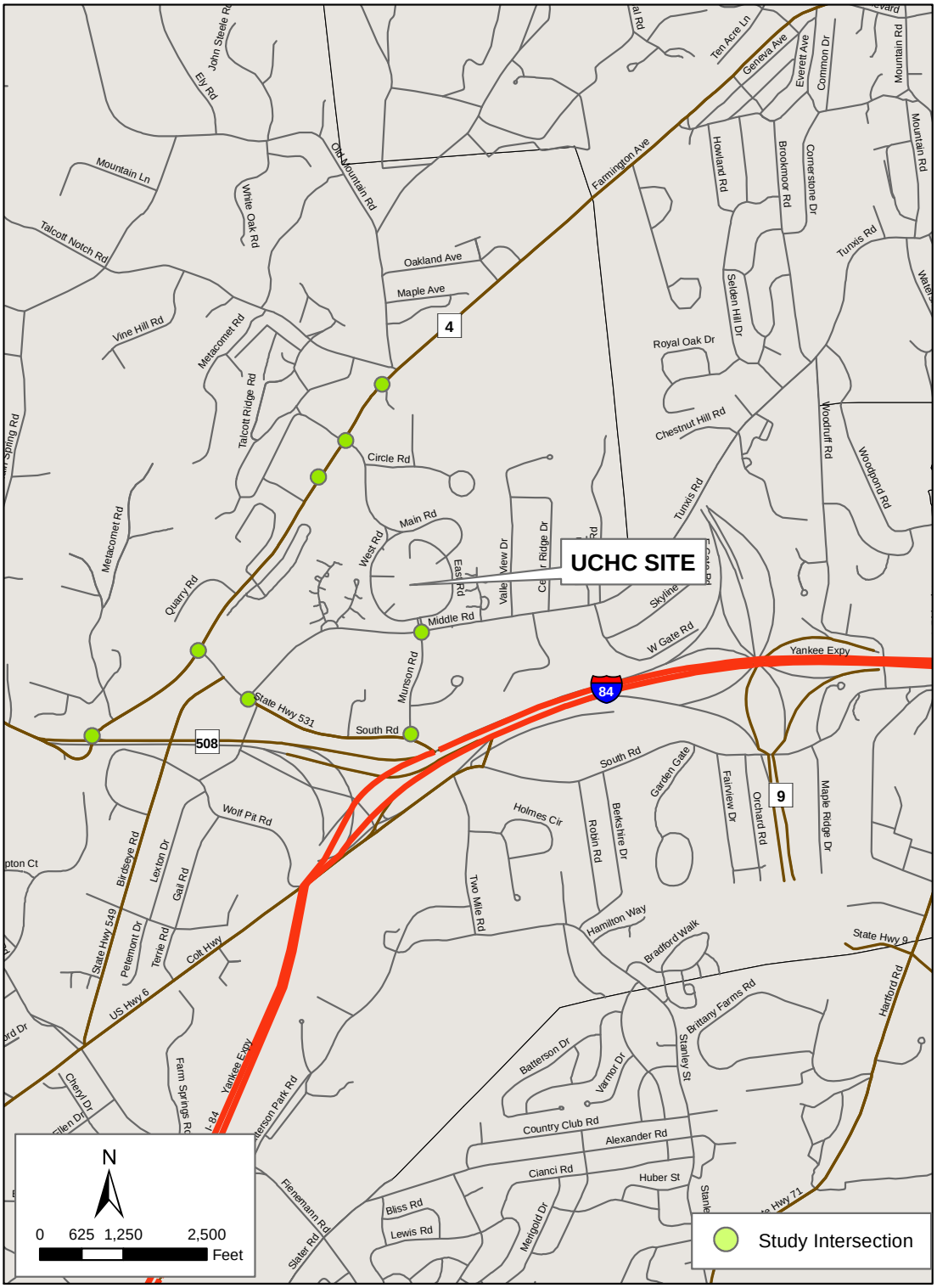
3.7 TRAFFIC AND PARKING

3.7.1 EXISTING ROADWAY NETWORK

A number of roadways within the study area provide access to the UCHC campus. These are identified in Figure 3-7. The main entrance to the Health Center campus is via Farmington Avenue (State Route 4) while secondary access is provided via Middle Road to the south. Students and staff who work in the Academic Building or the Academic Research Building usually enter the site from Middle Road while patients and other staff tend to use the main entrance from Farmington Avenue. A tertiary entrance, which is located near the Dowling North building, is used by staff and patients accessing the two Dowling buildings, and a fourth entrance is located in the American Red Cross complex at the northwest end of campus, which is minimally used for UCHC traffic. A description of major roadways within the study area is presented below.

Farmington Avenue (State Route 4) is a four-lane primary arterial that runs in a north-south direction along the western boundary of the UCHC campus. This roadway is characterized by two travel lanes in each direction, with shoulders and exclusive turn lanes at some intersections. The posted speed limit on this roadway is 40 miles per hour. Farmington Avenue serves as the main access to the UCHC campus. There are currently six traffic signal controlled intersections along the stretch of Farmington Avenue from State Route 508 to Talcott Notch Road. These signals are coordinated in a closed loop system.

Figure 3-7 – Roadway Network



State Route 508 is classified as a collector road running east-west in the vicinity of the Health Center. This roadway is characterized by two travel lanes in each direction and connects directly to the I-84 eastbound and westbound ramps.

South Road (State Route 531) is a two-lane collector roadway that runs east-west along the southern boundary of the UCHC campus. This roadway is characterized by one travel lane in each direction, with shoulders. South Road has a posted speed limit of 35 miles per hour. Land use along South Road is primarily residential.

Middle Road is a two-lane collector roadway running east-west in the vicinity of the UCHC campus. This roadway, which serves as a secondary access to the campus, is characterized by one travel lane in each direction, with shoulders and a sidewalk along its northern edge. Middle Road has a posted speed limit of 35 miles per hour. Land use along this roadway is primarily residential.

3.7.2 EXISTING TRAFFIC CONDITIONS

Understanding existing traffic capacity is important in determining the ability of a specific roadway or intersection to accommodate traffic under various levels of service. Existing traffic conditions were assessed for eight study intersections. These intersections were selected based on their proximity to the project site and location with respect to major routes to and from the Health Center. The study intersections are as follows:

- Farmington Avenue (Route 4) at State Route 508
- Farmington Avenue (Route 4) at South Road
- Farmington Avenue (Route 4) at Driveway (Dowling Buildings)
- Farmington Avenue (Route 4) at UCHC Main Entrance
- Farmington Avenue (Route 4) at American Red Cross Driveway
- South Road at Middle Road
- South Road at Munson Road
- Middle Road at Munson Road

Existing turning movement traffic counts were conducted at the above study intersections during the morning and afternoon peak hours, determined as 7:30 a.m. to 8:30 a.m. and 4:30 p.m. to 5:30 p.m., respectively. The existing traffic flows during the weekday morning and afternoon peak hours are presented in Figures B-1 and B-2 in Appendix B.

3.7.3 EXISTING INTERSECTION CAPACITY ANALYSIS

Existing capacity analysis was conducted for the study intersections. The analysis included a determination of the existing Level of Service (LOS) for each of the intersections based on traffic volumes observed during the morning and afternoon peak hours. The *Synchro* program was used to conduct the capacity analysis. This software package adheres to the methodologies outlined in the *Highway Capacity Manual* (2010) to determine LOS.

LOS is a qualitative measure describing driver satisfaction with a number of factors that influence the degree of traffic congestion. These factors include speed and travel time, traffic interruption, freedom of maneuverability, safety, driving comfort and convenience, and delay. Six levels of service describe flow conditions. The highest, LOS A, describes a condition of free flow, with low volumes and high speeds. There is little or no restriction in maneuverability due to the presence of other vehicles, and drivers can maintain speeds with little or no delay. This occurs when vehicle progression is extremely favorable, and most vehicles arrive during the green phase of a traffic signal.

LOS B represents a stable traffic flow with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane operations.

LOS C, which is normally utilized for design purposes, describes a stable condition of traffic operation. It entails moderately restricted movements due to higher traffic volumes, but traffic conditions are not objectionable to motorists.

LOS D, acceptable for traffic operation in urban environments and during peak hours of traffic flow, reflects a condition of more restrictive movement for motorists. Queues and delays may occur during short peaks, but lower demands occur often enough to permit clearance of developing queues, thus preventing excessive backup. At LOS D, the influence of congestion becomes more noticeable, and longer delays may result from unfavorable vehicle progression.

LOS E is defined as the actual capacity of the roadway or intersection and involves delay to all motorists due to congestion. This is considered to be the limit of acceptable delay. These high delay values generally indicate poor vehicle progression.

The lowest LOS, LOS F, is described as forced flow and is characterized by volumes greater than the theoretical roadway capacity. Complete congestion occurs and, in extreme cases, the volume passing a given point drops to zero. This is generally considered unacceptable traffic operations.

LOS criteria for signalized and unsignalized intersections are defined in the 2010 *Highway Capacity Manual*, published by the Transportation Research Board, National Academy of Sciences.

LOS for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle. These are presented in Table 3-5.

TABLE 3-5
Levels of Service for Signalized Intersections

LOS	Average Stopped Delay Per Vehicle (Seconds)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	> 80

Source: Transportation Research Board, 2010

The LOS criterion for unsignalized intersections is calculated individually for those movements that must yield right-of-way to other higher priority movements at two-way stop control intersections. All-way stop control LOS is calculated for the intersection as a whole. These are presented in Table 3-6.

TABLE 3-6
Levels of Service for Unsignalized Intersections

LOS	Average Stopped Delay Per Vehicle (Seconds)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	> 50

Source: Transportation Research Board, 2010

Intersections graded with a C or better indicate traffic conditions that are "desirable" while a D is considered "acceptable."

Table 3-7 on the following page summarizes the LOS results under existing morning and afternoon peak hour conditions.

The LOS results indicate that the following intersections currently operate at an unacceptable LOS (LOS E or worse) under existing peak hour conditions:

- Farmington Avenue (Route 4) at State Route 508
- Farmington Avenue (Route 4) at American Red Cross Driveway
- Farmington Avenue (Route 4) at Driveway (Dowling Buildings)
- South Road at Middle Road

TABLE 3-7
Existing 2011 Intersection Levels of Service

Intersection	Level of Service	
	A.M. Peak	P.M. Peak
SIGNALIZED		
Farmington Avenue/State Route 508		
Overall LOS	E	C
State Route 508 EB Approach	C	C
State Route 508 WB Approach	F	B
Farmington Avenue NB Approach	D	D
Farmington Avenue SB Approach	C	D
Farmington Avenue/South Road		
Overall LOS	C	B
South Road WB Approach	C	C
Farmington Avenue NB Approach	B	B
Farmington Avenue SB Approach	C	B
Farmington Avenue/UCHC Main Entrance		
Overall LOS	C	D
UCHC Main Entrance EB Approach	D	C
UCHC Main Entrance WB Approach	C	E
Farmington Avenue NB Approach	C	C
Farmington Avenue SB Approach	C	C
South Road/Munson Road		
Overall LOS	B	C
South Road EB Approach	A	C
South Road WB Approach	B	B
Munson Road SB Approach	C	C
UNSIGNALIZED		
Farmington Avenue/American Red Cross Driveway		
American Red Cross WB Approach	F	F
Farmington Avenue SB Left Turn	A	A
Farmington Avenue/Dowling Buildings Driveway		
Main Road WB Approach	F	F
Farmington Avenue SB Left Turn	B	A
Munson Road/Middle Road		
Overall LOS	C	B
Middle Road EB Approach	C	B
Middle Road WB Approach	B	B
Munson Road NB Approach	D	B
Munson Road SB Approach	B	C
South Road/Middle Road		
South Road EB Left Turn	A	A
Middle Road SB Approach	E	D

Note: Pink indicates an unacceptable LOS (LOS E or F).

3.7.4 ACCIDENT HISTORY

Traffic accident statistics for Farmington Avenue, Route 508, and South Road were obtained from the Connecticut Department of Transportation (ConnDOT) accident database for the latest three-year period on record. The information was summarized by location, accident severity, and collision type and is presented in Table 3-8.

TABLE 3-8
Study Area Accidents

Location	ACCIDENT SEVERITY			TYPE OF COLLISION										
				Turn										
	Injury	Property Damage	**Total**	Intersecting	Same Turn	Opposite	Rear-End	Angle	Side-Swipe (same direction)	Head-On	Fixed Object	Back-up	Moving Object	**Total**
Farmington Avenue (State Route 4)	23	120	**143**	9	4	9	76	2	20	0	16	0	7	**143**
State Route 508	11	29	**40**	0	3	1	26	1	5	0	4	0	0	**40**
South Road (State Route 531)	9	24	**33**	6	2	1	19	0	1	0	3	1	0	**33**

Farmington Avenue (State Route 4) – 143 accidents were reported on the segment of Farmington Avenue from Route 508 to Talcott Notch Road. Of the 143 total accidents, approximately 53% were rear-end collisions; 14% were sideswipes; and 11% were fixed object collisions. With respect to accident severity, 75% of the accidents involved property damage while 25% involved injury. There were no fatalities recorded. Most of the accidents, approximately 80%, occurred during daylight hours under no adverse condition. The leading cause of accidents on Farmington Avenue was associated with the driver following too closely (64%) while improper lane change and failing to grant right-of-way together accounted for about 33% of accidents.

State Route 508 – A total of 40 accidents was recorded on State Route 508 from the Route 4 jug handle entrance to the Interstate 84 ramps. Of the 40 total accidents, 65% were rear-end collisions. Approximately 73% of the accidents involved property damage while 27% involved injury. There were no fatalities recorded on this segment of Route 508. Most of the accidents, approximately 65%, occurred during daylight hours under no adverse condition. The leading cause of accidents was associated with the driver following too closely (58%).

South Road (State Route 531) – A total of 33 accidents was reported on the segment of South Road from Farmington Avenue to Munson Road. A majority of the accidents (58%) were rear-end collisions. In terms of accident severity, 73% of the accidents involved property damage while 27% involved injury. There were no fatalities reported. Approximately 78% occurred during daylight hours under no adverse condition. The leading cause of accidents was associated with the driver following too closely (61%).

3.7.5 EXISTING PARKING FACILITIES

Parking on the UCHC campus is currently provided through a number of surface lots and on-street parking. These parking facilities provide parking to staff, students, patients, and visitors to the campus. Based on the parking study completed by Walker Parking Consultants in fall 2011, there are currently 4,614 available parking spaces of which 955 spaces are located at the lower campus, 2,865 spaces at the upper campus, and 794 on the periphery of the campus.

3.7.6 IMPACT EVALUATION METHODOLOGY

The traffic impact of the proposed expansion and renovation project on the UCHC campus was assessed by conducting capacity analysis under future traffic conditions with the planned project in place. Future traffic estimates were developed without and with the expansion project traffic volumes, No-Build and Build, respectively. For this analysis, a 20-year planning horizon was used.

Future No-Build traffic was developed by projecting existing traffic to year 2031 and including site traffic associated with other approved but yet to be built projects in the vicinity of the UCHC campus. These projects include the Farm Glen Office Park Expansion and the Village at Yorkshire development. A review of ConnDOT traffic data from 2003 to 2009 within the study area indicates an annual traffic growth rate of 0.5% per year. The existing intersection peak hour traffic volumes were therefore projected to year 2031 using an annual growth factor of 0.5 % per year. The Future No-Build traffic volumes are presented in Figures B-3 and B-4 in Appendix B.

3.7.7 TRAFFIC GENERATION AND DISTRIBUTION

Anticipated peak hour traffic volumes to be generated by the ACC and the new systems genomics facility were developed based on industry standard statistical data published by the Institute of Transportation Engineers (ITE)[2] while traffic volumes for the hospital bed tower were developed based on traffic growth rate projections from the 2011 UCHC Parking Study conducted by Walker Parking Consultants. This analysis treats the three site development components as mutually exclusive, with conservative assumptions relative to site use. In other words, no "sharing" of traffic volume is accounted for, wherein a doctor might travel from the ACC to the hospital entirely within the campus without exiting and reentering the site on public roads.

[2] *Trip Generation*, Institute of Transportation Engineers, Eighth Edition, 2008.

Table 3-9 indicates the amount of anticipated site traffic. The planned expansion and renovation project is projected to generate approximately 815 new trips (670 entering and 145 exiting) and 880 new trips (210 entering and 670 exiting) during the weekday morning and afternoon peak hours, respectively.

TABLE 3-9
Anticipated Site-Generated Traffic Volumes

Land Use	Size (S.F)	A.M. Peak Hour			P.M. Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Hospital Bed Tower (20 net new beds)		130	10	140	35	120	155
Ambulatory Care Center (215,000 net new square footage)	215,000	390	105	495	150	405	555
New Systems Genomics (140,000 net new square footage)	140,000	150	30	180	25	145	170
TOTAL TRIPS		**670**	**145**	**815**	**210**	**670**	**880**

1. *ACC trips based on ITE Land Use Code 720*
2. *New Systems Genomics Facility trips based on ITE Land Use Code 760*
3. *Hospital Bed Tower trips based on 13% traffic growth rate projection from parking study by Walker Parking*

The estimated directional distribution for the site traffic was based on U.S. Census Bureau travel data, patient zip code data, area travel patterns, and the roadway network. A review of existing travel patterns indicates that approximately 35% of the site traffic is oriented to/from the east; 10% to/from the west; 30% to/from the north via Farmington Avenue; 20% to/from the south via Munson Road; and 5% to/from the south on Middle Road during the morning and afternoon peak hours. The assignment of anticipated site-generated morning and afternoon peak hour traffic volumes is presented in Figures B-5 and B-6, respectively, included in Appendix B.

The site-generated traffic volumes were added to the Future No-Build traffic volumes to develop Future Build traffic volumes. These represent peak hour traffic volumes with the planned project in place. The Future Build traffic volumes are presented in Figures B-7 and B-8 in Appendix B.

3.7.8 FUTURE INTERSECTION CAPACITY ANALYSIS

Capacity analysis under future (2031) peak hour conditions was performed to assess the impact of the expansion project on the adjacent roadway system. The results of the analysis were used to determine the need for improvements. Table 3-10 summarizes the LOS results under future peak hour conditions with and without the project.

TABLE 3-10
Future 2031 Intersection Levels of Service

Intersection	Future (2031) No Build		Future (2031) Build	
	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
SIGNALIZED				
Farmington Avenue/State Route 508				
Overall LOS	F	D	F	F
State Route 508 EB Approach	D	C	D	C
State Route 508 WB Approach	F	B	F	B
Farmington Avenue NB Approach	D	D	E	D
Farmington Avenue SB Approach	C	E	C	F
Farmington Avenue/South Road				
Overall LOS	D	C	E	D
South Road WB Approach	D	C	D	C
Farmington Avenue NB Approach	C	C	E	C
Farmington Avenue SB Approach	C	C	F	F
Farmington Avenue/UCHC Main Entrance				
Overall LOS	C	D	F	F
UCHC Main Entrance EB Approach	E	C	E	C
UCHC Main Entrance WB Approach	D	F	F	F
Farmington Avenue NB Approach	D	C	D	C
Farmington Avenue SB Approach	C	C	E	C
South Road/Munson Road				
Overall LOS	C	C	C	D
South Road EB Approach	A	C	A	D
South Road WB Approach	B	B	C	C
Munson Road SB Approach	C	D	C	E
UNSIGNALIZED				
Farmington Avenue/American Red Cross Driveway				
American Red Cross WB Approach	F	F	F	F
Farmington Avenue SB Left Turn	A	A	A	A
Farmington Avenue/Dowling Buildings Driveway				
Main Road WB Approach	F	F	F	F
Farmington Avenue SB Left Turn	C	A	F	A
Munson Road/Middle Road				
Overall LOS	F	C	F	F
Middle Road EB Approach	D	B	E	B
Middle Road WB Approach	C	B	C	B
Munson Road NB Approach	F	B	F	C
Munson Road SB Approach	C	E	C	F
South Road/Middle Road				
South Road EB Left Turn	A	A	A	A
Middle Road SB Approach	F	E	F	E

The results indicate that all eight study intersections would operate at an unacceptable overall LOS or approach LOS E or worse under future peak hour conditions with the expansion project in place and would therefore require mitigation. It is noted that seven of the eight study intersections would also operate at an unacceptable LOS under future peak hour conditions without the project.

3.7.9 PROPOSED MITIGATION

Given the projections presented in Table 3-10, it is clear that mitigation is warranted to improve intersection operation efficiencies to acceptable levels. A number of mitigation alternatives are available for such purposes, including signalization, lane restriping, signal timing and/or phasing improvements, roadway widening, and provision of designated turning lanes.

While a combination of these mitigation measures is proposed for the study intersections, it should be noted that these measures are preliminary in nature and would therefore require further feasibility analyses to address traffic signal warrants, roadway geometry standards, and property impacts. While a set of mitigation measures to address the identified impacts is set forth below, ultimately, the extent and type of mitigation will be dictated by the ConnDOT through the State Traffic Commission (STC) permitting process. This process may involve analyses of additional intersections beyond the eight study intersections in this EIE. For purposes of the impact analysis, the following mitigation measures are sufficient to offset projected impacts to the LOS at nearby off-site intersections.

It should be noted that this analysis is based on a number of conservative assumptions to demonstrate that impacts can be mitigated. For example, each proposed land use was assumed to generate traffic independent of the other uses. It is likely there will be a number of multipurpose or combined trips. Furthermore, it is likely that as traffic increases there will be some reduction in peaking characteristics. The extent to which these factors affect the requirements for off-site improvements will be investigated in concert with ConnDOT's Office of Inventory and Forecasting.

Farmington Avenue (Route 4) at State Route 508 – Signal timing improvements and roadway widening on the Route 508 westbound approach to provide two channelized right-turn lanes.

Farmington Avenue (Route 4) at South Road – Signal timing improvements and restriping the South Road westbound approach to provide two exclusive right-turn lanes and a single left-turn lane.

Farmington Avenue (Route 4) at UCHC Main Entrance – Signal phasing and timing improvements as well as two exclusive left-turn lanes and a shared through/right turn lane on the UCHC main entrance westbound approach; and two exclusive left-turn lanes, a through lane, and a shared through/right turn lane on the Farmington Avenue southbound approach. The two southbound left turn lanes would require two eastbound receiving lanes on the main driveway.

Farmington Avenue (Route 4) at Driveway (Dowling Buildings) – Traffic signalization and an exclusive left-turn lane on the Farmington Avenue southbound approach.

South Road at Munson Road – Signal timing improvements.

Munson Road at Middle Road – Traffic signalization.

South Road at Middle Road – Traffic signalization.

In addition to the traditional traffic mitigation measures described above, alternative mitigation measures such as ride sharing, carpooling, and shuttling to reduce the traffic entering and leaving the site would also be evaluated. These strategies may reduce the need for some of the physical improvements described above.

Table 3-11 presents the results for the LOS analysis with the above mitigation scenario. Table 3-12 compares future conditions under the No-Build scenario as compared *with* the Build scenario with mitigation.

3.7.10 PARKING DEMAND

A Parking Demand Analysis was recently completed for UCHC by Walker Parking Consultants. The analysis found that the campus has an effective total of 4,341 parking spaces, including spaces out on the periphery. The proposed parking structure in Lot I will net an additional 312 spaces, servicing a need for additional parking near the Clinic Building that has been identified by UCHC. The proposed replacement parking garage at the location of the existing parking deck will result in a net loss of 145 spaces in the upper campus. The 1,250-car parking garage proposed for the new ACC facility will also displace parking spaces (amount dependent on the location of the ACC) but will provide a net increase in available spaces. The campus-wide increase in spaces is believed to be sufficient to satisfy demand at UCHC for at least the next 10 years.

3.7.11 SUMMARY OF DIRECT AND INDIRECT TRAFFIC IMPACTS

The foregoing analysis indicates that deterioration in LOS is anticipated to occur in the future at most of the study intersections with or without the project and will therefore need to be addressed. All eight study intersections will likely require improvements to mitigate the poor future LOS with the project in place. Of the eight intersections, seven intersections will require improvements under future conditions without the project in place.

TABLE 3-11
Future 2031 Intersection Levels of Service with Mitigation

Intersection	Future (2031) Build		Future (2031) Build With Improvements	
	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
Farmington Avenue/State Route 508				
Overall LOS	F	F	C	D
State Route 508 EB Approach	D	C	C	D
State Route 508 WB Approach	F	B	C	C
Farmington Avenue NB Approach	E	D	D	D
Farmington Avenue SB Approach	C	F	D	D
Farmington Avenue/South Road				
Overall LOS	E	D	D	D
South Road WB Approach	D	C	C	C
Farmington Avenue NB Approach	E	C	D	C
Farmington Avenue SB Approach	F	F	D	D
Farmington Avenue/UCHC Main Entrance				
Overall LOS	F	F	C	D
UCHC Main Entrance EB Approach	E	C	D	C
UCHC Main Entrance WB Approach	F	F	C	D
Farmington Avenue NB Approach	D	C	C	D
Farmington Avenue SB Approach	E	C	C	C
South Road/Munson Road				
Overall LOS	C	D	C	D
South Road EB Approach	A	D	A	D
South Road WB Approach	C	C	C	C
Munson Road SB Approach	C	E	C	D
Farmington Avenue/Dowling Buildings Driveway				
Overall LOS	-	-	C	C
Main Road WB Approach	F	F	D	D
Farmington Avenue NB Approach	-	-	D	A
Farmington Avenue SB Approach	-	-	B	C
Farmington Avenue SB Left Turn	F	A	D	B
Munson Road/Middle Road				
Overall LOS	F	F	C	B
Middle Road EB Approach	E	B	D	C
Middle Road WB Approach	C	B	B	C
Munson Road NB Approach	F	C	C	A
Munson Road SB Approach	C	F	A	A
South Road/Middle Road				
Overall LOS	-	-	A	B
South Road EB Approach	-	-	A	B
South Road WB Approach	-	-	A	A
South Road EB Left Turn	A	A	B	A
Middle Road SB Approach	F	E	A	A

TABLE 3-12
Future 2031 Intersection Levels of Service No Build Compared to Build With Mitigation

Intersection	Future (2031) No Build		Future (2031) Build With Improvements	
	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
Farmington Avenue/State Route 508				
Overall LOS	F	D	C	D
State Route 508 EB Approach	D	C	C	D
State Route 508 WB Approach	F	B	C	C
Farmington Avenue NB Approach	D	D	D	D
Farmington Avenue SB Approach	C	E	D	D
Farmington Avenue/South Road				
Overall LOS	D	C	D	D
South Road WB Approach	D	C	C	C
Farmington Avenue NB Approach	C	C	D	C
Farmington Avenue SB Approach	C	C	D	D
Farmington Avenue/UCHC Main Entrance				
Overall LOS	C	D	C	D
UCHC Main Entrance EB Approach	E	C	D	C
UCHC Main Entrance WB Approach	D	F	C	D
Farmington Avenue NB Approach	D	C	C	D
Farmington Avenue SB Approach	C	C	C	C
South Road/Munson Road				
Overall LOS	C	C	C	D
South Road EB Approach	A	C	A	D
South Road WB Approach	B	B	C	C
Munson Road SB Approach	C	D	C	D
Farmington Avenue/Dowling Buildings Driveway				
Main Road WB Approach	F	F	D	D
Farmington Avenue SB Left Turn	C	A	D	B
Munson Road/Middle Road				
Overall LOS	F	C	C	B
Middle Road EB Approach	D	B	D	C
Middle Road WB Approach	C	B	B	C
Munson Road NB Approach	F	B	C	A
Munson Road SB Approach	C	E	A	A
South Road/Middle Road				
South Road EB Left Turn	A	A	B	A
Middle Road SB Approach	F	E	A	A

1. *Pink indicates unacceptable LOS.*
2. *Green indicates LOS is improved over the No-Build alternative.*
3. *Yellow indicates LOS is the same as the No-Build alternative.*
4. *Orange indicates a lower LOS as compared to the No-Build alternative.*
5. *LOS D for signalized intersections requires the driver to wait on average between 35 and 55 seconds.*
6. *The above designations are for peak morning and evening traffic. LOS will be more favorable at non-peak hours.*

3.7.12 SUMMARY OF DIRECT AND INDIRECT PARKING IMPACTS

The parking analysis conducted by Walker Parking Consultants for the ACC and Hospital Bed Tower indicates that parking supply on the campus will be adequate to accommodate these two projects. It is also anticipated that additional parking will be separately provided to accommodate the parking needs of the new systems genomics facility.

The *Parking Demand Analysis* completed by Walker Parking Consultants demonstrates that the campus-wide increase in parking spaces will be sufficient to satisfy demand at UCHC for at least the next 10 years.

3.8 WATER RESOURCES

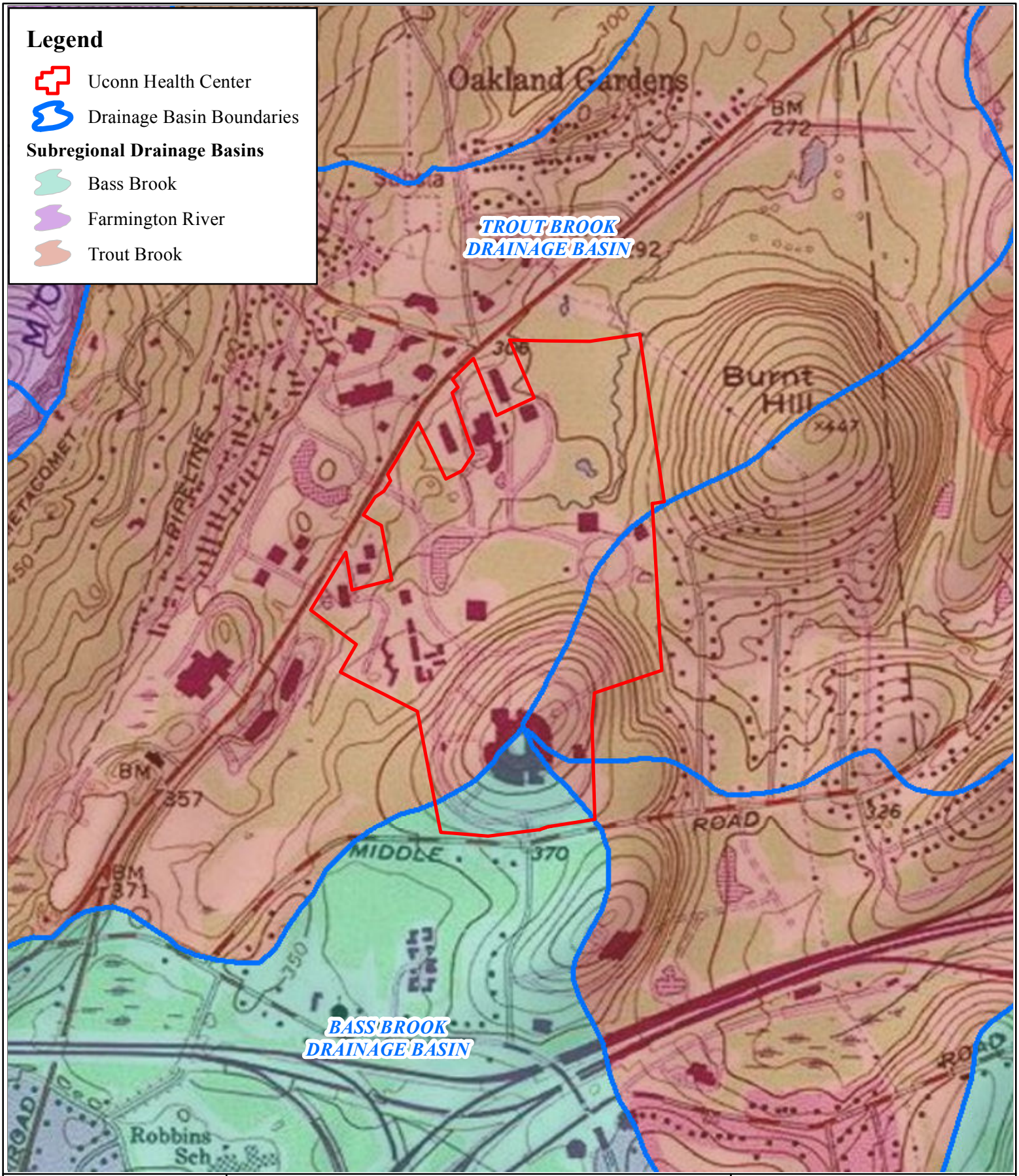
3.8.1 SURFACE WATER RESOURCES

The UCHC campus is located in the Connecticut Main Stem major drainage basin and the Park River regional basin. The majority of the campus lies within the Trout Brook local basin; however, a triangular piece that comprises the southern portion of the site near Middle Road lies within the Bass Brook local basin. Figure 3-8 shows subregional drainage basins.

An unnamed tributary to the MDC's Reservoir No. 1 in West Hartford flows from southwest to northeast across the UCHC campus. The stream is classified as "B/A" throughout its length in the most recent Geographic Information System (GIS) data available from the Connecticut DEEP (February 2010)[3]. Such a classification indicates that the stream may not be meeting the Class A criteria for one or more designated uses, but the long-term goal is achievement of Class A criteria and associated designated uses. Class A streams are indicative of high quality streams and rivers with no point wastewater discharges. The designated uses for a Class A stream include potential public water supply, fishing, swimming, recreation, healthy aquatic habitat, industrial supply, and agricultural use.

A cursory review of the Connecticut DEEP GIS database regarding potential pollution sources was reviewed. The site of the former Town of Farmington Landfill and existing leaf composting facility is located on Quarry Road near the intersection of Route 4 (Farmington Avenue) and South Road. This area is near the headwaters of the unnamed stream that runs through the UCHC campus. In addition, the Stauffer Chemical Company either has or formerly had a cooling water discharge to the stream just upstream of the UCHC property. The combination of these factors may have led to the current Class B/A classification.

[3] The last formal basinwide update of the surface water quality classifications for the Connecticut and South Central Basins was February 1993.



SOURCE(S):
1997 USGS Topographic Map via ESRI
Drainage Basins from CT DEEP

Figure 3-8: Subregional Drainage Basin Map

LOCATION:
Farmington, CT

N

University of Connecticut Health Center EIE

Map By: scottb
MMI#: 1958-58
MXD: H:\1958-58\GIS\Maps\Report\Fig3-8Watersheds.mxd
1st Version: 11/29/2011
Revision: 11/29/2011
Scale: 1 inch = 1,000 feet

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM®
99 Realty Drive Cheshire, CT 06410
(203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com

The 2005 *Environmental Resource Inventory and Plan* prepared for the Town of Farmington included a description of the unnamed tributary (denoted as the "Hartford Reservoir No. 1 Tributary"). Water quality and benthic monitoring was conducted just downstream of Shuttle Road, and all parameters were within recommended limits, with temperatures indicative of a warm-water stream. The authors concluded that the watercourse has the potential to be a significant warm-water and cold-water fishery resource. No pollution-intolerant taxa were recorded, believed to be the result of historical disturbances, poor upstream stormwater management practices, and heavily fragmented riparian zones within the contributing watershed, including but also much broader than the UCHC campus.

The headwaters of Trout Brook lie in wetlands located to the southeast of Circle Drive on the UCHC campus. This stream is classified as "A" throughout its length flowing east to Woodridge Lake, indicative of good water quality as discussed above. While the lower sections of Trout Brook in West Hartford are listed by the Connecticut DEEP as not meeting certain water quality standards on the 2011 *Integrated Water Quality Report*, the headwater section in Farmington upstream of Woodridge Lake was not assessed.

UCHC is served with public water that is drawn from surface water sources that are located in the Farmington River basin. The projected water demand increase related to the proposed project is estimated to be 0.4% of MDC's average daily water demand. Given the large size of MDC's reservoirs, minimal to no impact to surface water reservoirs is expected as a result of this project.

No in-stream alterations are proposed associated with the UCHC facility expansion. Stormwater management is described in the following section.

3.8.2 STORMWATER MANAGEMENT

Stormwater runoff is comprised of excess precipitation that flows over the ground surface and impervious areas to storm drains or watercourses. Its quality will reflect the land uses and surfaces it contacts. The *Conservation and Development Policies Plan for Connecticut* recognizes the expanding significance of nonpoint pollution sources in water quality concerns. In rebuilding or expanding urban infrastructure, the plan recommends incorporating appropriate stormwater management technologies to minimize adverse impacts of runoff on surface or ground waters. For new development, the plan promotes the design and engineering approaches to stormwater handling that minimize impervious cover and incorporation of nonstructural design features and management techniques to renovate runoff.

UCHC completed its Storm Water Management Plan in 1994, and an update is underway. The existing plan identifies erosion, atmospheric deposition, construction materials, manufactured products, plants and animals, and accidental spills and leaks as the principal pollutant sources that could be exposed to stormwater. Note the following:

- The UCHC campus is kept clean of litter and debris by the Facilities Department, greatly reducing the impact of such items into the stormwater management systems.

- The sand/salt pile at the Grounds Building is enclosed by walls and a roof, preventing erosion.

- Vehicle and equipment servicing is done in the garage or off site at approved facilities.

- Chemicals and radioactive materials are delivered to the site in ConnDOT-approved containers and vehicles, and wastes are picked up on a regular basis. No such materials are typically exposed to stormwater.

- Minor erosion has been noted around the site, but such incidents are quickly corrected by UCHC facilities staff. Most commonly, catch basin cleaning solves the issue. Other actions include regrading and seeding, fabric protection, or riprap.

- Cooling water discharges are directed into the sanitary sewer system, not the stormwater system.

- Floor drains at the American Red Cross building and the garage drain to holding tanks that are intermittently pumped, and the floor drain at the Fire Department drains to the sanitary sewer system.

- While some of the parking lots utilize stormwater management and water quality control systems (e.g., Lot N), most do not (e.g., the Lower Campus Research Complex). Thus, this project has the potential to improve stormwater management and water quality at the site by upgrading existing stormwater management infrastructure.

The current emphasis in stormwater management is to try to minimize changes between predevelopment and post-development runoff rates and volumes by utilizing on-site retention and to pretreat discharges to remove total suspended solids, oils, greases, nutrients, pathogens, and floatable debris. For new projects, a goal of 80% removal of total suspended solids from the stormwater discharge is recommended in designing and installing stormwater management measures.

The DEEP's Inland Water Resource Division routinely recommends controls designed to remove sediment and oil or grease typically found in runoff from parking and driving areas. Potential controls include gross particle separators, deep sump catch basins with oil and grease traps, and/or sedimentation basins. DEEP recommends that any catch basins installed in conjunction with paving have deep sumps to trap sediments and hoods to trap oil and grease. If more than one acre of pavement drains to a common discharge point, the DEEP recommends installation of a gross particle separator. Provisions for periodic maintenance are also recommended. While retrofit of the existing campus

stormwater collection system is not proposed, DEEP recommendations will be incorporated into areas of new construction. Specific to the proposed expansion, the following stormwater management elements are proposed:

- The new hospital tower and the new parking garages in the upper campus will be constructed in currently paved areas. The new construction is expected to result in a decrease in impervious area. Stormwater management related to the new hospital tower will include the installation of new catch basins and piping. No attempt will be made to retrofit the large existing area that drains to that system. New catch basins will be equipped with deep sumps, as recommended by DEEP.

- As no additional roads are proposed as part of the upper campus work and the overall area of parking exposed to the elements is not increasing, the only risk of increase in sedimentation would be related to construction impacts. These will be minimized through the use of best management practices for sedimentation and erosion controls.

- The new ACC facility could result in a modest increase in impervious surfaces, and the facility may require a new egress connecting to the terminus of Circle Road. The majority of the impervious surface increase, if in fact an increase occurs, will be related to the new building or parking garage, but note that existing surface parking in Lot N (sanded in winter) will be replaced by the new ACC building. Some of this area will be transferred to the top floor of the parking garage, but the net gain or loss of exposed area is expected to be minimal. As such, additional sedimentation from this area is also expected to be minimal.

- The existing stormwater system in the vicinity of Lot N and the MARB utilizes Vortechnics units for water quality control. The capability of these units and the detention basin to operate effectively will be evaluated in detail during the ACC design phase, and components will be upgraded as necessary.

- The new systems genomics/personalized medicine facility could potentially result in a modest increase in impervious surfaces relative to the layout of the new building, replacement of open lawn area, and for associated surface parking. The existing stormwater management system will be replaced and upgraded to facilitate improved water quality controls leaving this area. Stormwater leaving this area drains to the primary sedimentation pond at the intersection of Main Road and Circle Road. The upgraded stormwater system is expected to mitigate any potential adverse impacts to the unnamed brook.

Stormwater management for parking garages generally involves two separate collection systems designed to treat the runoff from different types of parking areas. Any exposed parking levels will produce a high volume of runoff with relatively low concentrations of pollutants. Runoff from such areas will be directed to the storm sewer system, and the collection system will include controls to remove sediment and oil or grease. A hydrodynamic separator incorporating swirl technology, circular screening technology, or

engineered cylindrical sedimentation technology will be utilized to remove medium to coarse grained sediments and oil or grease. The treatment system will be sized to accommodate the first inch of stormwater runoff. Upon installation, a maintenance plan will be developed to remove sediment and oil or grease.

Interior levels of the garage will produce a low volume of runoff with higher concentrations of pollutants. As such, runoff from interior areas is sometimes directed to the sanitary sewer system, again with appropriate treatment, rather than to the stormwater collection system; however, preliminary discussions with the Town of Farmington have indicated they will prohibit such discharge to the sanitary sewer. Therefore, appropriate treatment will be incorporated into this design. The need for cleaning of the garage will be considered during the design phase, and in no case will floor washwater be directed to a stormwater collection system.

In summary, the existing stormwater system on the upper campus is believed adequate to effectively manage stormwater runoff volumes from the proposed project elements. The stormwater system at the ACC will be studied during the design phase to ensure that the existing stormwater quality controls located in the lower section of Lot N are appropriate for treating stormwater following construction. Upgrades will be included as part of construction if necessary. Finally, the stormwater system in the vicinity of the new systems genomics/personalized medicine will be significantly upgraded or replaced as it does not contain any stormwater quality controls. Overall, the proposed improvements are expected to improve to stormwater quality over existing conditions.

3.8.3 GROUND WATER RESOURCES

Ground water beneath the UCHC property is classified as "GA." Such a classification indicates that the ground water is of a natural quality or suitable for drinking. The designated uses for such water include existing private supply, potential private or public supply, stream base flow, and industrial or miscellaneous uses. No direct or indirect impacts to ground water are expected as a result of the project.

The proposed facilities will be served by public water supply from MDC. MDC utilizes surface water reservoirs to provide water to its customers. As such, there will be no impact to ground water resources due to withdrawals for water supply.

The stormwater management system at UCHC has been designed to reduce peak discharges and pollutant discharges prior to leaving the site. While there may be a modest increase in impervious surfaces as a result of this project, pollutant runoff impacts will continue to be reduced through the use of water quality units in stormwater systems installed or modified as a result of this project. Thus, the opportunity for pollutants to reach detention basins or points downstream and leaching to ground water will be minimized.

The proposed project will utilize existing sanitary sewer connections and will not create any facilities that utilize direct subsurface discharge galleries. UCHC utilizes intensive waste management protocols to ensure that hazardous wastes are properly collected and disposed. Accordingly, no direct impacts to ground water are expected to occur as a result of the proposed project.

3.8.4 SUMMARY OF DIRECT AND INDIRECT IMPACTS TO WATER RESOURCES

The majority of proposed construction at the UCHC campus will occur in areas that are already nearly 100% impervious. Based upon preliminary computations, minimal aggregate increase in impervious surfaces will occur as a result of the facility expansion.

This project provides an opportunity to improve stormwater management and water quality controls at the campus. While substantial upgrades to the stormwater system in the upper campus are not believed to be necessary, stormwater improvements will be needed at the sites of the ACC and the proposed systems genomics/personalized medicine facility. Improvements will also be needed in Lot N. The proposed construction in these areas will take into account necessary stormwater infrastructure upgrades during the project design phase.

Temporary construction impacts have the potential to impact surface water resources, particularly wetlands and the unnamed stream that runs through the northwestern portion of the campus. Proper sediment and erosion controls will be implemented to prevent the uncontrolled runoff of construction dust and debris into the stormwater collection system.

Ground water impacts are not anticipated to occur as a result of the proposed project since public water supply from surface water reservoirs will service the project; no direct discharges to ground water are existing or proposed; and the ability of the stormwater system to mitigate pollutants will be improved.

3.9 FLOOD HAZARD POTENTIAL

3.9.1 EXISTING CONDITIONS

The most recent mapping depicting Special Flood Hazard Areas (SFHAs) in Farmington as defined by the Federal Emergency Management Agency (FEMA) was completed in September 2008. Digital mapping was prepared concurrently with the release of a consolidated Flood Insurance Study (FIS) for all municipalities in Hartford County under the Map Modernization program. Only one stream, the unnamed tributary to the MDC Reservoir No. 1, has a 100-year SFHA. The stream is delineated as Zone A throughout its length upstream of the reservoir. Zone A represents a 1% annual chance ("100-year") flood hazard in areas where flood elevations have not been defined. As such, the flood zone has been established based on approximate methods. The 2008 Hartford County FIS notes that Zone A floodplains in the Town of Farmington are unchanged from the

original FIS published in 1977. Figure 3-9 depicts the FEMA flood zone in relation to the UCHC campus.

There are no reports from UCHC relative to flooding issues at the site and no reports of roads or parking areas flooding or overtopping even during the recent intense storms associated with Hurricane Irene in late August 2011.

3.9.2 PROPOSED DEVELOPMENT

As shown on Figure 3-9, the SFHA on the UCHC property is located in the vicinity of the Dowling South building in the eastern portion of the existing parking lot. Any future development in this area will need to comply with the National Flood Protection Act. No fill can be placed in the floodplain that would result in an increase of one foot of water surface elevation rise during the 100-year event.

Because state funds are involved, this project must be certified as being in compliance with flood and stormwater management standards specified in Section 25-68 of the CGS and Section 25-68h-1 through 25-68h-3 of the RCSA.

State policy promotes long-term nonintensive uses for projects within flood hazard areas, with utilities located to discourage floodplain development. State policy regarding floodplain development is articulated in Section 25-68(b)(4) of the CGS, requiring that a proposed action promote long-term nonintensive floodplain uses and have its utilities located to discourage floodplain development. This policy invokes a higher standard than the engineering standards contained in either the federal or the municipal floodplain regulations.

In order to certify the proposed action, it must be determined to be a nonintensive use of the floodplain. The determination of whether a specific proposal is considered nonintensive requires examination of numerous factors, including the existing state of the floodplain and its natural resources, the types of uses proposed for the floodplain area, the design of the entire proposal and the extent of encroachment into the floodplain, and the availability of alternatives to siting within the floodplain. In order to ensure compliance with state policy, any proposed development must not result in more intensive uses of the floodplain than presently exist.

Intensive floodplain uses have been interpreted by DEEP to include:

- New residential uses within the floodplain
- Any increase in the square footage of office, retail, industrial, or business uses
- Conversion of nonresidential use(s) to residential use

Uses that are classified as intensive would preclude use of state funding unless an exemption was granted. As such, the new systems genomics/personalized medicine facility will be located outside of the FEMA designated floodplain.

SOURCE(S):
2007-2009 Aerial Photograph from Microsoft Virtual Earth via ESRI subscription service
DFIRM floodplain boundaries from FEMA

Figure 3-9: FEMA Floodplain Designations

LOCATION:
Farmington, CT

N

University of Connecticut Health Center EIE

Map By: scottb
MMI#: 1958-58
MXD: H:\1958-58\GIS\Maps\Report\Fig3-9FEMA.mxd
1st Version: 11/29/2011
Revision: 11/29/2011
Scale: 1 inch = 500 feet

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM®
99 Realty Drive Cheshire, CT 06410
(203) 271-1773 Fax: (203) 272-9733
www.miloneandmacbroom.com

Any project that receives state funding requires a Floodplain Management Certificate (FMC) from DEEP. As such, the proposed development will be subject to the FMC process. Any impact to floodplain areas would need to be addressed through that process.

3.9.3 SUMMARY OF POTENTIAL DIRECT AND INDIRECT IMPACTS TO FLOODING

The proposed site for the new systems genomics/personalized medicine facility is in proximity to a FEMA designated Zone A floodplain. Accordingly, any work in that area, including incidental grading, would need to comply with National Flood Protection Act requirements.

3.10 BIOLOGICAL ENVIRONMENT

The biological environment at UCHC varies and consists of a combination of large impervious parking lots/roadways, buildings, maintained landscaping (i.e., lawn) and fragmented upland and wetland forested areas. These environments provide low biodiversity. These biological environments are described below. The biological environment descriptions have been subdivided into the upper campus and lower campus.

3.10.1 VEGETATION

Upper Campus – Vegetation within the upper campus project areas consists primarily of parking lot islands and includes a variety of ornamental vegetation plantings, including Chinese juniper, blue star juniper, and several trees. Maintained lawn areas are also found on the parking lot islands.

Lower Campus Near Existing Lower Campus Research Complex – The lower campus in the area of the existing research complex provides a little more diversity as compared to the upper campus and includes vegetated parking lot islands, maintained lawn areas, forested upland slopes, forested wetlands, and a drainage channel. Forested upland slopes are found east and south of the existing lower campus research area. Vegetation consists of Norway spruce, eastern white pine, red oak, white oak, pin oak, sugar maple, eastern hophornbeam, American hornbeam, white birch, black birch, common witch hazel, spicebush, Christmas fern, common wood aster, poison ivy, and Virginia creeper. Sunnier areas have an understory of autumn olive and goldenrod.

A forested wetland is located between the Kevin Dowling South building and the lower campus research area. The wetland vegetation consists of red maple, American elm, American hornbeam, crabapple, spicebush, common winterberry, northern arrowwood, shiny buckthorn, sensitive fern, New York fern, and poison ivy. Areas with more sun are vegetated with purple loosestrife, goldenrods, tussock sedge, soft rush, lurid sedge, and other sedge species.

Lower Campus Near Existing Medical Arts and Research Building – The vegetation found within near the MARB consists of maintained lawn, meadow slopes, forested upland slopes, forested wetlands, and a stormwater management basin. The meadow slopes support a variety of plants including orchard grass, little blue stem, goldenrods, common milkweed, evening primrose, blackberry, staghorn sumac, and asters. The forested upland slopes located to the south and east of the MARB support black birch, red maple, eastern hemlock, eastern hophornbeam, American beech, American hornbeam, spicebush, shadblow, maple leafed viburnum, northern arrowwood, Christmas fern, goldenrod, common wood aster, poison ivy, and Virginia creeper. Many of the eastern hemlocks are dying or are already dead. Downed hemlocks are numerous along this slope.

A forested wetland is located to the east of the forested upland slopes and to the south of the Circle Road terminal loop. This wetland consists of red maple, yellow birch, black willow, spicebush, common winterberry, northern arrowwood, silky dogwood, skunk cabbage, tussock sedge, and a variety of sedges and rushes.

The stormwater basin located to the northwest of Lot N and northeast of the MARB supports an emergent marsh wetland community consisting of broad leafed cottontail, soft stem bulrush, woolgrass, soft rush, and duckweed.

In developing a landscaping plan for the campus, only native species or non-invasive ornamental species will be used. Section 22a-381 of the CGS established the Invasive Plants Council, which publishes and updates a list of plants considered to be invasive or potentially invasive. Invasive plants are nonnative or exotic plants that were introduced by human activity and quickly established. Many nonnative plants are well known agricultural or horticultural species. Most of these do not escape cultivation or have minimal impacts on natural communities if they do spread. Invasive species rapidly disperse and establish, displacing native plants and altering ecological processes like fire occurrence and nutrient cycling. Due to their rapid growth, efficient means of seed dispersal, and tolerance of a wide range of environmental conditions, invasive plants out-compete with native species for sunlight, nutrients, and space. Species on this list will not be utilized in landscaping. Section 22a-381c prohibits state agencies from purchasing such species listed by the council.

3.10.2 INLAND WETLANDS AND WATERCOURSES

Upper Campus – There are no inland wetlands and/or watercourses within the upper campus project areas.

Lower Campus Near Existing Lower Campus Research Complex – A forested wetland system was found between the lower campus systems genomics/personalized medicine facility site and the Kevin Dowling South building. The wetland is classified as a palustrine forested wetland and consists of silty soils. The wetland hydrology is supported by ground water breakout and stormwater runoff from adjacent uplands. The

wetland is relatively flat and slopes slightly from south to north. Surface water runoff from this wetland is collected within a riprap drainage swale located between the lower campus research area and the Kevin Dowling South building and then is conveyed into an unnamed brook to the north. The wetland is fragmented by existing campus buildings and the neighboring residential community. The wetland does not support a vernal pool or a special wetland community. It does, however, provide limited functions and values, including localized wildlife habitat and nutrient removal.

Another wetland system is located west of the Kevin Dowling South building, and this wetland is classified as a palustrine forested and scrub shrub wetland system. The canopy is more open within this system as compared to the wetland described above. Vegetation is similar to the previous wetland with additional species including green ash, highbush blueberry, silky dogwood, multiflora rose, *Phragmites,* woolgrass, cinnamon fern, and broad leaved cattail. This wetland system is more diverse, and hydrology is supported by ground water breakout, stormwater runoff from adjacent uplands, and periodic flooding from the unnamed watercourse. The wetland does not support a vernal pool or a special wetland community. It does provide limited functions and values, including localized wildlife habitat, nutrient removal, sediment/toxicant removal, and floodflow attenuation.

Lower Campus Near Existing Medical Arts and Research Building – Some of the wetlands located near the MARB site were described under the vegetation section (Section 3.10.1); however, additional wetlands occur in the general vicinity of the MARB, and these are described below.

Additional forested wetlands are found northwest of the existing MARB parking lot and downstream of the stormwater management basin. This wetland system consists of red maple, spicebush, common winterberry, highbush blueberry, northern arrowwood, skunk cabbage, tussock sedge, sensitive fern, cinnamon fern, and royal fern. The disturbed fringes of the wetland support broad leafed cattail, soft rush, and woolgrass.

A pocket of standing water was observed in early November 2011 at the base of the forested upland slope near the driveway of the Green Building off the southwestern part of the terminus of Circle Road. This pocket of standing water was approximately 35 feet in diameter with water depths ranging from three to 12 inches in depth. Facultative and nonfacultative wetland vegetation was found growing within and around this small depressional pocket. Further investigation of this area should be performed if the project moves toward this location.

Downstream Wetlands – In 2005, the Town of Farmington completed an *Environmental Resource Inventory and Plan*, which included the identification of critical and unique wetlands within town. According to the plan, a wetland designated as Wetland 26 supports a vernal pool. The wetland is located downstream of the lower campus. It is described as a palustrine forested wetland and has perennial water flowing through it. It is colonized by a variety of native and nonnative vegetation. In addition, the wetland is

located within a DEEP Natural Diversity Database (NDDB) polygon. The state-listed special concern specie the blue-spotted salamander has been observed within this wetland system. The wetland provides several important functions and values including biodiversity, flood flow attenuation, nutrient removal, fish habitat, and endangered species habitat. The stormwater drainage system following treatment from both the upper campus and lower campus eventually discharges to this wetland system.

No significant direct wetland impacts are expected to occur as a result of this project; however, small areas of wetland are located in close proximity to a number of project elements. As part of the project design phase, existing wetlands and watercourses at the site will be delineated by a certified soil scientist, and their functional values will be further evaluated. The design process will attempt to avoid impacts to regulated areas. If impacts do occur, they are anticipated to be minimal. Consideration will be given to mitigating any unavoidable impacts through the establishment of buffer areas to further protect wetlands and watercourses.

Strict erosion and sediment controls will be employed during construction. The *Connecticut Guidelines for Soil Erosion and Sediment Control* prepared by the Connecticut Council on Soil and Water Conservation in cooperation with the DEEP will be consulted in the selection and design of appropriate control measures.

3.10.3 WILDLIFE

Upper Campus – The upper campus project area does not provide any important wildlife habitat due to land use types as described in the previous subsection.

Lower Campus – The lower campus project areas offer greater habitat diversity and opportunities to support localized urban wildlife species. Although the forested areas are relatively fragmented, they are large enough to support wildlife species such as white tailed deer, common raccoon, grey squirrel, eastern chipmunk, white footed mouse, garter snake, grey tree frog, American robin, northern cardinal, song sparrow, northern mockingbird, black capped chickadee, tufted titmouse, blue jay, and broad winged hawk. The fragmented habitat areas do not likely support any endangered, threatened, and/or special concern species, and none have been observed associated with numerous field visits.

The wetlands found bordering the MARB area provide more diversity for wildlife species because of the various wetland community types in existence, including palustrine forested, scrub shrub, and emergent marsh.

3.10.4 SPECIES OF SPECIAL CONCERN

A request for a NDDB review was sent to the Connecticut DEEP in August 2011. DEEP responded by letter with a preliminary determination dated August 22, 2011 stating that the state records indicate that no extant populations of federal or state endangered,

threatened, or special concern species are located in the vicinity of the project areas. A new NDDB polygon appeared on the UCHC site in the July 2011 NDDB shapefile (the December 2010 shapefile was used for the August 2011 letter since the July release was not released until mid August). A new NDDB request for all of the potential project areas was submitted, with a response from Connecticut DEEP on November 1, 2011. A copy is included in Appendix A.

Based on its preliminary review, the NDDB has determined that there are no extant populations of federally listed endangered or threatened species or species listed by the state pursuant to section 26-306 of the CGS as endangered, threatened, or special concern in the project area. NDDB information includes all information regarding critical biologic resources available at the time of the request. This information is a compilation of data collected over the years by the Department of Environmental Protection, Bureau of Natural Resources and cooperating units of DEEP, private conservation groups, and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. More detailed reviews may be conducted as part of any subsequent environmental permit applications submitted to the DEEP for the proposed site.

3.10.5 FISHERIES

The unnamed perennial watercourse located west of the Kevin Dowling South building and the existing stormwater detention ponds on site may support a warm-water fishery. It is highly unlikely that either supports significant populations of fish. The MDC reservoir located downstream as well as Trout Brook and its associated ponds are likely more productive fisheries habitats. These areas will be protected through the use of proper soil and erosion controls during construction and improvements in stormwater management associated with the proposed project.

3.10.6 SUMMARY OF DIRECT AND INDIRECT IMPACTS TO BIOLOGICAL RESOURCES

Upper Campus – Within the upper campus, the proposed project elements will have no significant impact on vegetation, wetlands, watercourses, species of concern, and/or fishery habitats.

Lower Campus – The only identified potential direct wetland impacts would be located in the lower campus. The design will strive to avoid wetland impacts and, if impacts are unavoidable, they will be minimized and/or mitigated through the design process. Given that the proposed facility expansion will result in minimal increases in impervious coverage and only limited wooded, wetland, or wild grassland areas will need to be cleared to support new construction, it is unlikely that this project will impact any species of special concern. Construction areas lying within a NDDB polygon will be field checked by a certified biologist prior to construction to determine the presence of any species of special concern.

Should the pocket of standing water near the driveway to the Green Building near the MARB be delineated as a wetland, then the proposed project elements in the vicinity of Lot N and the MARB have the potential to impact this wetland; however, the goal will be to avoid all wetland impacts.

Indirect impacts to wetlands will be minimized during this project. The updates to the Stormwater Management Plan protocols as well as the LEED certification requirements require construction soil and erosion controls, runoff controls, and the minimization of stormwater runoff and pollutant concentrations.

3.11 PHYSICAL ENVIRONMENT

3.11.1 TOPOGRAPHY

Elevation at the UCHC campus varies. The southern end of the site contains the upper campus, including the existing hospital tower. The development sits on a large hill with a maximum elevation of 440 feet. The topography quickly drops moving north across the site, with the majority of the northern campus being relatively flat at around 300 feet. The slope leading down from the upper campus is generally 15% or less. No significant changes in topography are proposed beyond minor grading in the immediate vicinity of the proposed structures.

3.11.2 BEDROCK GEOLOGY

According to the 1985 Bedrock Geologic Map of Connecticut, UCHC is underlain by two bedrock formations. The northern, central, western, and southwestern portions of the site are underlain by Holyoke Basalt, defined as a dark-gray, orange- to brown-weathering basalt (traprock). The eastern and southeastern portions of the site are underlain by the East Berlin Formation, a reddish-brown silty shale.

No mapped fault lines lie beneath UCHC. A pair of high-angle faults believed to have been generated during the Jurassic period strikes southwest to northeast along the eastern base of Talcott Mountain, approximately 1,500 feet to the west of the project area. An additional high-angle fault believed to have been generated during the Jurassic period also strikes southwest to northeast approximately 1,500 feet to the east of the project area. These faults are believed to be inactive. No interaction with bedrock geology will occur as a result of the proposed facility expansion.

3.11.3 SURFICIAL GEOLOGY

The UCHC campus contains moderately and well drained soils, with poorly and very poorly drained soils associated with limited wetland soils and watercourses. The soils in the project area are mapped as Urban Land and Udorthents-Urban Land Complex. These soils have been influenced by urban activities such as site development, filling, grading, and the like such that the original soil type cannot be ascertained. The soils in the lower

campus are considered to be well drained while the soils in the upper campus are generally unrated in terms of drainage.

Surficial materials on the site are mapped on the 2005 *Quaternary Geologic Map of Connecticut* as being till in the western and northern portions of the site and thick till in the remainder of the site. This till is generally less than 50 feet thick throughout most of the site but is greater than 50 feet thick beneath the UCHC upper campus.

3.11.4 SUMMARY OF DIRECT AND INDIRECT IMPACTS TO THE PHYSICAL ENVIRONMENT

Degradation of bedrock geology, surficial geology, and soil geology is extremely unlikely. The surficial geology is mapped as thick till or till, with soils that are predominantly mapped as urban land, with other areas being mapped as lodgement till. No significant impacts are anticipated to occur relative to topography, bedrock geology, or surficial geology as a result of this project.

3.12 AIR QUALITY

3.12.1 AIR QUALITY STANDARDS

The Federal Clean Air Act was passed by Congress in 1970 and signed into law by former President Nixon. It was last amended in 1990. This act requires the Environmental Protection Agency (EPA) to ensure that all Americans have safe air to breathe by (1) reviewing the public health standards for six major air pollutants every five years; (2) updating the standards as necessary to "protect the public health with an adequate margin of safety" based on the most recent studies available; and (3) consider only the public health, not the cost of compliance, when setting air quality standards.

In an effort to achieve the Clean Air Act goals, the EPA promulgated primary and secondary national ambient air quality standards (NAAQS) in 1971 for six pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), and particulate matter smaller than 10 micrometers in diameter (PM_{10}). Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings. The NAAQS pollutants and standards as updated through June 2010 are presented in Table 3-13.

The university is a Title V source (permit number 098-0029-TV) located in an ozone nonattainment area as defined in the RCSA Section 22a-174-1(98).

TABLE 3-13
National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards
	Level	Averaging Time	
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour[1]	None
	35 ppm (40 mg/m^3)	1-hour[1]	
Lead	0.15 µg/m^3 [2]	Rolling 3-Month Average	Same as Primary
	1.5 µg/m^3	Quarterly Average	
Nitrogen Dioxide	53 ppb [3]	Annual (Arithmetic Mean)	Same as Primary
	100 ppb	1-hour[4]	None
Particulate Matter (PM_{10})	150 µg/m^3	24-hour [5]	Same as Primary
Particulate Matter ($PM_{2.5}$)	15.0 µg/m^3	Annual[6] (Arithmetic Mean)	Same as Primary
	35 ug/m^3	24-hour[7]	
Ozone	0.075 ppm (2008 standard)	8-hour[8]	Same as Primary
	0.08 ppm (1997 standard)	8-hour[9]	
	0.12 ppm	1-hour[10]	
Sulfur Oxides	0.03 ppm	Annual (Arithmetic Mean)	0.5 ppm over 3-hours [1]
	0.14 ppm	24-hour[1]	
	0.075 ppm [11]	1-hour	None

[1] Not to be exceeded more than once per year.
[2] Final rule signed October 15, 2008.
[3] The official level of the annual NO_2 standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.
[4] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective January 22, 2010).
[5] Not to be exceeded more than once per year on average over three years.
[6] To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.
[7] To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35. µg/m^3 (effective December 17, 2006).
[8] To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm (effective May 27, 2008).
[9] (a) To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
(b) The 1997 standard – and the implementation rule for that standard – will remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.
(c) EPA is in the process of reconsidering these standards (set in March 2008).
[10](a) EPA revoked the 1-hour ozone standard in all areas, although some areas have continuing obligations under that standard ("anti-backsliding").
(b) The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.
[11]Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

Source: DEEP Bureau of Air Management NAAQS (2010)

The *Conservation and Development Policies Plan for Connecticut* recognizes that Connecticut has seen major improvements in air quality over the past 20 years. However, additional effects of air pollution are being identified, and new concerns are emerging that will require greater control efforts. Balancing air quality gains with the costs of such controls and the ability to provide for economic development is a critical planning concern. A list of the policies and strategies for air quality from the plan follows.

- Seek to attain National Ambient Air Quality Standards by the applicable deadlines with emphasis on cost-effective strategies and effective enforcement.

- Develop strategies to achieve and maintain healthy air quality that will enable and foster economic development within the urban areas of the state as designated within this plan.

- Foster transportation and development plans and projects that promote attainment and maintenance of healthy air.

- Establish and maintain standards that will protect citizens from the dangers of hazardous air pollutants and integrate monitoring and regulation of such pollutants into air quality enforcement activities.

- In order to reduce the risk of global climate change, seek to reduce statewide carbon dioxide emissions to 1990 levels by 2010 and to reduce further where technically and economically feasible. Also seek to reduce emissions of other substances that contribute to global warming.

3.12.2 EXISTING AND PROPOSED AIR EMITTING EQUIPMENT

UCHC utilizes a variety of air emitting equipment, including the following:

- Fume hoods from the clinical buildings and various laboratories
- HVAC systems
- Stacks from the boilers in the hospital
- Generators for emergency power
- Vehicles (including emergency and facilities vehicles)

UCHC utilizes boilers to heat John Dempsey Hospital. Building L has two generators, and Building E has three, with a fourth proposed to come online as part of the proposed project. The boilers utilize natural gas and Number 2 fuel oil and are registered with the Connecticut DEEP for year-round use. These boilers will be utilized to pump steam into the new hospital tower.

Two emergency generators are available in Building A, one in Building D (the Administrative Services Building), one in Building E, and one in Building F. Three are registered for year-round use while the remaining two can be used less than two weeks per year. The existing generators utilize diesel fuel. Several of the diesel generators will

be replaced with natural gas-fired generators as part of the project, and they will backfeed into Building H and the new hospital tower. These generators are expected to produce fewer emissions than the existing generators. At least two additional gas-fired generators are proposed for the new hospital tower; these will need to be permitted through the Connecticut DEEP.

The remaining buildings on the UCHC campus utilize HVAC systems for heating and cooling, and no significant impacts to air quality occur from the use of such equipment.

It is likely that the new systems genomics/personalized medicine facility will utilize fume hoods to vent chemical vapors into the atmosphere. Any pollutant-emitting equipment will be permitted through the Connecticut DEEP in accordance with State of Connecticut regulations.

The proposed construction and renovation project will provide for increased traffic to the campus each day, resulting in an increase in vehicle emissions at the site. In addition, the expanded facilities will require additional UCHC vehicles to be mobilized. Vehicular emissions are a necessary side effect of business; however, the increased emissions are expected to have a minimal impact on air quality.

Regarding the renovation aspect of the project, areas to be disturbed must be inspected for the presence of asbestos-containing materials prior to demolition. Any abatement project or the removal and disposal of such material must conform to federal and state regulations. These include 40 CFR 61, Subparts A and M and section 19a-332a-1 through 19a-332a-16 of the RCSA. The disposal of material containing asbestos requires the approval of the Waste Engineering and Enforcement Division pursuant to section 22a-209-8(i) of the RCSA. Proper disposal technique requires that the material be bagged and labeled and placed in an approved secure landfill.

3.12.3 CONSTRUCTION-RELATED ACTIVITIES

Primary short-term air quality concerns relate to construction activities and their potential to generate fugitive dust and mobile source emissions. Such sources of dust are attributed to construction vehicle disturbance during hauling, loading, dumping, and bulldozing on any areas of the proposed development. Meteorological conditions and the intensity of the activities as well as soil moisture content also govern the extent to which particles will become airborne.

Off-site tracking occurs when residual soil particles are displaced from construction sites onto higher traffic roadways and then become both airborne and waterborne. These measures will also control dust from exposed soil or gravel areas to further minimize airborne particulate matter. However, wind erosion is not anticipated to be a large mobilizer of dust on site since the area is presently well vegetated and underplayed by soils of a stony nature.

Various methods of controlling fugitive dust include the use of water or wetting agents on exposed soil and gravel areas, periodic sweeping and daily rinsing of truck tires, and proper maintenance of portable generators, on-site machinery, and vehicles. Additionally, the following best management practices will be incorporated as appropriate in the construction phase of this project:

- Minimization of exposed erodible earth area
- Stabilization of exposed earth with grass, pavement, or other cover as early as possible
- Application of a stabilizing agent to the work areas and haul roads
- Covering, shielding, or stabilizing stockpiled material as necessary
- Use of covered haul trucks
- Rinsing construction equipment during the incidental transport of soil from unpaved to paved surfaces to minimize drag-out

Even well-maintained trucks and other construction equipment typically emit small amounts of pollutants such as nitrogen oxides, sulfur oxides, and carbon monoxide related to internal combustion or diesel engines. Proper maintenance of portable generators, on-site machinery, and vehicles is, thus, important to reduce the potential for higher smoke emissions associated with improperly operating equipment. Contractors will be responsible for maintaining all construction equipment and will be required to comply with the university's *Environmental, Health, and Safety Policies, Regulations, and Rules for Construction, Service, and Maintenance Contractors* manual dated February 18, 2010.

3.12.4 SUMMARY OF DIRECT AND INDIRECT IMPACTS TO AIR QUALITY

While overall pollutant emissions are expected to increase as a result of this project, minimal impacts are expected to air quality. UCHC will continue to act in accordance with its air quality permits as administered by the DEEP and will pursue permits accordingly in association with the new construction and renovation project.

Air pollution control devices on construction equipment and other forms of controls will be implemented by contractors to reduce the impact from fugitive dust emissions, and proper phasing of construction will minimize the length of time that soil remains exposed to wind and water. Activities will be conducted in accordance with proper protocols and regulations, and no washings will be directed to storm drainage.

3.13 NOISE

3.13.1 EXISTING ENVIRONMENT

Section 22a-69 of the CGS gives the Commissioner of Environmental Protection the authority to develop, adopt, maintain, and enforce a comprehensive statewide program of noise regulation, including:

- Controls on environmental noise through the regulation and restriction of the use and operation of any stationary noise source
- Ambient noise standards for stationary noise sources that, in the commissioner's judgment, are major sources of noise when measured from beyond the property line of such source
- Consultation with state and local governmental agencies when such agencies adopt and enforce codes, standards, and regulations dealing with noise insulation and abatement for any occupancy or class of occupancy
- Controls on airport and aircraft noise to the extent not preempted by federal law

Sections 22a-69-1 to 22a-69-7.4 of the RCSA set forth the statewide program of noise regulation. The UCHC is categorized as a Class B Land Use. The Class B Land Use category includes retail trade, personal business and legal services, educational institutions, government services, agricultural activities, and lands intended for such commercial or institutional uses. The regulations indicate that no person in a Class B noise zone shall emit noise exceeding the levels stated in Table 3-14.

TABLE 3-14
Class B Emitter to Designated Receptor

C	B	A/Day	A/Night
62 dBA	55 dBA	55 dBA	45 dBA

Note: dBA = A-Weighted Decibels

Levels emitted in excess of values listed above are considered to be excessive noise.

While no site-specific noise monitoring data has been collected for the proposed project, site observations and existing land uses are coincident with noise levels well below the levels indicated in Table 3-14.

3.13.2 PROPOSED NOISE GENERATORS AND RECEPTORS

The proposed facility expansion must comply with Connecticut's Noise Regulations contained in section 22a-69-1 through 22a-69-7.4 of the RCSA as well as with any local

noise regulations. Potential sources of noise, such as HVAC equipment, will be sited away from sensitive receptors, and appropriate shielding will be provided.

Significant noise-emitting equipment on site is currently associated only with helipad use. The proposed new hospital tower, ACC, and systems genomics/personalized medicine facility will generate minimal noise consistent with current land uses.

During the construction period, continuous as well as intermittent (or impulse) noise will be experienced in the immediate project vicinity, which could potentially be perceived to be intrusive, annoying, or discomforting to those in close proximity. This noise will be generated by construction equipment, including jack hammers, rock drills, and other pneumatic tools that emit strong penetrating percussive sounds, and by the daily movement of dump trucks, loaders, backhoes, and other heavy equipment to, from, and on the construction site.

Table 3-15 provides typical noise emission levels in A-weighted decibels (dBA) 50 feet from construction equipment. For comparison, everyday noise levels within urban environments range from about 60 to 80 dBA (*Transit Noise and Vibration Impact Assessment*, DOT-T-95-16, April 1995).

TABLE 3-15
Noise Emission Levels From Construction Equipment

Construction Equipment	***Noise Level (dBA) 50 Feet From Source***
Air compressor	81
Backhoe	80
Bulldozer	85
Generator	81
Jackhammer	88
Loader	85
Pneumatic tool	85
Rock drill	98
Dump truck	85

Source: DOT, 1995

In general, noise levels are reduced by six dBA for each doubling of distance from a noise source. Thus, a dump truck with a noise level of 85 dBA at 50 feet will have a noise level of 79 dBA at 100 feet, 73 dBA at 200 feet, 67 dBA at 400 feet, 61 dBA at 800 feet, and so forth. Buildings and other barriers located between a noise source and a receptor further reduce the intensity of construction noise.

Given the distance between the proposed construction and sensitive noise receptors, no significant construction-related noise impacts are expected.

3.13.3 SUMMARY OF DIRECT AND INDIRECT IMPACTS TO NOISE

Temporary noise impacts associated with the construction of the new facilities are anticipated during construction. The proposed construction period will span several years. The majority of construction activities will occur in the daylight hours to minimize noise impacts. Interior work, such as many types of renovations, could be completed at night with minimal noise pollution. Following construction, there will be no significant environmental noise impact generated by the proposed project.

3.14 SOLID WASTE AND HAZARDOUS MATERIALS

3.14.1 EXISTING ENVIRONMENT

As a hospital, UCHC generates solid waste, medical waste, and hazardous waste. UCHC has a set of "Universal Waste Procedures" (last revised October 2002) for collection and disposal of common hazardous materials, including batteries, pesticides, thermostats, lamps, and used electronics. The UCHC Facilities personnel are involved to some degree with collection of each type of item.

UCHC is currently registered as a "Large Quantity Generator" with the EPA and the Connecticut DEEP. As such, UCHC is mandated to have an active waste minimization program. The UCHC document entitled "RCRA Waste Minimization and Recycling Initiatives at the Health Center" (last revised December 2009) outlines UCHC's waste minimization program. In particular, this document outlines several programs aimed at minimizing the quantities of hazardous waste generated and reducing potential worker exposure:

- Mercury elimination efforts.
- Program for recycling used electronic waste.
- Replacement of ethylene oxide (a hazardous air pollutant) with a Sterrad Plasma Hydrogen Peroxide sterilizer as a disinfectant for surgical equipment.
- The purchase of a formalin recycling unit to reduce waste volumes of this chemical in the Anatomic Pathology Department.
- Reduction of toluene-based liquid scintillation fluids for radioactive materials assay.
- Encouraging the reduction and or elimination of RCRA-listed hazardous chemicals in conjunction with radioactive materials.
- Collection of discarded or expired pharmaceuticals from the pharmacy and consolidating them to reduce waste volume.
- Replacement of chloroform with Orange Solvent for endodontic treatments.
- Bulking chemotherapy waste.
- Plans are underway to explore the possibility of recycling ethanol and xylene generated in the Dermatology Department.
- The introduction of a Chemical Redistribution Program for unexpired/unopened chemicals that are to be discarded.

- Operation of silver recovery units to reduce waste volumes, and replacement of x-ray systems with digital imaging systems.
- Battery collection and recycling program.
- Facilities staff dedicated to the replacement and collection of fluorescent bulbs.
- Over 100 recycling receptacles for paper recycling.
- Freon recovery units for servicing HVAC and other equipment.

UCHC has a policy that requires all materials classified as "hazardous materials" by the U.S. Department of Transportation and/or the State of Connecticut to be transported in approved containers and in compliance with all transportation regulations. The UCHC Office of Research Safety oversees import and export of hazardous materials from the campus.

UCHC has four underground fuel storage tanks located on the campus. These tanks were installed between 1989 and 1997. Three 15,000-gallon tanks lie beneath Lot C while a 30,000-gallon tank is in the basement of Building E. Each tank holds No. 2 fuel oil for the emergency generators and the boilers.

3.14.2 PROPOSED SOLID AND/OR HAZARDOUS WASTE GENERATORS

Solid waste generated by the new facilities is expected to be commensurate with existing site uses and generation. The exact level of increase will not be known until all facilities are built and operational. Specific usage of hazardous materials at any of the proposed facilities has yet to be quantified. However, import and export of hazardous materials and disposal of all wastes will continue to be performed in accordance with UCHC policies by suitable contractors.

Two 25,000-gallon aboveground storage tanks are proposed to hold fuel for the new emergency generators proposed for the new hospital tower. Emergency generation for the new systems genomics facility may require use of ULS diesel fuel storage tanks to be installed either above or below ground. These will be installed in accordance with State of Connecticut regulations.

Contractors and UCHC personnel will be required to comply with the UCHC plan for waste minimization and perform proper handling of hazardous materials, including providing proper notification to UCHC when such materials are used. Contractors will be responsible for disposal of hazardous waste materials unless prior arrangements are made with UCHC staff. It is not expected that significant amounts of hazardous materials will be used in construction.

3.14.3 CONSTRUCTION AND DEMOLITION RELATED WASTE

A certain amount of construction and demolition related waste will be generated by the project. While exact amounts of construction waste cannot be calculated at this time, the square footage of demolition impact is presented to provide a sense of scale for the demolition quantities involved.

Multiple demolition efforts will be required prior to construction on the upper campus. Minimal demolition will be required to construct the proposed parking garage above Lot I. Demolition waste will likely include asphalt and remnants of electrical wiring and storm drainage. The footprint of this proposed structure is 39,540 square feet.

Demolition will be necessary to replace the existing parking structure west of the hospital with the proposed parking structure. Approximately 171,000 square feet of area will be cleared to perform this work, involving the removal of concrete, storm drainage, electrical wiring, and sprinkler pipes among other debris. Approximately 22,000 additional square feet will need to be cleared for the construction of the new hospital tower, including the small elevator building immediately north of Building H (1,100 square feet).

No buildings will need to be demolished to support the new ACC. Minimal demolition will be required to construct the proposed facility near Lot N. Demolition waste will likely include asphalt and the remnants of electrical wiring and the storm drainage system in the vicinity.

Demolition is also needed to support the proposed systems genomics/personalized medicine facility. The existing Lower Campus Research Complex and the Dowling South building will be demolished to provide the space necessary to support the new facility, as summarized in Table 3-16. In the long term, the aging Dowling North building could also be demolished. Any new construction would occur on currently developed land area.

TABLE 3-16
List of Buildings to be Demolished in the Lower Campus Research Complex

Building	Description	Gross Square Feet	Interior Square Feet
1	Building 1	4,813	4,319
2	Building 2	4,800	4,351
3	Building 3	5,323	4,776
4	Building 4	5,217	4,592
5	Building 5	7,309	6,530
6	Building 6	4,802	4,370
7	Building 7	6,977	6,115
10	Flammable Storage	552	447
14	Building 14	274	241
16	Building 16	646	586
26	Building 26	6,220	5,506
27	Environmental Health	10,401	9,079
DS	Dowling South	84,105	74,036
	Total	**141,435**	**124,948**

The disposal of demolition waste will be handled in accordance with applicable solid waste statutes and regulations. Demolition debris has the potential to be contaminated with asbestos, lead-based paint, or chemical residues and require special disposal. Clean fill is defined in section 22a-209-1 of the RCSA and includes only natural soil, rock, brick, ceramics, concrete, and asphalt paving fragments. Clean fill can be used on site or at appropriate off-site locations. Clean fill does not include uncured asphalt, demolition waste containing material other than brick or rubble, contaminated demolition wastes (e.g., contaminated with oil or lead paint), tree stumps, or any kind of contaminated soils. Land clearing debris and waste other than clean fill resulting from demolition activities are considered bulky waste, also defined in section 22a-209-1 of the RCSA. Bulky waste is classified as special waste and must be disposed of at a permitted landfill or other solid waste processing facility pursuant to section 22a-208c of the CGS and section 22a-209-2 of the RCSA.

Construction and demolition debris will be segregated on site and reused or recycled to the greatest extent possible. Waste management plans for construction, renovation, or demolition projects will be developed to help meet the state's reuse and recycling goals. The *State Solid Waste Management Plan* outlines a goal of 58% recovery rate for municipal solid waste by the year 2024. Part of this effort includes increasing the amount of construction and demolition materials recovered for reuse and recycling in Connecticut. Contracts will be awarded only to those companies which present a sufficiently detailed construction/demolition waste management plan for reuse/recycling.

3.14.4 SUMMARY OF DIRECT AND INDIRECT IMPACTS TO SOLID AND HAZARDOUS WASTE

Other than temporary construction-related impacts, minimal impacts related to solid waste and hazardous materials are expected to be associated with the renovation and expansion at UCHC. Modest increases in solid wastes are expected due to the increased patient capacity, service efficiency, and increased staff at the hospital. Such waste will continue to be removed through a private waste hauler. However, waste generation will not be significant in comparison to existing rates at the campus.

The expansion and renovation of UCHC will likely require an update to the waste minimization program to take into account the increased sources of medical waste that may be utilized in the expanded and renovated hospital and ACC programs. Reductions in certain types of hazardous materials and wastes may be possible during the renovations through the purchase of new equipment that utilizes different chemicals to achieve the same results. In addition, UCHC will need to be prepared to deal with increased amounts of hazardous materials that will likely occur due to the expansion of UCHC. This will require coordination with hazardous waste contractors, and it is understood that such waste will eventually end up in an off-site waste disposal or processing facility.

3.15 ENERGY

3.15.1 EXISTING ENVIRONMENT

The existing environment at the UCHC campus was primarily built in the 1960s through the 1980s prior to recent significant advances in energy efficiency. While relatively recent buildings such as the MARB utilize energy-efficient designs, the majority of the campus was not designed to current efficiency standards. That said, UCHC has implemented several programs aimed at energy efficiency. The most recent example was a $420,000 project that began in 2009 to remove aging and inefficient lights utilizing incandescent or fluorescent bulbs at UCHC facilities at 16 Munson Road in Farmington and at 65 Kane Street in West Hartford. The fixtures were replaced with high-efficiency lighting. This project was funded through federal stimulus dollars.

3.15.2 PROPOSED FACILITIES

Pursuant to section 16a-38k of the CGS, any new construction of a state facility that is projected to cost five million dollars or more or renovation of a state facility that is projected to cost two million dollars or more must comply with sections 16a-38k-1 to 16a-38k-9 of the RCSA. The regulations require that the facility design process identify and implement practical and measurable green building design, construction, operations, and maintenance solutions. These regulations closely follow the Silver building rating of the LEED® rating system for new commercial construction and major renovation projects as established by the United States Green Building Council, and the two-globe rating in the Green Globes USA design program. Requirements include selecting strategies in various categories including energy efficiency and renewable energy; the indoor environment; water efficiency; recycling, reuse, and sustainability; site selection; and development and innovative operations.

LEED certification related to energy focuses on designing a building's systems to use less energy. A minimum level of energy efficiency and systems inspection is a prerequisite for LEED certification. In general, LEED buildings are 25 to 30% more energy efficient than non-LEED certified buildings. These numbers are based on a baseline survey of 60 LEED-certified buildings (most of which were not hospitals that have higher-intensive energy uses). It is recognized that the relocation of key facilities into the new hospital tower and the renovations of remaining facilities in the hospital and Clinic Building will provide a net increase in energy efficiency in John Dempsey Hospital. Based on preliminary estimates, the projected energy savings in the new hospital tower is expected to be 10% over baseline (non-energy efficient construction) conditions.

The preliminary LEED analysis for this project awarded 10 points out of a possible 35 points toward the Energy and Atmosphere category. These points were awarded for optimization of energy performance, enhanced commissioning, enhanced refrigerant management, and green power. Note that the analysis predated the LEED for Healthcare rating system that was released in early 2011.

The preferred orientation of the new hospital tower was found to only provide a 1% reduction in energy use. This is because the north side of the building would not receive any direct solar rays because of the design and latitude of the UCHC campus.

The proposed ACC as well as the new systems genomics/personalized medicine facility will also be designed to LEED Silver standards. As such, they will meet the prerequisites for LEED certification, namely fundamental commissioning of building energy systems, minimum energy performance, and fundamental refrigerant management. The consolidation of outpatient facilities into the new ACC will increase energy efficiency, particularly with regard to those functions that are relocated from older, less efficient buildings such as the Dowling South building.

The new systems genomics/personalized medicine facility will replace the Lower Campus Research Complex, a collection of modular buildings that were originally designed for temporary occupation in the 1960s. The original buildings have been extensively modified and expanded over the past four decades, but the designs were designed to maximize utilization of space and not energy efficiency. The replacement of these research buildings with a LEED-certified research building will greatly increase the energy efficiency of research conducted on the UCHC campus.

3.15.3 SUMMARY OF DIRECT AND INDIRECT IMPACTS TO ENERGY RESOURCES

Hospitals and healthcare facilities require significant amounts of energy. As with any new construction project, energy usage on the site will increase as a result of this project, particularly in regard to electricity and fossil fuel use. No renewable energy sources are currently proposed as part of this project although the use of green building designs involving glass increases the opportunity for direct solar heating. It is expected that by utilizing LEED certification-caliber energy efficiency designs, the new hospital tower will be approximately 10% more energy efficient over baseline conditions while the new ACC and systems genomics/personalized medicine facilities will be at least 20% more energy efficient. Accordingly, the building design will minimize energy waste in an energy-intensive facility.

4.0 IMPACT ANALYSIS SUMMARY

This section summarizes the unavoidable adverse impacts associated with the proposed project, the irreversible and irretrievable commitment of resources that will occur, and the potential mitigation measures to reduce impacts associated with the construction and operational phases of the project.

4.1 UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACTS

Although a goal of this project from the start has been environmental impact avoidance, certain adverse impacts are unavoidable. These are predominantly in the category of short-term construction-related impacts, increased traffic visiting the site, and additional long-term use of utilities and services.

The project will undergo a construction phase wherein additional equipment will be utilized at the site. Mitigation measures have been identified with respect to associated short-term air and noise quality. However, a certain degree of additional truck and equipment use and access will be necessary during this time period, which is unavoidable. Potential soil erosion and sedimentation impacts have also been identified. These will be mitigated through proper construction management techniques.

The following specific unavoidable environmental impacts have been identified for this project.

- *Traffic Generation*: The proposed project is projected to generate approximately 815 and 880 new trips during the weekday morning and afternoon peak hours, respectively. This increase in traffic volumes will require on-site and off-site mitigation strategies at some intersections such that acceptable levels of service are achieved.

- *Utilities and Services*: The proposed project will result in an increase in utility usage. Utility usage, including potable water, wastewater, electricity, chilled water, and steam will increase as a result of the additional development.

- *Air Quality*: Construction activities may result in short-term impacts to ambient air quality due to direct emissions from construction equipment and fugitive dust emissions. These impacts are temporary and will affect only the immediate vicinity of the construction sites and their access routes. Emissions from project-related construction equipment and trucks are expected to be insignificant with respect to compliance with the NAAQSs. A number of mitigation measures have been proposed to offset these impacts.

- *Noise*: Heavy construction equipment associated with site development may result in temporary increases in noise levels in the immediate area of construction. A number of mitigation measures have been proposed to offset these impacts.

4.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The implementation of this project will consume nonrenewable resources during the construction and ongoing operation (i.e., construction supplies, fuel, etc). Since these resources cannot be reused, they are considered to be irreversibly and irretrievably committed. Similarly, disposal of construction debris and wastes at a landfill and/or solid waste disposal facility will take up capacity in such facilities that is irreversible and irretrievable. The proposed project will result in an incremental increase in utility consumption. Finally, the irreversible and irretrievable expenditure of more than $700M is expected for the construction of the facility expansion.

4.3 CUMULATIVE IMPACTS

CEPA regulations require that the sponsoring agency for a project consider the cumulative impacts of its action. Cumulative impacts are those that result from the incremental impact of the proposed action when added to other past, present, or reasonably foreseeable future actions. Potential cumulative impacts associated with the proposed project include the following:

- *Traffic and Parking*: Cumulative traffic generation and parking demand will result from this project when combined with existing traffic both on and off the UCHC campus. These impacts have been analyzed in light of the cumulative nature of these needs. Measures have been evaluated to mitigate these impacts.

- *Long-Range Planning*: The proposed project is consistent with state, regional, local, and university planning efforts and will have beneficial cumulative impacts on existing planning and job creation efforts.

- *Utilities and Services*: Like all new development, the proposed project will result in an additional demand for utilities and services, including potable water, wastewater, electrical, chilled water, and steam. The proposed construction will be designed to LEED Silver standards and will result in more energy-efficient buildings that will replace existing older, energy-inefficient structures, resulting in a cumulative positive impact.

- *Stormwater*: The cumulative impact of stormwater hydrology has been evaluated in the subject EIE and is independently being assessed through a campus-wide Stormwater Master Plan Update. Three points in time have been assessed as follows: (1) 1994, when the previous Stormwater Master Plan was developed; (2) 2011 under present day conditions; and (3) future proposed conditions with the expansion in place. The overall goal will be no net increase in impervious areas. It is anticipated that the reduction in impervious area associated with the new hospital tower will help to mitigate potential increases in impervious area associated with the ACC and new systems genomics/personalized medicine facility.

- *Solid Waste and Hazardous Materials* – The project will cumulatively generate solid waste and medical waste products that will add to the existing base of waste materials. These waste materials will be handled and disposed of in a manner that meets current laws and university standards. Additionally, construction and demolition debris will be segregated on site and reused or recycled to the extent that is feasible.

4.4 MITIGATION OPPORTUNITIES THAT OFFSET ADVERSE ENVIRONMENTAL IMPACTS

Throughout the development of this project, attempts have been made to avoid impacts. In instances where impacts were unavoidable, mitigation measures have been sought. The following mitigation measures have been identified to reduce or offset potential adverse impacts associated with the proposed project.

Socioeconomic Mitigation – The proposed project is expected to improve the socioeconomic climate both in the region and state. The project will provide positive growth to the region's economy via short-term construction employment. Long-term socioeconomic opportunities are also expected to have a positive impact on the regional socioeconomic horizon by providing employment, high quality medical care, and exceptional educational programs. The renovation and expansion is projected to generate 3,000 construction jobs annually from 2012 to 2018 and increase permanent employment by almost 1,000 jobs.

Community Facilities and Services Mitigation Opportunities – The proposed project will increase access to high quality health care, graduate and retain more physicians and dentists to meet forecasted workforce shortages and increased demand for health care services resulting from health care reform, and build a top tier medical research and education institution for generations to come.

Public Utilities and Services Mitigation Opportunities – No significant utility impacts have been identified; however, utility improvements and upgrades will be performed in the project area. Stormwater quality renovation elements, such as inlet chambers and/or infiltration systems, will be incorporated into the project design. Pipe design will utilize conventional engineering for storm sewer systems.

Traffic Mitigation Opportunities – Intersection capacity analysis shows that even if no construction takes place the LOS at a number of roadway intersections near the campus will fail. Even so, given the projected increases in traffic related to the proposed project, mitigation is warranted to increase intersection operation efficiencies to acceptable levels. A number of mitigation measures have been identified, including signalization, lane restriping, signal timing improvements, roadway widening, and creation of designated turning lanes as well as adoption of user initiatives such as car pooling, ride sharing, and

shuttling. Ultimately, the extent and type of mitigation will be dictated by ConnDOT through the STC permitting process.

Parking Mitigation Opportunities – The proposed improvements will generate additional parking needs at the UCHC campus that cannot be met by existing parking facilities. New parking structures and surface parking have been proposed to accommodate the additional demand. The parking analysis conducted for the site demonstrates that the proposed increase in parking spaces will be sufficient to satisfy demand for at least the next 10 years.

Water Resources Mitigation Opportunities – The most significant water resource mitigation opportunity in the project area is upgrade of the stormwater drainage system, including use of deep sump catch basins and water quality renovation treatment units.

Energy Consumption – The proposed hospital tower, ACC, and new systems genomics facility will be constructed to LEED Silver standards. These energy-efficient facilities will replace existing inefficient buildings that have exceeded their useful life.

Air Quality Mitigation Opportunities – Numerous controls are proposed for minimizing short-term impacts to air quality from fugitive dust and other pollutant emissions. The following mitigation measures have been identified for reducing the length of time that soils are exposed, off-site tracking, and vehicle and equipment emissions:

1. Construction will be properly phased to minimize the length of time that soils are exposed before final materials are placed and landscaping is completed.

2. Exposed earth will be stabilized with grass, pavement, or other cover as early as possible.

3. Water or wetting agents will be used on exposed soil or gravel areas.

4. Stockpiled material will be covered, shielded, or stabilized as necessary.

5. Periodic sweeping of the construction site and driveway will be performed.

6. Truck tires and equipment leaving the construction site will be periodically cleaned.

7. Portable generators, on-site machinery, and vehicles will be properly maintained.

8. Consideration will be given to using construction equipment with air pollution control devices and/or use of "clean" fuels including ultra-low sulfur diesel fuel (15 ppm sulfur), compressed natural gas or emulsified fuels (e.g., Purinox, approved by the California Air Resources Board).

9. Anti-idling regulations will be followed.

Noise Mitigation Opportunities – The project is not expected to result in significant noise impacts. As such, mitigation measures are not proposed as part of the project. With respect to noise generated during construction, noise abatement measures included in project construction specifications may include:

1. Installation and maintenance of properly functioning muffler devices on construction equipment

2. Compliance with the Town of Farmington and State of Connecticut noise performance standards

Construction and Demolition-Related Mitigation Opportunities – The following additional measures will be taken to mitigate potential short-term, localized construction-related impacts:

1. Major excavation is not an element of this project. The majority of the site, however, will be developed at existing grades. Material will be reused on site where appropriate. Disposal of unusable debris and soils will proceed in accordance with pertinent local, state, and federal regulations.

2. Potential construction-related water quality and runoff impacts will be mitigated through the proposed stormwater management plan and erosion control plan. Construction-related erosion controls will be designed and installed in accordance with The Connecticut Council on Soil and Water Conservation *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* to protect nearby wetlands and watercourses.

3. Provisions for safety and security at the construction site will be reflected in the project specifications. Provisions for fencing, lighting, and other safety controls will be included in the project design.

Mitigation opportunities are summarized in Table 4-1 by resource category. For resource categories in which no mitigation is proposed, the impact evaluation has determined that the impacts are either insignificant, requiring no mitigation, or that there will be no adverse impacts resulting from the proposed project.

TABLE 4-1
Mitigation Opportunities Summary

Resource Category	Proposed Mitigation
Land Use and Zoning/Long Range State and Local Planning	→ None
Socioeconomics	→ Short-term construction-related job creation as well as long-term permanent job creation.
Community Facilities and Services	→ Expanded and improved health care and educational facilities will be provided through this project.
Aesthetic/Visual Resources	→ Future buildings will be designed to complement existing campus architecture.
Utilities and Services	→ Proposed utility connections will be coordinated with utility providers, as necessary, prior to construction. → Water and energy conservation measures will be incorporated into the new building designs. → Reduction in impervious areas will be sought through the design process, with a goal of no net increase on a campus-wide basis. → LEED Silver certification design parameters for water use and energy conservation. → Post-development stormwater treatment practices and maintenance requirements will be put in place for new construction to address stormwater quantity and quality.
Cultural Resources	→ None
Traffic and Parking	→ Long-term traffic mitigation measures will be implemented to maintain acceptable levels of service at affected intersections. → New parking structures and surface parking are proposed to offset the parking demand that will be generated by this project. → Appropriate traffic management techniques will be applied during construction.
Water Resources	→ Stormwater quality measures will be incorporated into the design of new facilities. → Appropriate implementation of sediment and erosion control devices as specified in accordance with the *2002 CT Guidelines for Soil Erosion and Sediment Control*.
Flood Hazard Potential	→ None
Biological Resources	→ None
Topography, Geology, and Soils	→ None
Air Quality	→ Construction best management practices will be implemented to limit dust impacts. → Excessive idling of construction equipment will be prohibited, and air pollution control devices (e.g., particulate filters) and clean fuels will be used during project construction where appropriate.

TABLE 4-1 (Continued)
Mitigation Opportunities Summary

Resource Category	Proposed Mitigation
Noise	→ The project will be in conformance with Connecticut noise regulations. → Majority of construction will occur during daylight hours. → Construction equipment will be properly maintained. → Advance notification will be given to nearby receptors if construction activities may produce temporary excessive noise levels.
Solid Waste and Hazardous Materials	→ Fluids associated with construction equipment and vehicles will be stored in accordance with applicable regulations. → A recycling program will be implemented at proposed facilities. → Recycled content materials will be used in the new building construction where possible. → Handling and disposal of removal waste will be conducted in accordance with applicable solid waste regulations.
Energy	→ Energy-efficient buildings will replace older inefficient structures.

4.5 CERTIFICATES, PERMITS, APPROVALS

The proposed project is potentially subject to environmental certificates, permits, and approvals listed in Table 4-2 below. Additional permits or approvals may be identified by review agencies during the design process.

TABLE 4-2
List of Potentially Required Construction and Operational Permits

Permit/Approval	Reviewing Authority
STC Permit	State Traffic Commission
Flood Management Certification	Department of Energy & Environmental Protection
Air Quality Permit	Department of Energy & Environmental Protection
Inland Wetlands Permit	Department of Energy & Environmental Protection
Wastewater Discharge Permit – Sanitary	Department of Energy & Environmental Protection
Wastewater Discharge Permit – Process	Department of Energy & Environmental Protection
Stormwater Permit	Department of Energy & Environmental Protection
Construction Dewatering Permit	Department of Energy & Environmental Protection
Wastewater Discharge Approval	Farmington WPCA
Certificate of Occupancy	State Building Inspector
Fire Safety Approval	State Fire Marshal

- *Office of State Traffic Commission (STC) Certificate of Operation* – Required for any new development that exceeds 100,000 square feet in floor area and/or has 200 or more parking spaces that abut or adjoin a state highway. A new certificate is required for any development that is already certified and is increasing its parking facilities by 50 or more parking spaces, increasing in square footage, or is proposing any significant change in use from that previously approved (i.e., office-to-retail).

- *CTDEEP Flood Management Certification* – Sections 25-68b through h of the CGS authorizes the Connecticut DEEP to regulate proposed state activities in floodplains, including any grant or loan that affects land use or land use planning in floodplains as well as the placement of fill or erection of structures in floodplains. The DEEP Commissioner also regulates actions by state agencies affecting floodplains.

- *CT DEEP Air Quality Permit* – Similar to the existing facility operation, air quality permits will be needed for new equipment that is regulated by the DEEP to protect air quality emissions.

- *CTDEEP Inland Wetlands Permit* – Any work or construction activity within the inland wetland areas or watercourses on site will require a permit from the Inland Water Resources Division (IWRD) pursuant to section 22a-39(h) of the CGS.

- *CTDEEP Wastewater Discharge Permit* – For discharge of sanitary wastewater to the Town of Farmington sewage collection and treatment system. Approval will also be necessary from the Farmington WPCA.

- *CTDEEP General Permit for the Discharge of Stormwater and Dewatering Wastewater Associated with Construction Activities* –Stormwater discharges from construction sites where one or more acres are to be disturbed require a permit pursuant to 40 CFR 122.26. For projects disturbing five or more acres, registration describing the site and the construction activity must be submitted to the DEEP prior to the initiation of construction. A stormwater pollution control plan, including measures such as erosion and sediment controls and post-construction stormwater management, must be prepared. For sites where more than 10 acres will be disturbed, the plan must be submitted to the department.

- *CTDEEP Individual Wastewater Discharge Permit* – Potentially required for discharge of construction dewatering wastewater with the potential for exceedences of water quality standards.

- *CTDEEP General Permit for Hydrostatic Testing Wastewater* – Required for hydrostatic pressure testing of pipelines.

- *CTDEEP General Permit for Miscellaneous Discharges of Sewer Compatible Wastewater* – Required for the discharge of various forms of wastewater including building maintenance wastewater and sprinkler test water.

- *U.S. Army Corps of Engineers Section 404 Permit* – Required for disturbance of more than 5,000 square feet of federal wetlands.

4.6 PROJECT COSTS AND BENEFITS

State funding for this project is estimated at $700M. The project is expected to secure UCHC as a top-tier academic medical center with the ability to draw in and retain top students, educators, and researchers. The expansion will result in state-of-the-art hospital beds and facilities for emergency and inpatient services that are on par with competitive models. The following specific benefits are expected to occur as a result of the construction and operation of the Health Center expansion:

- Creation of a substantial number of construction-related jobs over multiple years as well as long-term permanent jobs
- Increase in access to high quality health care and improved patient care facilities in a multipurpose medical center
- Increase in and centralization of ambulatory care
- Increase in research activity to complement and augment existing academic research
- Retention and graduation of additional physicians and dentists through quality educational programs
- Future growth of UCHC
- Strengthening and stabilization of UCHC's finances
- Protection and improvement of the campus environment
- Utilization of more energy-efficient buildings

5.0 CONSULTATION AND COORDINATION

5.1 SCOPING

Numerous local, regional, and state entities have been consulted during the preparation of the subject EIE, and public outreach has occurred. In the early stages of the process, the following scoping activities occurred:

- On September 6, 2011, a scoping notice was initially issued to notify state review agencies and other interested parties with regard to the proposed action. The notice, a copy of which is included in Appendix A, was published in the *Connecticut Environmental Monitor* on September 6, 2011 and was posted on the Town of Farmington's website. The close of public comment occurred on October 6, 2011.

- A public Scoping Meeting was held on September 22, 2011. Notice of the meeting was published in the *Environmental Monitor* (September 6, 2011 notice) and in the *Hartford Courant*. Additionally, the Town of Farmington posted notice of the meeting on their website. No members of the public attended.

- Subsequent to the close of public comment period, the proposed action was expanded to include the proposed systems genomics/personal medicine facility. Accordingly, a new scoping notice was published in the *Environmental Monitor* on October 18, 2011, with the close of comments occurring on November 17, 2011.

The following written scoping comments were received:

- Email correspondence dated September 9, 2011 from Michele Corey from McGraw-Hill Construction Dodge Reports requesting information on the composition of the design team members or when engineering and architecture services would be needed.

- Email correspondence dated September 20, 2011 from Robert Fromer urging UCHC to perform a net energy analysis to evaluate energy requirements used in the materials for initial construction over its projected useful lifetime. The same comment was emailed on October 10, 2011. Energy use and impacts have been presented in Section 3.15 of the subject EIE.

- Letter correspondence dated October 6, 2011 from the State of Connecticut DPH indicating that the project does not appear to be in a public water supply source water area and, therefore, the Drinking Water Section of DPH had no comments.

- Written correspondence dated October 6, 2011 from the Connecticut DEEP. DEEP's comments included information pertaining to potentially applicable regulatory permitting programs; state policies; and available guidance documents, including those pertaining to erosion control, stormwater management, low impact

development, and building construction, renovation, and demolition. A number of more specific recommendations were provided as summarized below. This EIE has addressed each of DEEP's specific recommendations as well as overarching state environmental policies. A supplemental response letter dated November 17, 2011 was submitted by DEEP, indicating that the revised scoping notice did not generate additional comments from the agency.

→ Existing wetlands and watercourses at the site should be delineated by a certified soil scientist, and their functional values should be evaluated.

→ Strict erosion and sediment controls should be employed during construction.

→ Appropriate controls designed to remove sediment and oil or grease typically found in runoff from parking and driving areas should be included in any stormwater collection system to be installed or upgraded at the site along with a stormwater management treatment train approach.

→ The EIE should quantify the proposed water usage and wastewater flows from full buildout of the *Bioscience Connecticut* projects and the ability of the utility providers to provide service.

→ The landscaping plan for the campus should utilize native species and nonnative ornamental species.

- Written correspondence dated November 8, 2011 from the Connecticut DPH, providing guidance for building radon-resistant features for new construction. This guidance will inform the design phase of this project.

In addition to the formal scoping process, UCHC has independently reached out to the Town of Farmington and the MDC relative to public utilities (i.e., water and sewer service) and, in the case of the town, to solicit direct input regarding any concerns and/or areas of interest affecting the surrounding area within the Town of Farmington. Additional outreach has occurred with numerous state agencies specific to the planned UCHC expansion, including correspondence with DEEP's Bureau of Natural Resources and the Department of Economic and Community Development's (DECD) SHPO. Finally, meetings have been held with representatives of DEEP pertaining to stormwater and flood management and with representatives of ConnDOT pertaining to traffic impact assessment and permitting.

All scoping-related notifications and correspondence are included in Attachment A.

5.2 PUBLIC REVIEW

Formal notice of the availability of this document was published in the *Hartford Courant* and in the *Environmental Monitor*. A period of no less than 45 days will be provided for

notice, distribution, and review of the Draft EIE by any interested parties. Upon receiving comment, comments will be reviewed, additional environmental study and analysis will be performed, if warranted, and the evaluation will be amended as appropriate.

Upon completion of the 45-day public comment period, the sponsoring state agency (UCHC) will forward the following information to OPM for determination of the adequacy of the evaluation:

1. All public notice documentation
2. A brief summary of the public hearing, if one is held
3. Comments received from all interested parties
4. The agency decision relative to proceeding with the proposed action
5. A discussion of the intentions for initiation of actions for minimizing impacts

The above submission constitutes the ROD (final EIE document and the measures for mitigation identified therein).

The CEPA process concludes with the review of the EIE and ROD by the OPM and its determination of whether regulatory requirements have been satisfied. The Final EIE is the basis for the design and implementation of the project.

6.0 DOCUMENT PREPARERS

The individuals, agencies, and organizations listed in Table 6-1 have contributed either directly or indirectly to the content in this document. A summary of the EIE authors and their roles follows.

TABLE 6-1
EIE Contributors

Role	***Entity***
Sponsoring and Implementing Agency	University of Connecticut UConn Health Center 263 Farmington Avenue Farmington, CT
Primary EIE Author	Milone & MacBroom, Inc. 99 Realty Drive Cheshire, CT
Architects (Joint Venture)	HKS, Inc. 1919 McKinney Avenue Dallas, TX
Architects (Joint Venture)	Steffian Bradley Architects 100 Summer Street Boston, MA
MEP Engineers	BR+A 311 Arsenal Street Watertown, MA
Site and Utility Engineering	BVH Integrated Services 50 Griffin Road South Bloomfield, CT
Landscape Architecture	Richter & Cegan, Inc. Avon Park North 88 Canal Court Avon, CT
Construction Managers	Turner Construction Company 440 Wheelers Farm Road Milford, CT
Stormwater Analysis	URS Corporation AES 500 Enterprise Drive Rocky Hill, CT

The primary author of this EIE is the consulting firm of Milone & MacBroom, Inc. Milone & MacBroom, Inc. is a professional consulting firm comprised of engineers, planners, environmental scientists, landscape architects, and surveyors. Milone & MacBroom, Inc. staff involved with the environmental analysis and preparation of this document follows.

Jeanine Armstrong Gouin, P.E., Vice President – Project Manager – Ms. Gouin has served as the project manager, primary author, and editor of this EIE. Ms. Gouin holds a Bachelor of Science degree in civil engineering and is a professional engineer licensed to practice in the State of Connecticut. Ms. Gouin has conducted and managed many EIEs in Connecticut pursuant to CEPA. Her technical background has focused on water resources, water supply, ecological resources, and environmental permitting.

Scott J. Bighinatti, M.S., Environmental Scientist – Mr. Bighinatti has been a significant contributor to this EIE, having served as the principal analyst for the alternatives analysis, environmental inventory, stormwater system inventory, and project impact analysis. Mr. Bighinatti holds a Bachelor of Science and Master of Science degrees in Natural Resource Management. He has notable expertise in hydrology, hydrogeology, geology, and geographic information systems.

Matthew J. Sanford, M.S., Professional Wetland Scientist – Mr. Sanford has provided technical expertise in the areas of wetland and wildlife biology. Mr. Sanford holds a Bachelor of Science degree in Natural Resource Management and a Master of Science degree in Wetland Biology. He is a certified soil scientist and professional wetland scientist with specific expertise in wetland science and biological resources.

Michael Zuba, M.S., AICP, Senior Land Use Planner – Mr. Zuba has contributed to the analysis of job creation and impact analysis on land use, socioeconomics, and community facilities and services. Mr. Zuba holds both Bachelor of Science and Master of Science degrees in Environmental Science and is a certified land use planner.

David Sullivan, P.E., Senior Transportation Engineer – Mr. Sullivan has led the EIE team's efforts on traffic and parking assessment. He holds a Bachelor of Science degree in civil engineering. Mr. Sullivan has conducted many traffic impact studies and regulatory permitting through the STC.

Additional technical support was provided by the following individuals:

- Kwesi Brown, P.E., Traffic Engineer
- Tom Harned, Transportation Planner
- James C. Murac, P.E., Water Resource Engineer
- Daniel Melnik, E.I.T., Water Resource Engineer
- Rebecca Augur, AICP, Land Use Planner
- Erin Wilson, Land Use Planner

7.0 REFERENCES

1. "Bioscience Connecticut: Jobs Today, Economic Growth Tomorrow, Innovation for the Future", http://www.governor.ct.gov/malloy/lib/malloy/051711BioscienceConnecticut.pdf, May 17, 2011.

2. Capitol Region Council of Governments. 2009. *Achieving the Balance: A Plan of Conservation and Development for the Capitol Region.* http://www.crcog.org/publications/community_dev.html

3. Connecticut Environmental Conditions Online, 2010, "Water Quality Classifications", http://cteco.uconn.edu/guides/resource/CT_ECO_Resource_Guide_Water_Quality_Classifications.pdf

4. Connecticut Environmental Policy Act (CEPA), CGS Sections 22a-1 through 22a-1h.

5. Cowardin, et al. 1979. *Classification of Wetlands and Deepwater Habitats of the United States.* U.S. Fish and Wildlife Service Publication FWS/OBS - 79/31.

6. Degraaf, Richard M., Rudis, Deborah D. 1987. *New England Wildlife: Habitat, Natural History, and Distribution.* Northeastern Forest Experiment Station.

7. Federal Emergency Management Agency, 2008, *Flood Insurance Study: Hartford County, Connecticut (All Jurisdictions).*

8. Federal Emergency Management Agency, 2008, *Digital Flood Insurance Rate Map for Hartford County, Connecticut*.

9. Megan, K., "Nonprofit Research Institute To Build $1.1 Billion Lab At UConn Health Center," *The Hartford Courant*, http://articles.courant.com/2011-09-30/health/hc-jackson-laboratory-coming-to-uconn-0930-20110929_1_jackson-laboratory-genetic-basis-research, September 30, 2011.

10. Office of Policy and Management Intergovernmental Division. *Conservation and Development Policies Plan for Connecticut 2005-2010*.

11. Pennington, C., "A New Bioscience Connecticut Collaboration", UConn Today, http://today.uconn.edu/blog/2011/09/a-new-bioscience-connecticut-collaboration/, September 30, 2011.

12. Pennington, C., "Town Hall Meetings Update Employees on Bioscience Connecticut Initiative," UConn Today, http://today.uconn.edu/blog/2011/09/town-

hall-meetings-update-employees-on-bioscience-connecticut-initiative/, September 28, 2011.

13. State of Connecticut Department of Energy & Environmental Protection, 2011, Geographic Information System (GIS) Database. http://www.ct.gov/dep/cwp/view.asp?a=2698&q=322898&depNav_GID=1707

14. State of Connecticut Department of Environmental Protection, 2011, *Draft State of Connecticut Integrated Water Quality Report*, http://www.ct.gov/dep/lib/dep/water/water_quality_management/305b/draft_ct_integratedwaterqualityreport_2011.pdf

15. State of Connecticut Department of Environmental Protection, 2010, *National Ambient Air Quality Standards*, http://www.ct.gov/dep/cwp/view.asp?a=2684&q=321796&depNav_GID=1744

16. State of Connecticut Secretary of the State, 2011, *Connecticut State Register and Manual – Section VII: Local Government*, Population of Connecticut Towns, http://www.ct.gov/sots/cwp/view.asp?a=3188&q=392414

17. State of Connecticut Department of Environmental Protection Council on Soil and Water Conservation. 2002. *Connecticut Guidelines for Soil Erosion and Sediment Control.*

18. State of Connecticut Department of Environmental Protection Inland Water Resources Division. 2004. *Connecticut Stormwater Quality Manual*.

19. State of Connecticut Department of Environmental Protection, 2002, "Water Quality Standards," http://www.ct.gov/dep/lib/dep/water/water_quality_standards/wqs.pdf

20. State of Connecticut Department of Labor. http://www.ctdol.state.ct.us/

21. State of Connecticut Office of the State Historic Preservation Officer. *National Register of Historic Places Certificate.*

22. Town of Farmington, Connecticut, 2011, Town Website, http://www.farmington-ct.org/

23. Town of Farmington, Connecticut, 2010, *Regulations for Zoning, Subdivision, Inland Wetlands* amended August 20, 2010, http://www.farmington-ct.org/plan_and_zoning_commission/index.html

24. Town of Farmington, Connecticut, 2009, *Town of Farmington Annual Report 2008-2009*, http://www.farmington-ct.org/docs/about/annualreport/Annual_Report.pdf

25. Town of Farmington Connecticut, 2007, *Plan of Conservation and Development Update 2007*, http://www.farmington-ct.org/town_services/planning_and_economic_development/index.html

26. Town of Farmington, Connecticut, 2005, *Environmental Resource Inventory and Plan*, Milone & MacBroom, Inc.

27. United States Census Bureau, 2011, http://www.census.gov

28. U.S. Department of Housing and Urban Development. http://www.hud.gov

29. U.S. Environmental Protection Agency Ecosystems Assessment Unit. 2010 Annual Report on Air Quality in New England. http://www.epa.gov/region01/lab/reportsdocuments.html

30. United International Corporation, June 1994, Comprehensive *Stormwater Management Report for the University of Connecticut Health Center*, University of Connecticut Health Center.

31. University of Connecticut, 2011, *New Construction and Renovation Project*, Project Number 091590, HKS, Inc. and SBA Architects.

32. University of Connecticut. 2004. *Campus Sustainable Design Guidelines.*

33. University of Connecticut. 2004. *Campus Master Plan Update Sustainable Initiatives.*

34. University of Connecticut Health Center, 2010, *Environmental, Health, and Safety Policies, Regulations, and Rules for Construction, Service, and Maintenance Contractors*.

35. University of Connecticut Health Center, 2010, *John Dempsey Hospital - Analysis of Conceptual Options*, Ballinger.

36. University of Connecticut Health Center, 2010, *The University of Connecticut Health Center's IEAC Capital Improvement Project: Expanding and Renovating John Dempsey Hospital to Ensure UCHC's Financial Viability and Assure Greater Access to Care in Connecticut*, abstract and project narrative.

37. University of Connecticut Health Center, 2009, "RCRA Waste Minimization and Recycling Initiatives at the Health Center."

38. University of Connecticut Health Center, 2009, "Governor Rell: Stimulus Funded Energy Efficiency Work Begins with Two UConn Health Center Projects," http://today.uchc.edu/headlines/2009/oct09/energy_efficiency.html

39. University of Connecticut Health Center, 2002, *Campus Master Plan*, Flad & Associates, Frank Zilm & Associates, and Affiliated Engineers.

40. University of Connecticut Health Center, 2002, "Universal Waste Procedures."

41. University of Connecticut Health Center, "Guidelines for Disposal of Chemical Waste."

42. University of Connecticut Health Center, "Policy for Transporting, Shipping, Importing / Exporting Hazardous Materials."

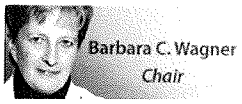
43. University of Connecticut Health Center, "Regulated Medical Waste Definitions and Disposal Guidance," Research Safety Office.

44. University of Connecticut Map and Geographic Information Center, 2011, "Aerial Photography Indexes," http://magic.lib.uconn.edu/connecticut_data.html#indexes

45. Walker Parking Consultants, 2011, *Parking Demand Study – University of Connecticut Health Center, Farmington, Connecticut.*

Published EIE.doc

APPENDIX A
SCOPING NOTICE AND CORRESPONDENCE

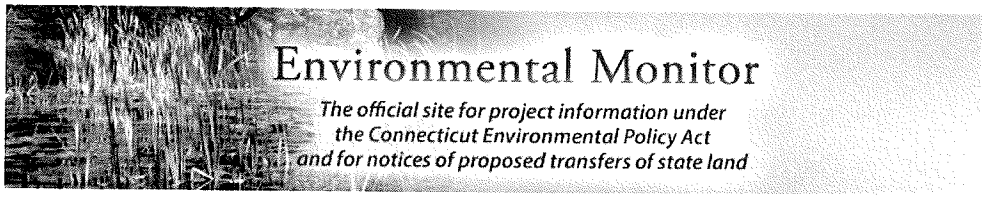


ENVIRONMENTAL MONITOR

- Current Issue
- Monitor Archives
- What is CEPA?
- CEPA Statutes
- CEPA Regulations
- What is Scoping?
- What to Expect at a Scoping Meeting
- How to Request a Public Scoping Meeting
- Guide to the State Lands Transfer Process

CEQ HOME

Monitor Archives



September 6, 2011

Scoping Notices

1. NEW! University of Connecticut Health Center New Construction and Renovation Project, Farmington

Post-Scoping Notices: Environmental Impact Evaluation Not Required

No Post-Scoping notices have been submitted for publication in this edition.

Environmental Impact Evaluations

No Environmental Impact Evaluations have been submitted for publication in this edition.

State Land Transfers

1. NEW! Mystic Oral School, Groton (In Step I of Transfer Process)
2. West Hartford, 2688 Albany Avenue (In Step I of Transfer Process)

The next edition of the Environmental Monitor will be published on September 20, 2011.

Subscribe to e-alerts to receive an e-mail when The Environmental Monitor is published.

Scoping Notices

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

1. Notice of Scoping for the University of Connecticut Health Center New Construction and Renovation Project

Municipality where proposed project might be located: Farmington

Address(es) of Possible Project Location: Main Road, West Road, and East Road, University of Connecticut Health Center; Farmington, Connecticut

Project Description: The University of Connecticut Health Center proposes to undertake construction of a new hospital bed tower, ambulatory care center, three parking garages, and related site work at its campus in Farmington, Connecticut. The new construction is integral to the implementation of Bioscience Connecticut, an initiative that was recently approved by the Connecticut General Assembly and signed into law by Governor Dannel P. Malloy. The capital improvement program also includes renovations and infrastructure improvements to the Health Center to support patient, educational, and research activities. The project will take place on the upper campus to the north east, and west of John Dempsey Hospital on existing paved areas, and on the lower campus in the general vicinity of the existing Dowling Buildings. The project will play an important strategic role in further positioning the Health Center as a top medical research and education institution and enhancing patient care services.

Project Map(s): Click Project Site Map to view a map of the project area. Click Master Plan Map to see conceptual project plan.

Written comments from the public are welcomed and will be accepted until the close of business on: October 6, 2011

There will be a Public Scoping Meeting for this project at:

DATE: September 22, 2011

TIME: 7:00 PM

PLACE: 16 Munson Road

Farmington, Connecticut 06030

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

Name: Kevin R. Norton, Project Manager
Agency: University of Connecticut Health Center
Address: 263 Farmington Avenue
Farmington, Connecticut 06030
Phone: 860-679-2075
Fax: 860-679-1279
E-Mail: krnorton@uchc.edu

If you have questions about the public meeting, or other questions about the scoping for this project, contact Mr. Norton as directed above

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

Post-Scoping Notices: Environmental Impact Evaluation Not Required

This category is required by the October 2010 revision of the Generic Environmental Classification Document for State Agencies. A notice is published here if the sponsoring agency, after publication of a scoping notice and consideration of comments received, has determined that an Environmental Impact Evaluation (EIE) does not need to be prepared for the proposed project.

No Post-Scoping Notices have been submitted for publication in this edition.

EIE Notices

After Scoping, an agency that wishes to undertake an action that could significantly affect the environment must produce, for public review and comment, a detailed written evaluation of the expected environmental impacts. This is called an Environmental Impact Evaluation(EIE).

No Environmental Impact Evaluations (EIE) have been submitted for review and comment in this edition.

State Land Transfer Notices

Connecticut General Statutes Section 4b-47 requires public notice of most proposed sales and transfers of state-owned lands. The public has an opportunity to comment on any such proposed transfer. Each notice includes an address where comments should be sent. Read more about the five-step process...

1. Notice of Proposed Land Transfer, Groton (Mystic)

Complete Address of Property: Oral School Road

Commonly used name of property or other identifying information: Mystic Oral School

Number of acres to be transferred: 47 (approx.)

Click to view map of property location

Description of Property

Below is some general information about the property. It should not be considered a complete description of the property and should not be relied upon for making decisions. If only a portion of a property is proposed for transfer, the description pertains only to the portion being transferred.

Brief Description of Historical and Current Uses: The buildings date from the late 1920s to the mid 70s. The Mystic Oral School campus was a school for the deaf until 1982 and then what is now DDS occupied the campus with permanent housing, administrative offices, and various day programs. DDS ceased operations in 2010. Since that time other tenants have occupied space here on campus as well. ***The entire campus will be closed on September 30, 2011***.

The property to be transferred contains the following:

Structures: ☑ Buildings in use ☐ Buildings not in use ☐ No Structures

Other Features: ☑ Wooded land ☐ Nonagricultural fields ☐ Active agriculture ☑ Paved areas ☑ Ponds, streams, other water, wetlands

Water Supply: ☑ Public water supply ☐ On-site well ☐ Unknown

Waste Disposal: ☑ Served by sewers ☐ On-site septic system ☐ Unknown

Click to view aerial view of property

The Locational Guide Map of the Connecticut Conservation and Development Policies Plan identifies the property as being in the following category(ies):

☐ Regional Center ☑ Neighborhood Conservation Area ☐ Growth Area
☐ Rural Community Center ☐ Rural Area
☐ Conservation Area ☐ Preservation Area ☐ Existing Preserved Open Space

The property is in the following municipal zone(s):

☑ Residential ☐ Industrial ☐ Commercial ☐ Institutional
☑ Other: Water Resource Protection & Coastal Area Management
☐ Not zoned ☐ Not known

Special features of the property, if known: None

Value of property, if known:

☑ If checked, value is not known.

Type of Sale or Transfer:

☑ Sale or transfer of property in fee
☐ Sale or transfer of partial interest in the property (such as an easement). Description of interest:

Proposed recipient, if known: Unknown

Proposed use by property recipient, if known: Unknown

The agency is proposing to transfer the property with the following restrictions on future uses:

☑ If checked, the state is not currently proposing restrictions on future uses.

Reason the State of Connecticut is proposing to transfer this property: The State has deemed the property surplus, since the property is no longer needed for State use and no re-use proposals were received by other State agencies.

Comments from the public are welcome and will be accepted until the close of business on October 6, 2011.

Comments may include (but are not limited to) information you might have about significant natural resources or recreation resources on the property, as well as your recommendations for means to preserve such resources.

Written comments* should be sent to:

Name: Patrick O'Brien
Agency: Office of Policy and Management
Address: 450 Capitol Avenue MS#52 ASP
Hartford, CT 06106-1379
E-Mail: Patrick.Obrien@ct.gov

***E-Mail submissions are preferred.**
(Comments from state agencies must be on agency letterhead and signed by agency head. Scanned copies are preferred.)
Please send a copy of any written comments to:

Name: Shane P. Mallory, RPA

Agency: Department of Administrative Services
Address: 165 Capitol Avenue, G-1
Hartford, CT 06106
E-Mail: shane.mallory@ct.gov

What Happens Next?

To find out if this proposed transfer is the subject of further notices, check future editions of the Environmental Monitor. Sign up for e-alerts to receive a reminder e-mail on Environmental Monitor publication dates.

---

2. Notice of Proposed Land Transfer, West Hartford

Complete Address of Property: 2688 Albany Avenue, West Hartford, CT

Commonly used name of property or other identifying information: Department of Energy and Environmental Protection (DEEP) South Branch Park River Flood Control Site 2 (Bugbee)

Number of acres to be transferred: 0.02 acre Permanent Easement for portion of adjacent original driveway

Click to view map of property location

Description of Property

Below is some general information about the property. It should not be considered a complete description of the property and should not be relied upon for making decisions. If only a portion of a property is proposed for transfer, the description pertains only to the portion being transferred.

Brief Description of Historical and Current Uses: Property was condemned for flood control purposes in the 1960s and has been retained primarily in its natural state.

The property to be transferred contains the following:

Structures: ☐ Buildings in use ☐ Buildings not in use ☑ No Structures
Other Features: ☐ Wooded land ☐ Nonagricultural fields ☐ Active agriculture
☐ Paved areas ☐ Ponds, streams, other water, wetlands
Water Supply: ☐ Public water supply ☐ On-site well ☑ Unknown
Waste Disposal: ☐ Served by sewers ☐ On-site septic system ☑ Unknown

Click to view aerial view of property: Aerial Map

Click to view photographs of property: none available

The Locational Guide Map of the Connecticut Conservation and Development Policies Plan identifies the property as being in the following category:
☐ Regional Center ☐ Neighborhood Conservation Area ☐ Growth Area
☐ Rural Community Center ☐ Rural Area
☐ Conservation Area ☐ Preservation Area ☑ Existing Preserved Open Space

The property is in the following municipal zone:
☑ Residential ☐ Industrial ☐ Commercial ☐ Institutional
☐ Other:
☐ Not zoned ☐ Not known

Value of property, if known:
☑ If checked, value is not known.

Links to other available information:
Type of Sale or Transfer:
☐ Sale or transfer of property in fee
☑ Sale or transfer of partial interest in the property (such as an easement). Description of interest: Boundary line from original condemnation of property for flood control purposes overlapped the neighboring driveway to the west. The driveway has been slightly reconfigured but DEEP's property boundary still overlaps the existing driveway. This easement will formalize rights that are appurtenant to the adjacent residential property and correct an oversight from the original acquisition.

Original condemnation map showing approximate proposed easement.

Proposed recipient, if known: Franklin Trust Federal Credit Union, current owner of property

Proposed use by property recipient, if known: Portion of driveway serving residential structure on adjacent site

The agency is proposing to transfer the property with the following restrictions on future uses:
To be used for driveway access only.
☐ If checked, the state is not currently proposing restrictions on future uses.

Reason the State of Connecticut is proposing to transfer this property:
This easement is to correct an oversight from the original condemnation by formalizing rights that are appurtenant to the neighboring property to the west.

Comments from the public are welcome and will be accepted until the close of business on September 17, 2011

Comments may include (but are not limited to) information you might have about significant natural resources or recreation resources on the property, as well as your recommendations for means to preserve such resources.

Written comments* should be sent to:

Name : Patrick O'Brien
Agency : Office of Policy and Management
Address : 450 Capitol Avenue MS#52 ASP
Hartford, CT 06106-1379
E-Mail : Patrick.Obrien@ct.gov

***E-Mail submissions are preferred.** (Comments from state agencies must be on agency letterhead and signed by agency head. Scanned copies are preferred.)

Additional information: Easement will become a permanent benefit to this property.

What Happens Next?

To find out if this proposed transfer is the subject of further notices, check future editions of the Environmental Monitor. Sign up for e-alertsto receive a reminder e-mail on Environmental Monitor publication dates.

No Step II, Step III, Step IV or Step V Notices were submitted for publication in this edition.

The Adobe Reader is necessary to view and print Adobe Acrobat documents, including some of the maps and illustrations that are linked to this publication. If you have an outdated version of Adobe Reader, it might cause pictures to display incompletely. To download up-to-date versions of the free software, click on the Get Acrobat button, below. This link will also provide information and instructions for downloading and installing the reader.

Get Acrobat Reader Download the free Acrobat Reader!

Access.Adobe is a tool that allows blind and visually impaired users to read any documents in Adobe PDF format. For more information, read the product overview at Adobe.com.

Content Last Modified on 9/7/2011 4:29:09 PM

Content Last Modified on 9/19/2011 12:45:33 PM

Printable Version

From: Corey, Michele [mailto:Michele_Corey@mcgraw-hill.com]
Sent: Friday, September 09, 2011 1:53 PM
To: Norton,Kevin R.
Subject: Environmental Monitor Notice of Scoping

Dear Mr. Norton,

The Notice of Scoping from the Environmental Monitor lists the Health Centers plans for a new hospital bed tower, ambulatory care center and 3 parking garages as part of the "Bioscience Connecticut" Masterplan. At your earliest convenience, would you please tell me who is currently on the design teams (architects, engineers, etc), or when you anticipate seeking those services?

Thank you for your time and assistance!!

Sincerely,

Michele Corey
McGraw-Hill Construction Dodge Reports
Dodge Reports - Sweets - Architectural Record - ENR - Regional Publications - GreenSource
Seymour, CT 06483
203-881-9580 or 800-856-7719
Fax 203-881-9602
michele_corey@mcgraw-hill.com
www.construction.com

From: Robert Fromer [mailto:saintrobert@comcast.net]
Sent: Tuesday, September 20, 2011 3:18 PM
To: Norton,Kevin R.
Cc: karl.wagener@ct.gov; peter.hearn@ct.gov
Subject: Notice of Scoping for the University of Connecticut Health Center New Construction and Renovation Project

Section 22a-1b(c)(7) of the Connecticut General Statutes reads as follows:

"the effect of the proposed action on the use and conservation of energy resources," which is best accomplished as follows:

When scoping for the environmental impact of the University of Connecticut Health Center, the university should perform a net energy analysis. Such analysis should include calculations of all embodied energy requirements used in the materials for initial construction of the facility over its projected useful lifetime. The analysis should be expressed in a dimensionless unit as an energy profit ratio of energy generated by the facility to the calculated net energy expended in plant construction, maintenance and total fuel cycle energy requirements over the projected useful lifetime of the facility. The boundary for both the net energy calculations of the fuel cycle and materials for the facility construction and maintenance shall both be at the point of primary material extraction and include the energy consumed through the entire supply chain to final, but not be limited to, such subsequent steps as transportation, refinement and energy for delivery to the end consumer. The results of said net energy analysis shall be used for the purpose of minimizing energy consumption and production of greenhouse gases. "Facility net energy" means the heat energy delivered by the facility contained in a fuel minus the life cycle energy used to produce the facility. "Fuel net energy" means the heat energy contained in a fuel minus the energy used to extract the fuel from the environment, refine it to a socially useful state and deliver it to consumers, and "embodied energy" means the total energy used to build and maintain a process, expressed in calorie equivalents of one type of energy.

Robert Fromer

HARTFORD COURANT PROOF

Customer: MILONE & MACBROOM INC
Contact: EMAIL-JEANINE ARMSTRONG GOUINPhone:2032711773

Ad Number: **2465750**
Insert Dates: 09/21/2011

Price: 218.92
Section: CL
Printed By: JSHROYER

Class: 2174; CONNECTICUT
Date: 11/09/2011

Size: 1 x 3.50

Signature of Approval:_____ Date:_____

Notice of Public Scoping Meeting
University of Connecticut Health Center
New Construction and Renovation Project

A Public Scoping Meeting will be held on September 23, 2011 at 7:00 PM at 16 Munson Road in Farmington, Connecticut to solicit public input for construction of a new hospital bed tower, ambulatory care center, three parking garages, and related site work at the University of Connecticut Health Center campus in Farmington, Connecticut. The new construction is integral to the implementation of BioScience Connecticut, an initiative that was recently approved by the Connecticut General Assembly and signed into law by Governor Dannel P. Malloy. The capital improvement program also includes renovations and infrastructure improvements to the Health Center to support patient, educational, and research activities. The project will take place on the upper campus to the north east, and west of John Dempsey Hospital on existing paved areas, and on the lower campus in the general vicinity of the existing Dowling Buildings. The project will play an important strategic role in further positioning the Health Center as a top medical research and education institution and enhancing patient care services.

Written comments from the public are also welcomed and will be accepted until the close of business on October 6, 2011. All written comments should be sent to Kevin R. Norton, Project Manager, University of Connecticut Health Center, 263 Farmington Avenue, Farmington, Connecticut 06030.

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

October 6, 2011

Kevin R. Norton
Project Manager
University of Connecticut Health Center
263 Farmington Avenue
Farmington, CT 06030

RE: Notice of Scoping for the University of Connecticut Health Center New Construction and Renovation Project

Dear Mr. Norton:

The Drinking Water Section of the Department of Public Health has reviewed the above-mentioned project for potential impacts to any sources of public drinking water supply. This project does not appear to be in a public water supply source water area; therefore, the Drinking Water Section has no comments at this time.

Sincerely,

Eric McPhee
Supervising Environmental Analyst
Drinking Water Section

Phone: (860) 509-7333
Telephone Device for the Deaf (860) 509-7191
410 Capitol Avenue - MS # 51WAT
P.O. Box 340308 Hartford, CT 06134
Affirmative Action / An Equal Opportunity Employer

CONNECTICUT DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION
OFFICE OF ENVIRONMENTAL REVIEW
79 ELM STREET, HARTFORD, CT 06106-5127

To: Kevin R. Norton - Project Manager
UConn Health Center, 263 Farmington Avenue, Farmington, CT 06030

From: David J. Fox - Senior Environmental Analyst **Telephone:** 860-424-4111

E-Mail: david.fox@ct.gov

Date: October 6, 2011

Subject: Health Center Construction & Renovation Project

The Department of Energy & Environmental Protection has received the Notice of Scoping announcing preparation of an Environmental Impact Evaluation for proposed construction of a new hospital tower, ambulatory care center, three parking garages and related site work at the UConn Health Center campus in Farmington. The following comments are submitted for your consideration. Given the conceptual nature of the proposed master plan drawing, our comments are necessarily general in nature.

The Natural Resources Conservation Service's Soil Survey depicts Wilbraham and Menlo extremely stony soils, a regulated wetland soil, associated with an unnamed tributary to Trout Brook in the northwestern portion of the campus. The proposed ambulatory care center complex is in this area. Existing wetlands and watercourses at the site should be delineated by a certified soil scientist and their functional values should be evaluated. Any development, including both buildings and access roadways, should avoid regulated areas to the maximum extent practicable. Unavoidable impacts should be mitigated and buffer areas established to further protect wetlands and watercourses. The degree of impact should be quantified by acreage and a discussion of the functional values that would be lost or impaired should be included in any CEPA document.

Any work or construction activity within the inland wetland areas or watercourses on-site will require a permit from the Inland Water Resources Division (IWRD) pursuant to section 22a-39(h) of the Connecticut General Statutes (CGS). For further information, contact the division at 860-424-3019. Fact sheets regarding IWRD permit programs and permit application forms can be downloaded at: IWRD Permits.

In order to protect wetlands and watercourses on and adjacent to the site, strict erosion and sediment controls should be employed during construction. The *Connecticut Guidelines for Soil Erosion and Sediment Control* prepared by the Connecticut Council on Soil and Water Conservation in cooperation with DEEP is a recommended source of technical assistance in the selection and design of appropriate control measures. The 2002 revised edition of the Guidelines is available online at: Erosion Control Guidelines .

A portion of the campus, along the unnamed tributary to Trout Brook, is within the 100-year flood zone on the community's Flood Insurance Rate Map. Based on the conceptual drawing provided in the notice, it is difficult to determine the location of the ambulatory care

center relative to the 100-year flood zone.

State policy regarding floodplain development is articulated at section 25-68d(b)(4) of the CGS: "The proposal promotes long-term nonintensive floodplain uses and has utilities located to discourage floodplain development." This State policy, which applies to State actions (including funding) within a floodplain, invokes a higher standard (involving land use considerations) than the engineering standards (involving hydrologic and hydraulic considerations) contained in Federal and municipal floodplain regulations. In order to be able to be certified, the proposal must be determined to be a nonintensive use of the floodplain. The determination of whether a specific proposal is considered nonintensive requires examination of numerous factors including the existing state of the floodplain and its natural resources, the types of uses proposed for the floodplain area, the design of the entire proposal and the extent of encroachment into the floodplain, and the availability of alternatives to siting within the floodplain. In order to ensure consistency with State policy, no new buildings should be sited within the 100-year flood zone. In addition, no buildings providing medical services on a residential basis, that could be considered a critical activity as defined in section 25-68b(4) of the CGS, should be sited within the 500-year flood zone.

If any construction is proposed in the 100-year flood zone, the project must be certified by the sponsoring agency as being in compliance with flood and stormwater management standards specified in section 25-68d of the CGS and section 25-68h-1 through 25-68h-3 of the Regulations of Connecticut State Agencies (RCSA) and receive approval from the Department. In addition, any project that impacts natural or man-made storm drainage facilities will require certification regardless of its location in relation to the floodplain. The Department strongly recommends that a drainage master plan be prepared for the entire campus. The plan would evaluate the existing and proposed impervious surface for the entire campus and each subwatershed and propose detention, as appropriate. The design should ensure no net increase in peak flows and provide for compensatory storage for any fill within the 100-year flood zone. The campus drainage master plan would be reviewed and approved by the Inland Water Resources Division, so that subsequent review of flood management certification for individual projects would be expedited, provided the project was consistent with the drainage master plan. For further information, contact the Inland Water Resources Division at 860-424-3706. A fact sheet regarding floodplain management and the certification form can be downloaded at: Flood Management.

Stormwater discharges from construction sites where one or more acres are to be disturbed require a permit pursuant to 40 CFR 122.26. The Permitting & Enforcement Division has issued a *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities* (DEP-PERD-GP-015) that will cover these discharges. For projects disturbing five or more acres, registration describing the site and the construction activity must be submitted to the Department prior to the initiation of construction. A stormwater pollution control plan, including measures such as erosion and sediment controls and post construction stormwater management, must be prepared. For sites where more than 10 acres will be disturbed, the plan must be submitted to the Department. A goal of 80 percent removal of total suspended solids from the stormwater discharge shall be used in designing and installing post-construction stormwater management measures. For construction projects with a total disturbed

area between one and five acres, no registration is required as long as the project is reviewed by the town and receives written approval of its erosion and sediment control measures and it adheres to the *Connecticut Guidelines for Soil Erosion and Sediment Control.* If no review is conducted by the town or written approval is not provided, the permittee must register with the Department. For further information, contact the division at 860-424-3018. A copy of the general permit as well as registration forms may be downloaded at: Construction Stormwater GP.

Traditional stormwater systems collect stormwater as rapidly as possible and quickly shunt it from upland areas to receiving waterbodies. The latest emphasis in stormwater management is to try to minimize changes between pre- and post-development runoff rates and volumes by utilizing on-site retention and to pretreat discharges to remove total suspended solids, oils, greases, nutrients, pathogens and floatable debris. The Department's standard recommendation concerning stormwater management which follows should be observed, as appropriate.

> Appropriate controls, designed to remove sediment and oil or grease typically found in runoff from parking and driving areas, should be included in any stormwater collection system to be installed or upgraded at the site. Non-structural measures to dissipate and treat runoff are strongly encouraged, including infiltration using pervious paving or sheetflow from uncurbed pavement to vegetated swales, water gardens or depression storage areas. The Department recommends a stormwater management treatment train approach. Such a system includes a series of stormwater best management practices (BMPs) that target the anticipated pollutants of concern. For example, parking lot runoff would be expected to contain petroleum hydrocarbons, heavy metals, sediment, organic material (leaves/grass clippings) and seasonally elevated temperatures. Potential structural stormwater BMPs include, but are not limited to, catch basin inserts, gross particle separators, deep sump catch basins fitted with passive skimmers, and/or detention/retention basins having adequate pre-treatment. For larger sites, a combination of structural and non-structural BMPs are typically most effective and practical. If more than 1 acre of pavement drains to a common discharge point, a hydrodynamic separator, incorporating swirl technology, circular screening technology or engineered cylindrical sedimentation technology, is recommended to remove medium to coarse grained sediments and oil or grease. The treatment system should be sized such that it can treat stormwater runoff adequately. The Department recommends that the treatment system be designed to treat the first inch of stormwater runoff. Upon installation, a maintenance plan should also be implemented to insure continued effectiveness of these control measures.

For additional guidance, consult the *Connecticut Stormwater Quality Manual,* available on-line at: Stormwater Manual.

The Department strongly supports the use of low impact development (LID) practices such as water quality swales and rain gardens for infiltration of stormwater on site. Key strategies for effective LID include: managing stormwater close to where precipitation falls; infiltrating, filtering, and storing as much stormwater as feasible; managing stormwater at multiple locations throughout the landscape; conserving and restoring natural vegetation and soils; preserving open

space and minimizing land disturbance; designing the site to minimize impervious surfaces; and providing for maintenance and education. Water quality and quantity benefits are maximized when multiple techniques are grouped together. Consequently, we typically recommend the utilization of one, or a combination of, the following measures:

- the use of pervious pavement or grid pavers (which are very compatible for parking lot and fire lane applications), or impervious pavement without curbs or with notched curbs to direct runoff to properly designed and installed infiltration areas,
- the use of vegetated swales, tree box filters, and/or infiltration islands to infiltrate and treat stormwater runoff (from building roofs and parking lots),
- the minimization of access road widths and parking lot areas to the maximum extent possible to reduce the area of impervious surface,
- if soil conditions permit, the use of dry wells to manage runoff from the building roofs,
- the use of vegetated roofs (green roofs) to reduce the runoff from buildings,
- proper treatment of special activity areas (e.g. loading docks, covered maintenance and service areas),
- the installation of rainwater harvesting systems to capture stormwater from building roofs for the purpose of reuse for irrigation, and
- providing for pollution prevention measures to reduce the introduction of pollutants to the environment.

The effectiveness of various LID techniques that rely on infiltration depends on the soil types present at the site. According to the Natural Resources Conservation Service's Soil Web Survey (available on-line at: Web Soil Survey), most of the soils at the property consist of urban land. These soils are unrated in their suitability for various stormwater management practices. However, infiltration practices may be suitable at this site. Soil mapping consists of a minimum 3 acres map unit and soils may vary substantially within each mapping unit. Test pits should be dug in areas planned for infiltration practices to verify soil suitability and/or limitations. Planning should insure that areas to be used for infiltration are not compacted during the construction process by vehicles or machinery. The siting of areas for infiltration must also consider any existing soil or groundwater contamination.

The Department has compiled a listing of web resources with information about watershed management, green infrastructure and LID best management practices. It may be found on-line at: LID Resources

Stormwater management for parking garages typically should involve two separate collection systems designed to treat the runoff from different types of parking areas. Any exposed parking levels will produce a high volume of runoff with relatively low concentrations of pollutants. Runoff from such areas should be directed to the storm sewer system and the collection system should include controls to remove sediment and oil or grease. A hydrodynamic separator, incorporating swirl technology, circular screening technology or engineered cylindrical sedimentation technology, is recommended to remove medium to coarse grained sediments and oil or grease. The treatment system should be sized such that it can treat stormwater runoff adequately. The Department recommends that the treatment system be designed to treat the first inch of stormwater runoff. Upon installation, a maintenance plan to

remove sediment and oil or grease should also be implemented.

Interior levels of the garage will produce a low volume of runoff with relatively high concentrations of pollutants. In addition, the need for cleaning of the garage must be considered and floor washwater cannot be directed to a stormwater sewer system. Runoff from interior areas should be directed to the sanitary sewer system, again with appropriate treatment. An oil separator tank with a capacity of at least 1000 gallons is required. A licensed waste oil hauler must clean the tank at least once a year. A list of certified haulers can be obtained from the Bureau of Materials Management & Compliance Assurance at 860-424-3366. The discharge of floor washwater is covered under a *General Permit for Miscellaneous Discharges of Sewer Compatible Wastewater* as building maintenance wastewater. Registration is required for discharges greater than 5000 gallons per day. For further information concerning stormwater management, contact the Permitting & Enforcement Division at 860-424-3018. A fact sheet describing the permit and the registration form may be downloaded at: Miscellaneous Discharge GP.

The Health Center presently discharges 430,000 gallons per day of hospital, laboratory operations and cooling tower blowdown wastewaters to the Town of Farmington water pollution control facility under a permit issued pursuant to section 22a-430 of CGS. The Department has made a tentative determination that the continuance of the existing discharge would not cause pollution of the waters of the state and proposes to renew the permit for the discharge to the sanitary sewer. The proposed projects would likely require amendment of this permit.

The document should quantify the proposed water usage and wastewater flows from full build out of the Bioscience Connecticut projects. The ability of Metropolitan District Commission to provide supply and the availability of capacity at the Farmington water pollution control facility to treat flows should be confirmed.

The Natural Diversity Data Base (NDDB) has determined that there are no extant populations of Federally listed endangered or threatened species or species listed by the State, pursuant to section 26-306 of the Connecticut General Statutes (CGS), as endangered, threatened or special concern in the project area. NDDB information includes all information regarding critical biologic resources available at the time of the request. This information is a compilation of data collected over the years by the Department of Environmental Protection, Bureau of Natural Resources and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern as well as enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the proposed project has not been initiated within 12 months of this review, contact the NDDB for an updated review. Also, be advised that this is a preliminary review. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEEP for the proposed site.

In developing a landscaping plan for the campus, only native species or non-invasive

ornamental species should be used. Section 22a-381 of the Connecticut General Statutes established the Invasive Plants Council which publishes and updates a list of plants considered to be invasive or potentially invasive. Invasive plants are non-native or exotic plants that were introduced by human activity and quickly established. Many non-native plants are well known agricultural or horticultural species. Most of these do not escape cultivation or have minimal impacts on natural communities if they do spread. Invasive species rapidly disperse and establish, displacing native plants and altering ecological processes like fire occurrence and nutrient cycling. Due to their rapid growth, efficient means of seed dispersal, and tolerance of a wide range of environmental conditions, invasive plants outcompete with native species for sunlight, nutrients, and space. Species on this list should not be utilized in landscaping. Section 22a-381c prohibits state agencies from purchasing such species listed by the Council. Additional information regarding invasive species or copies of the list may be obtained online at Invasives List or by contacting the Geologic & Natural History Survey at 860-424-3540.

Pursuant to section 16a-38k of the CGS, any new construction of a state facility that is projected to cost five million dollars or more, or renovation of a state facility that is projected to cost two million dollars or more must comply with sections 16a-38k-1 to 16a-38k-9 of the Regulations of Connecticut State Agencies. The regulations require that the facility design process identify and implement practical and measurable green building design, construction, operations and maintenance solutions. These regulations closely follow the silver building rating of the Leadership in Energy and Environmental Design's (LEED®) rating system for new commercial construction and major renovation projects, as established by the United States Green Building Council, and the two-globe rating in the Green Globes USA design program. Requirements include selecting strategies in various categories including energy efficiency and renewable energy; the indoor environment; water efficiency; recycling, reuse and sustainability; site selection and development and innovative operations. A guidebook, *Connecticut Building Standard Guidelines, Compliance Manual for High Performance Buildings*, is available on-line at: Building Guidelines

The proposed projects must comply with Connecticut's Noise Regulations contained in section 22a-69-1 through 22a-69-7.4 of the Regulations of Connecticut State Agencies as well as with any local noise regulations. The Department recommends that potential sources of noise, such as HVAC equipment, be sited away from sensitive receptors and that appropriate shielding be provided.

The capital improvement program also includes renovations to the existing Health Center. The following standard comments regarding building renovation projects should be observed, as applicable, during future planning and implementation of these projects. Fact sheets providing additional information concerning environmental, health and safety requirements applicable to building renovation and demolition projects have been developed by the Waste Engineering & Enforcement Division. To obtain copies, call the division at 860-424-3023. This information is also available on-line at: Health & Safety Requirements.

Development plans in urban areas that entail soil excavation should include a protocol for sampling and analysis of potentially contaminated soil. Soil with contaminant levels that exceed the applicable criteria of the Remediation Standard

Regulations, that is not hazardous waste, is considered to be special waste. The disposal of special wastes, as defined in section 22a-209-1 of the RCSA, requires written authorization from the Waste Engineering and Enforcement Division prior to delivery to any solid waste disposal facility in Connecticut. If clean fill is to be segregated from waste material, there must be strict adherence to the definition of clean fill, as provided in Section 22a-209-1 of the RCSA. In addition, the regulations prohibit the disposal of more than 10 cubic yards of stumps, brush or woodchips on the site, either buried or on the surface. A fact sheet regarding disposal of special wastes and the authorization application form may be obtained at: Special Waste Fact Sheet.

The Waste Engineering & Enforcement Division has issued a *General Permit for Contaminated Soil and/or Sediment Management (Staging & Transfer).* It establishes a uniform set of environmentally protective management measures for stockpiling soils when they are generated during construction or utility installation projects where contaminated soils are typically managed (held temporarily during characterization procedures to determine a final disposition). Temporary storage of less than 1000 cubic yards of contaminated soils (which are not hazardous waste) at the excavation site does not require registration, provided that activities are conducted in accordance with the applicable conditions of the general permit. Registration is required for on-site storage of more than 1000 cubic yards for more than 45 days or transfer of more than 10 cubic yards off-site. A fact sheet describing the general permit, a copy of the general permit and registration forms are available on-line at: Soil Management GP.

During any building renovation, areas to be disturbed must be inspected for the presence of asbestos-containing materials. Any abatement project or the removal and disposal of such material must conform to Federal and State regulations. These include 40 CFR 61, Subparts A and M and section 19a-332a-1 through 19a-332a-16 of the Regulations of Connecticut State Agencies. For further information, contact the Department of Public Health at (860) 509-7367. Additional information concerning regulation of asbestos, including lists of licensed consultants and contractors, may be found at: Asbestos Contractors

The disposal of material containing asbestos requires the approval of the Waste Engineering and Enforcement Division pursuant to section 22a-209-8(i) of the Regulations of Connecticut State Agencies. Proper disposal technique requires that the material be bagged and labeled and placed in an approved secure landfill. For further information, contact the division at 860-424-3366. A fact sheet regarding disposal of special wastes and the authorization application form may be obtained at: Special Waste Fact Sheet.

The disposal of demolition waste should be handled in accordance with applicable solid waste statutes and regulations. Demolition debris may be contaminated with asbestos, lead-based paint or chemical residues and require special disposal. Clean fill is defined in section 22a-209-1 of the Regulations of Connecticut State Agencies

(RCSA) and includes only natural soil, rock, brick, ceramics, concrete and asphalt paving fragments. Clean fill can be used on site or at appropriate off-site locations. Clean fill does not include uncured asphalt, demolition waste containing other than brick or rubble, contaminated demolition wastes (e.g. contaminated with oil or lead paint), tree stumps, or any kind of contaminated soils. Landclearing debris and waste other than clean fill resulting from demolition activities is considered bulky waste, also defined in section 22a-209-1 of the RCSA. Bulky waste is classified as special waste and must be disposed of at a permitted landfill or other solid waste processing facility pursuant to section 22a-208c of the Connecticut General Statutes and section 22a-209-2 of the RCSA. Additional information concerning disposal of demolition debris is available on-line at: Demolition Debris.

Construction and demolition debris should be segregated on-site and reused or recycled to the greatest extent possible. Waste management plans for construction, renovation or demolition projects are encouraged to help meet the State's reuse and recycling goals. The *State Solid Waste Management Plan* outlines a goal of 58% recovery rate for municipal solid waste by the year 2024. Part of this effort includes increasing the amount of construction and demolition materials recovered for reuse and recycling in Connecticut. It is recommended that contracts be awarded only to those companies who present a sufficiently detailed construction/demolition waste management plan for reuse/recycling. Additional information concerning construction and demolition material management and waste management plans can be found on-line at: C&D Material Management and C&D Waste Management Plans.

Thank you for the opportunity to review this project. If you have any questions concerning these comments, please contact me.

cc: Robert Hannon, DEEP/OPPD
Denise Ruzicka, DEEP/IWRD
Kim Trella, DEEP/OPPD

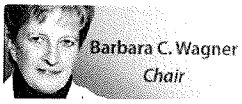
From: Robert Fromer [mailto:saintrobert@comcast.net]
Sent: Monday, October 10, 2011 7:59 PM
To: Norton,Kevin R.
Cc: maynard@senatedems.ct.gov
Subject: university of Connecticut Health Center New Construction and Renovation Project, Farmington; CEPA Scoping

Sorry for the lateness.

The recommendation below refers to Connecticut General Statutes, sec. 22a-1b(c)(7) requiring that the Environmental Impact Statement address "the effect of the proposed action on the use and conservation of energy resources."

When scoping for the environmental impact of the University of Connecticut Health Center, the university should perform a net energy analysis. Such analysis should include calculations of all embodied energy requirements used in the materials for initial construction of the facility over its projected useful lifetime. The analysis should be expressed in a dimensionless unit as an energy profit ratio of energy generated by the facility to the calculated net energy expended in plant construction, maintenance and total fuel cycle energy requirements over the projected useful lifetime of the facility. The boundary for both the net energy calculations of the fuel cycle and materials for the facility construction and maintenance shall both be at the point of primary material extraction and include the energy consumed through the entire supply chain to final, but not be limited to, such subsequent steps as transportation, refinement and energy for delivery to the end consumer. The results of said net energy analysis shall be used for the purpose of minimizing energy consumption and production of greenhouse gases. "Facility net energy" means the heat energy delivered by the facility contained in a fuel minus the life cycle energy used to produce the facility. "Fuel net energy" means the heat energy contained in a fuel minus the energy used to extract the fuel from the environment, refine it to a socially useful state and deliver it to consumers, and "embodied energy" means the total energy used to build and maintain a process, expressed in calorie equivalents of one type of energy.

Robert Fromer



ENVIRONMENTAL MONITOR

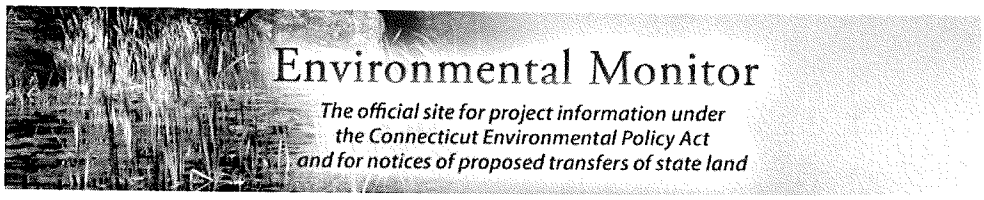
- Current Issue
- Monitor Archives
- What is CEPA?
- CEPA Statutes
- CEPA Regulations
- What is Scoping?
- What to Expect at a Scoping Meeting
- How to Request a Public Scoping Meeting
- Guide to the State Lands Transfer Process

CEQ HOME

Receive Updates by E-mail
Sign-Up for E-alerts

CT Alert
WE CAN'T ALERT YOU IF WE CAN'T REACH YOU

Monitor Archives



October 18, 2011

Scoping Notices

1. New Haven - Hartford - Springfield Rail Improvements
2. Demolition of Buildings #11 and #29 at the Former Cedarcrest Hospital, Newington
3. NEW! University of Connecticut Health Center Newly Revised New Construction and Renovation Project, Farmington
4. NEW! Villages at Shantok Hill, Montville

Post-Scoping Notices: Environmental Impact Evaluation Not Required

1. Windham Hospital Medical Building, Windham

Environmental Impact Evaluations

No Environmental Impact Evaluations have been submitted for publication in this edition

State Land Transfers

No State Land transfers have been submitted for publication in this edition

The next edition of the Environmental Monitor will be published on November 8, 2011.

Subscribe to e-alerts to receive an e-mail when The Environmental Monitor is published.

Scoping Notices

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

1. Notice of Scoping for New Haven - Hartford - Springfield Rail Improvements

Municipalities where proposed project might be located: The proposed improvements are along the existing 62 mile rail corridor starting at Union Station in New Haven, Connecticut, traveling northward through Hartford, and continuing to Union Station in Springfield, Massachussetts. It traverses the municipalities of New Haven, North Haven, Hamden, Wallingford, Meriden, Berlin, Newington, West Hartford, Hartford, Windsor, Windsor Locks, Enfield, Longmeadow and Springfield, Massachusetts.

Project Description: The New Haven-Hartford-Springfield (NHHS) Rail Project will provide significant new regional passenger rail service options as a key component of a robust and vibrant multi-modal regional transportation system. With funding from both the new High-Speed Intercity Rail Program created by President Barack Obama in 2008, and the State of Connecticut, the NHHS Rail Project will provide the

infrastructure and trains to operate some of the nation's best passenger rail services. As the gateway to New England, the NHHS Rail Project will also facilitate improved service to Massachusetts, Vermont and eventually Montreal. New train service will connect communities, generate sustainable economic growth, help build energy independence, and provide links to travel corridors and markets within and beyond the region.

The following infrastructure improvements to the existing rail corridor will be built to accommodate projected 2030 service:

- Re-installation of 38.7 miles of double track which was previously removed by AMTRAK in 1989.
- 5.8 miles of new passing sidings and rehabilitation of two existing sidings
- 9 new interlockings (so trains can change tracks)
- signaling and control systems, including Positive Train Control
- Repair, rehabilitation and replacement of bridges and culverts
- Improvements at 38 at-grade crossing
- High-level platforms, pedestrian overpasses, parking, and other amenities at:
  - Wallingford
  - Meriden
  - Berlin
  - Windsor
  - Windsor Locks
- Future new stations at North Haven, Newington, West Hartford and Enfield, and a new platform at New Haven State Street station
- Layover and maintenance facility near Springfield, MA station

Project Map: Click here to view a map of the project area.

Additional Project Information: Click here to be directed to the project website.

Written comments from the public are welcomed and will be accepted until the close of business on: October 20, 2011

Any person can ask the sponsoring agency to hold a Public Scoping Meeting by sending such a request to the address below. If a meeting is requested by 25 or more individuals, or by an association that represents 25 or more members, the sponsoring agency shall schedule a Public Scoping Meeting. Such requests must be made by September 30, 2011.

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

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

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

Name: Mr. Stephen V. Delpapa - Transportation Supervising Planner
Agency: Connecticut Department of Transportation
Address: 2800 Berlin Turnpike
Newington, CT 06131
Phone: 860-594-2941
Fax: 860-594-3028
E-Mail: Stephen.Delpapa@ct.gov

The agency expects to release an Environmental Impact Evaluation for this project, for public review and comment by the end of 2011

---

2. Notice of Scoping for Demolition of Buildings #11 and #29 at the Former Cedarcrest Hospital Property

Municipality where proposed project might be located: Newington

Address of Possible Project Location: Russell Road

Project Description: Demolish two building (#11 and #29) on the former grounds of Cedarcrest Hospital. The two buildings are listed on the State Register of Historic Places. The demolition is necessary for the proposed State Data Center. The proposed construction does not meet the Environmental Classification Document (ECD) criteria warranting public scoping; therefore, this scoping notice is not subject to the proposed construction, but rather the demolition of historic buildings. The Department is actively

coordinating with the State Historic Preservation Office.

The former hospital just south of Building #29 may be demolished in the future, but under a separate project. Therefore, this scoping notice is intended to also address any comments or potential impacts under the Connecticut Environmental Policy Act.

Project Maps: Click here to view a map of the project area.

Aerial Photo of Site.

Written comments from the public are welcomed and will be accepted until the close of business on: October 20, 2011.

Any person can ask the sponsoring agency to hold a Public Scoping Meeting by sending such a request to the address below. If a meeting is requested by 25 or more individuals, or by an association that represents 25 or more members, the sponsoring agency shall schedule a Public Scoping Meeting. Such requests must be made by September 30, 2011.

Written comments and/or requests for a Public Scoping Meeting, including questions about the scoping for this project should be sent to:

Name: Jeffrey Bolton, Supervising Environmental Analyst
Agency: Department of Construction Services
Environmental Planning
Address: 165 Capitol Avenue
Room 275
Hartford, Connecticut 06106
Phone: 860-713-5706
Fax: 860-713-7250
E-Mail: jeffrey.bolton@ct.gov

After the public scoping, the Department will make a determination whether an Environmental Impact Evaluation may be prepared for this project.

Other Information: See attached Initial Environmental Review.

---

3. Notice of Scoping for the Newly Revised New Construction and Renovation Project for the University of Connecticut Health Center

Municipality where proposed project might be located: Farmington

Addresses of Possible Project Location: Main Road, West Road, and East Road, University of Connecticut Health Center; Farmington, Connecticut

Project Description: The University of Connecticut Health Center proposes to undertake construction of a new hospital bed tower, ambulatory care center, research laboratory facility, three parking garages, additional surface parking, and related site work at its campus in Farmington, Connecticut. The new construction is integral to the implementation of Bioscience Connecticut, an initiative that was recently approved by the Connecticut General Assembly and signed into law by Governor Dannel P. Malloy. The capital improvement program also includes renovations and infrastructure improvements to the Health Center to support patient, educational, and research activities. The project will take place on the upper campus to the north east, and west of John Dempsey Hospital on existing paved areas, and on the lower campus in the general vicinity of the existing Dowling Buildings and the Medical Arts Research Building. The project will play an important strategic role in further positioning the Health Center as a top medical research and education institution and enhancing patient care services. This project was initially published on September 6, 2011 and the public comment period ended on October 6, 2011. A public scoping meeting was held on September 22, 2011. The project has since been expanded and the scoping period is being extended to reflect that change.

Project Map(s): Click here to view a map of the project area.

Written comments from the public are welcomed and will be accepted until the close of business on November 17, 2011.

Any person can ask the sponsoring agency to hold a Public Scoping Meeting by sending such a request to the address below. If a meeting is requested by 25 or more individuals, or by an association that represents 25 or more members, the sponsoring agency shall schedule a Public Scoping Meeting. Such requests must be made by October 28, 2011.

Additional information about the project can be viewed in person at or online at:

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

Name: Kevin R. Norton, Project Manager
Agency: University of Connecticut Health Center
Address: 263 Farmington Avenue
Farmington, Connecticut 06030
Phone: 860-679-2075
Fax: 860-679-1279
E-Mail: krnorton@uchc.edu

If you have questions about the public meeting, or other questions about the scoping for this project, contact Mr. Norton as directed above.

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

---

4. Scoping Notice of Scoping for the Villages at Shantok Hill

Municipality where proposed project might be located: Montville

Address of Possible Project Location: 1710 and 1856 Norwich - New London Turnpike (Rte. 32), Montville, CT 06382

Project Description: Mutual Housing Association of South Central Connecticut is proposing to construct a 244-unit rental apartment complex on 17.65 acres of undeveloped woodlands located at 1710 and 1856 Norwich - New London Turnpike (Rte. 32), Montville, CT 06382. The proposed development will include 74 affordable rental units. The project also includes construction of a new roadway off Route 32 near Church Lane and infrastructure development, surface parking areas, a community building and a maintenance building. Scoping was previously conducted for this project under the name "Uncas Hills of Montville Condominiums" in November 2008. Scoping is being re-conducted due to design changes. A Phase I Environmental Site Assessment has been conducted for the project which identified no evidence of recognized environmental conditions (RECs) in connection with the property. A Phase IA Archaeological Investigation is currently underway.

Project Maps:

Click here to view a map of the project area.

Click here to view a Site Plan for the project.

Written comments from the public are welcomed and will be accepted until the close of business on: November 18, 2011

Any person can ask the sponsoring agency to hold a Public Scoping Meeting by sending such a request to the address below. If a meeting is requested by 25 or more individuals, or by an association that represents 25 or more members, the sponsoring agency shall schedule a Public Scoping Meeting. Such requests must be made by October 28, 2011.

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

Name: Mark Hood
Agency: Department of Economic and Community Development
Address: 505 Hudson Street
Hartford, CT 06106
Fax: 860-270-8157
E-Mail: mark.hood@ct.gov

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

Name: Mark Hood
Agency: Department of Economic and Community Development
Address: 505 Hudson Street
Hartford, CT 06106
Phone: 860-270-8089
Fax: 860-270-8157
E-Mail: mark.hood@ct.gov

Post-Scoping Notices: Environmental Impact Evaluation Not Required

This category is required by the October 2010 revision of the Generic Environmental Classification Document for State Agencies. A notice is published here if the sponsoring agency, after publication of a scoping notice and consideration of comments received, has determined that an Environmental Impact Evaluation (EIE) does not need to be prepared for the proposed project.

1. Post-Scoping Notice for the Windham Hospital Medical Building

Municipality where project will be located: Windham
CEPA Determination: On July 19, 2011 the Department of Economic and Community Development (DECD) published a Notice of Scoping to solicit public comments for this project in the *Environmental Monitor*. The DECD has taken those comments into consideration and has concluded that the project does not require the preparation of Environmental Impact Evaluation under CEPA.
The agency's conclusion is documented in a Memo of Findings and Determination and an Environmental Assessment Checklist .

EIE Notices

After Scoping, an agency that wishes to undertake an action that could significantly affect the environment must produce, for public review and comment, a detailed written evaluation of the expected environmental impacts. This is called an Environmental Impact Evaluation (EIE).

No Environmental Impact Evaluations have been submitted for review and comment in this edition.

State Land Transfer Notices

Connecticut General Statutes Section 4b-47 requires public notice of most proposed sales and transfers of state-owned lands. The public has an opportunity to comment on any such proposed transfer. Each notice includes an address where comments should be sent. Read more about the five-step process...

No Step I, II, Step III, Step IV or Step V Notices were submitted for publication in this edition.

The Adobe Reader is necessary to view and print Adobe Acrobat documents, including some of the maps and illustrations that are linked to this publication. If you have an outdated version of Adobe Reader, it might cause pictures to display incompletely. To download up-to-date versions of the free software, click on the Get Acrobat button, below. This link will also provide information and instructions for downloading and installing the reader.

Get Acrobat Reader Download the free Acrobat Reader!

Access.Adobe is a tool that allows blind and visually impaired users to read any documents in Adobe PDF format. For more information, read the product overview at Adobe.com.

Content Last Modified on 10/18/2011 12:20:18 PM

Content Last Modified on 11/7/2011 1:25:37 PM

Printable Version

79 Elm Street Hartford, CT 06106 / Phone: 860-424-4000

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH

November 8, 2011

Kevin R. Norton, Project Manager
University of Connecticut Health Center
263 Farmington Avenue
Farmington, CT 06030

RE: Notice of Scoping for the Newly Revised New Construction and Renovation Project for the University of Connecticut Health Center

Dear Mr. Norton:

A review of the documents reveals that the Newly Revised New Construction and Renovation Project for the University of Connecticut Health Center will include construction of an occupied research laboratory facility. When a building is to be constructed and occupied on a regular basis, it should be built using radon resistant features.

The following summarizes the Department's position with regard to radon:

A. Radon

The Connecticut Department of Public Health Radon Program recommends that during the construction of the building, radon resistant features should be built into the infrastructure of the building.

The list below describes the basic components of radon resistant new construction:

- A gas permeable layer, such as 4-inch gravel, placed beneath the slab to allow soil gases to move freely underneath the building
- Plastic sheeting over the gas permeable layer and under the slab to help prevent soil gases from entering the home
- Sealing and caulking all openings in the foundation floor to reduce soil gas entry
- A vent pipe, such as 6 inch PVC pipe, to run from the gas permeable layer through the building to the roof to safely vent soil gases above the building
- An electrical junction box installed in case an electric venting fan is needed later

The facility should be tested for radon after construction is completed. If radon results are at or above 4.0 picocuries per liter (pCi/L), the existing system should be activated by installing an in-line fan.

Phone: (860) 509-7367, Fax: (860) 509-7378
Telephone Device for the Deaf (860) 509-7191
410 Capitol Avenue - MS # 51RAD
P.O. Box 340308 Hartford, CT 06134
An Equal Opportunity Employer

Additional inquiries on the subject of radon resistant new construction can be directed to Francesca Provenzano, Health Program Supervisor of the Radon Program, at 860-509-7367.

Sincerely,

Suzanne Blancaflor, M.S., M.P.H, Chief
Environmental Health Section

CONNECTICUT DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION
OFFICE OF ENVIRONMENTAL REVIEW
79 ELM STREET, HARTFORD, CT 06106-5127

To: Kevin R. Norton - Project Manager
UConn Health Center, 263 Farmington Avenue, Farmington, CT 06030

From: David J. Fox - Senior Environmental Analyst **Telephone:** 860-424-4111

Date: November 17, 2011 **E-Mail:** david.fox@ct.gov

Subject: Health Center Construction & Renovation Project

The Department of Energy & Environmental Protection has received the Notice of Scoping announcing preparation of an Environmental Impact Evaluation for proposed construction of a new hospital tower, ambulatory care center, research laboratory facility, three parking garages, additional surface parking and related site work at the UConn Health Center campus in Farmington. The Department had previously provided scoping comments in my memo dated October 6, 2011 for a list of projects that did not include the research laboratory facility or surface parking. Our previous comments, which were general in nature, are equally applicable to the revised list of projects. Since no updated site plans were provided in this scoping notice, we have no additional comments at this time.

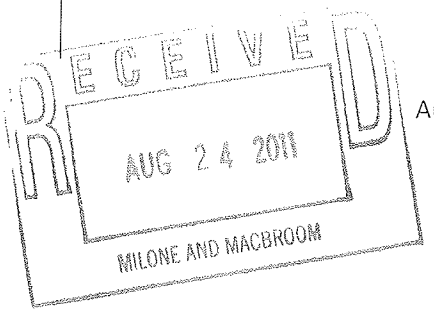
Thank you for the opportunity to review this proposal. If you have any questions concerning these comments, please contact me.

cc: Robert Hannon, DEEP/OPPD
Robert Kaliszewski, DEEP/OPPD
Macky McLeary, DEEP/DC

Connecticut Department of

ENERGY & ENVIRONMENTAL PROTECTION

Bureau of Natural Resources
Wildlife Division
Natural History Survey – Natural Diversity Data Base



August 22, 2011

Mr. Scott Bighinatti
Milone & MacBroom, Inc.
99 Realty Drive
Cheshire, CT 06410

Regarding: – UConn Health Center- Natural Diversity Data Base #201106132

Dear Mr. Bighinatti:

In response to your request for a Natural Diversity Data Base (NDDB) Review of State Listed Species for the UConn Health Center, our records for this site indicates that there are no extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur in this area.

The Natural Diversity Data Base includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the project is not implemented within 12 months, then another Natural Diversity Data Base review should be requested for up-to-date information.

Please be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEEP for the proposed site.

Thank you for consulting the Natural Diversity Data Base. If you have any additional questions, please feel free to contact me at Elaine.Hinsch@po.state.ct.us.

Sincerely,

Elaine Hinsch

Elaine Hinsch
Program Specialist II
Wildlife Division

S Bighinatti

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

Bureau of Natural Resources
Wildlife Division
Natural History Survey – Natural Diversity Data Base

November 1, 2011

NOV - 3 2011

Mr. Scott Bighinatti
Milone & MacBroom, Inc.
99 Realty Drive
Cheshire, CT 06410

Regarding: – UConn Health Center- Natural Diversity Data Base #201106776

Dear Mr. Bighinatti:

In response to your request for a Natural Diversity Data Base (NDDB) Review of State Listed Species for the UConn Health Center, our records for this site indicates that there are no extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur in this area.

The Natural Diversity Data Base includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available. If the project is not implemented within 12 months, then another Natural Diversity Data Base review should be requested for up-to-date information.

Please be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEEP for the proposed site.

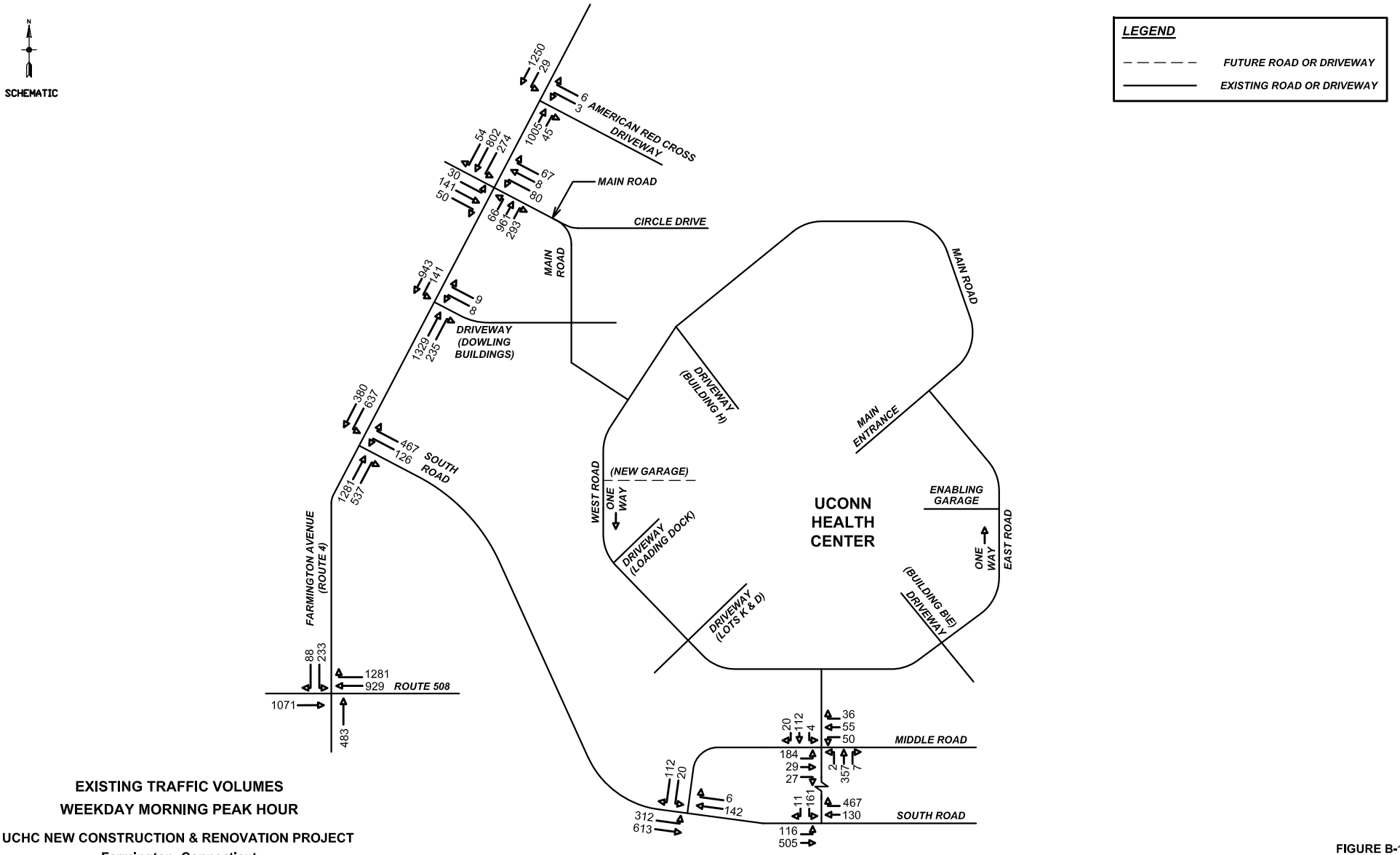
Thank you for consulting the Natural Diversity Data Base. If you have any additional questions, please feel free to contact me at Elaine.Hinsch@po.state.ct.us.

Sincerely,

Elaine Hinsch

Elaine Hinsch
Program Specialist II
Wildlife Division

APPENDIX B
TRAFFIC IMPACT ANALYSIS DOCUMENTATION

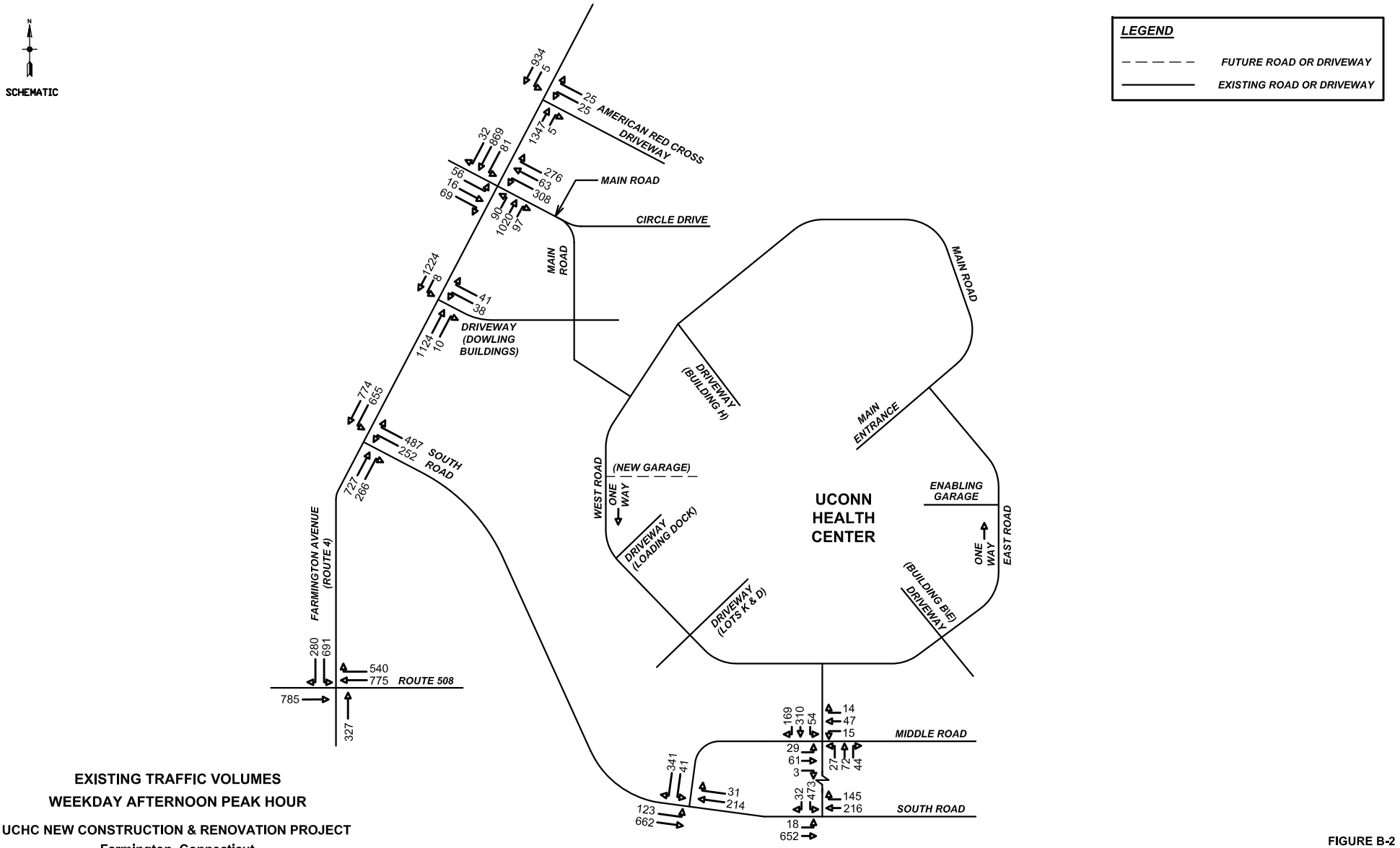


EXISTING TRAFFIC VOLUMES
WEEKDAY MORNING PEAK HOUR

UCHC NEW CONSTRUCTION & RENOVATION PROJECT
Farmington, Connecticut

FIGURE B-1

MILONE & MACBROOM, Inc.

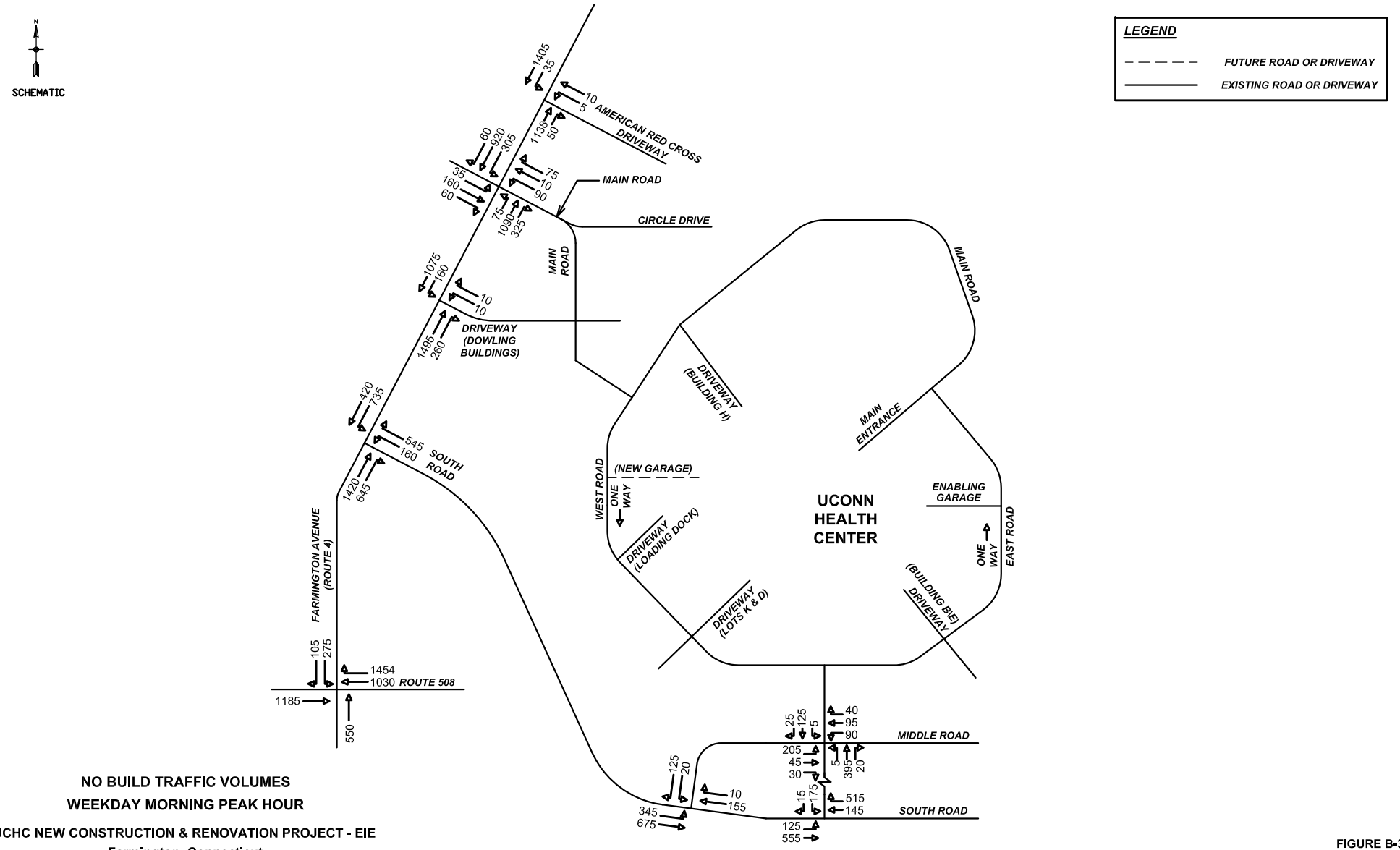


EXISTING TRAFFIC VOLUMES
WEEKDAY AFTERNOON PEAK HOUR

UCHC NEW CONSTRUCTION & RENOVATION PROJECT
Farmington, Connecticut

FIGURE B-2

MILONE & MACBROOM, Inc.

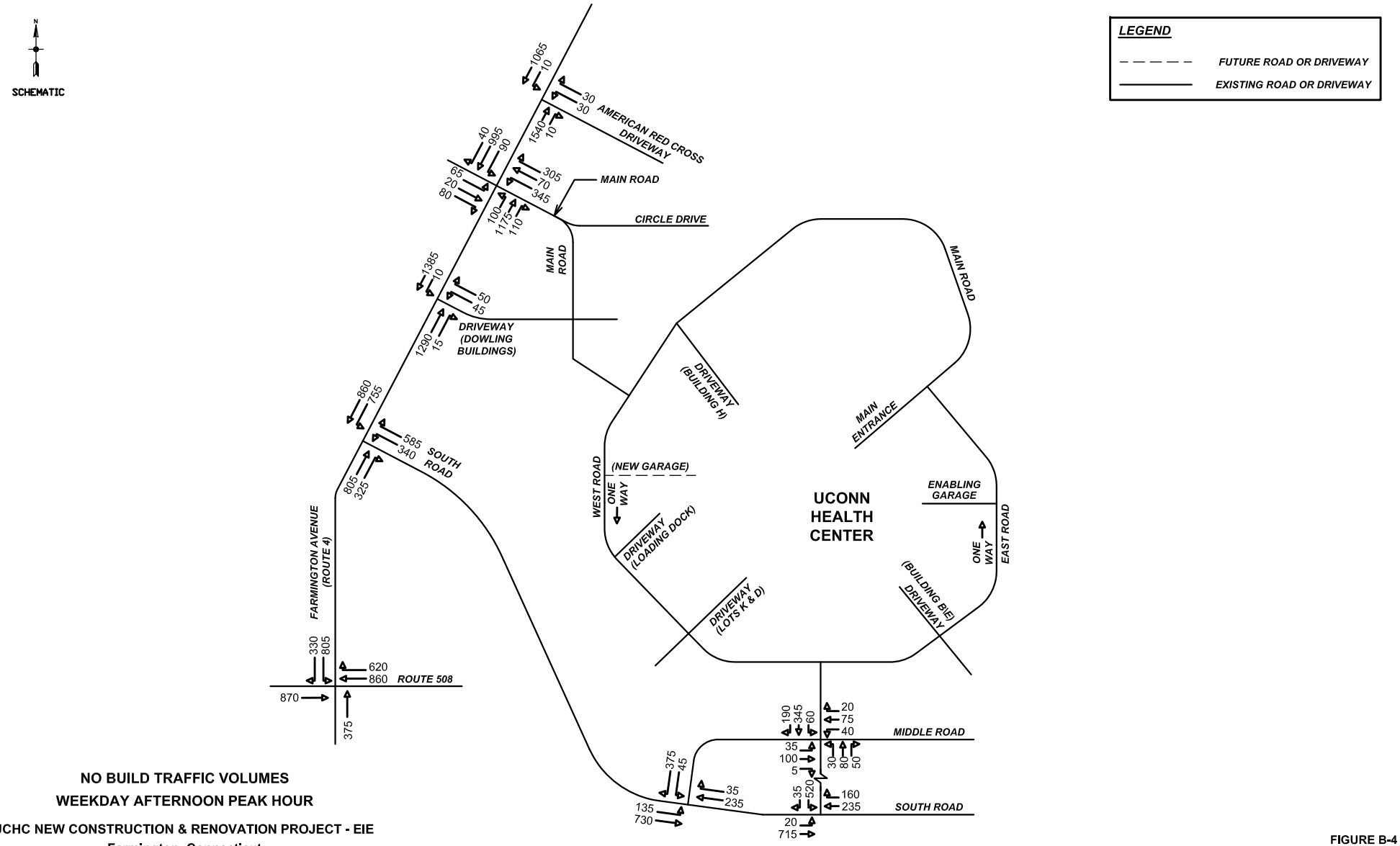


NO BUILD TRAFFIC VOLUMES
WEEKDAY MORNING PEAK HOUR

UCHC NEW CONSTRUCTION & RENOVATION PROJECT - EIE
Farmington, Connecticut

FIGURE B-3

MILONE & MACBROOM, Inc.

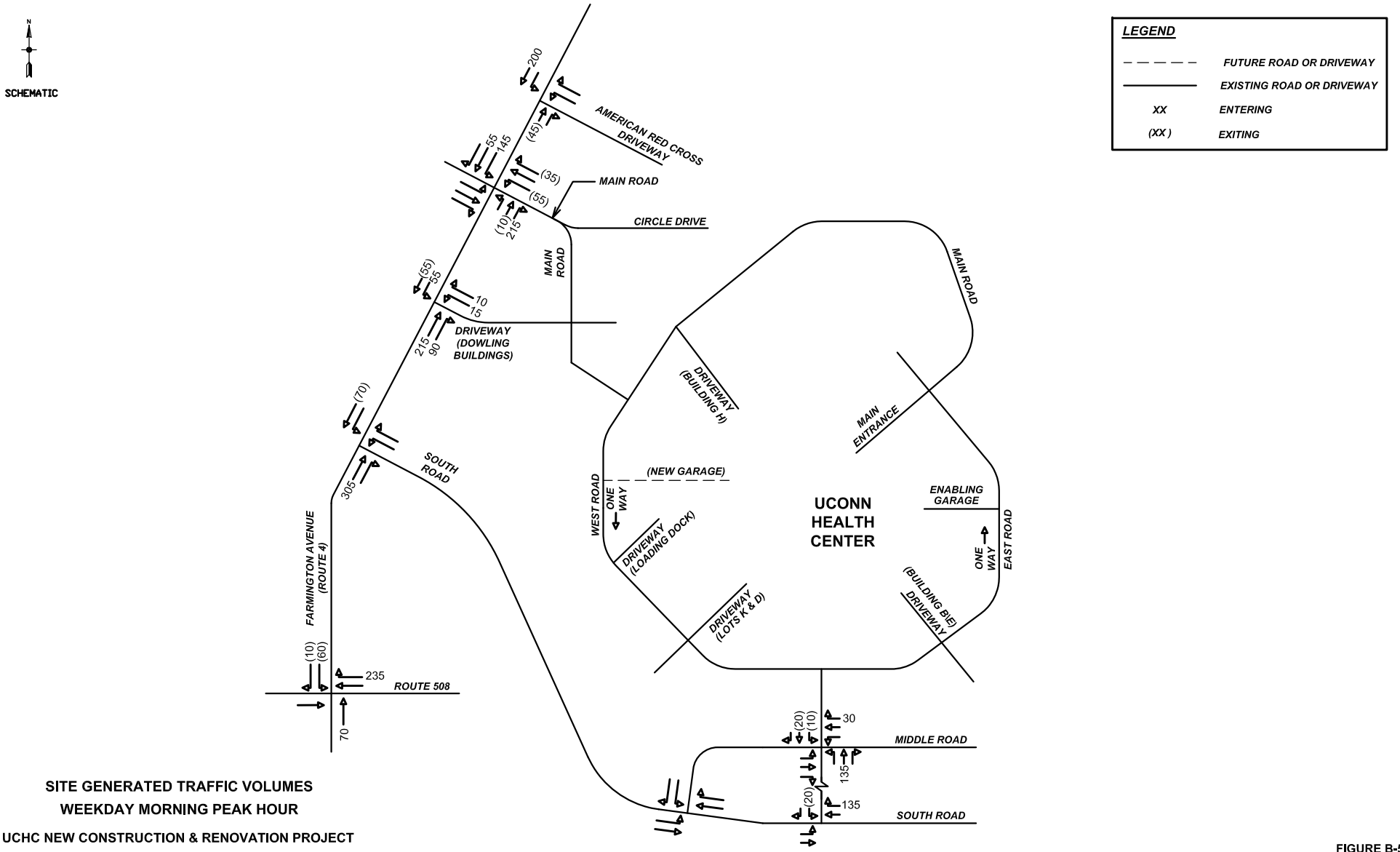


NO BUILD TRAFFIC VOLUMES
WEEKDAY AFTERNOON PEAK HOUR

UCHC NEW CONSTRUCTION & RENOVATION PROJECT - EIE
Farmington, Connecticut

FIGURE B-4

MILONE & MACBROOM, Inc.

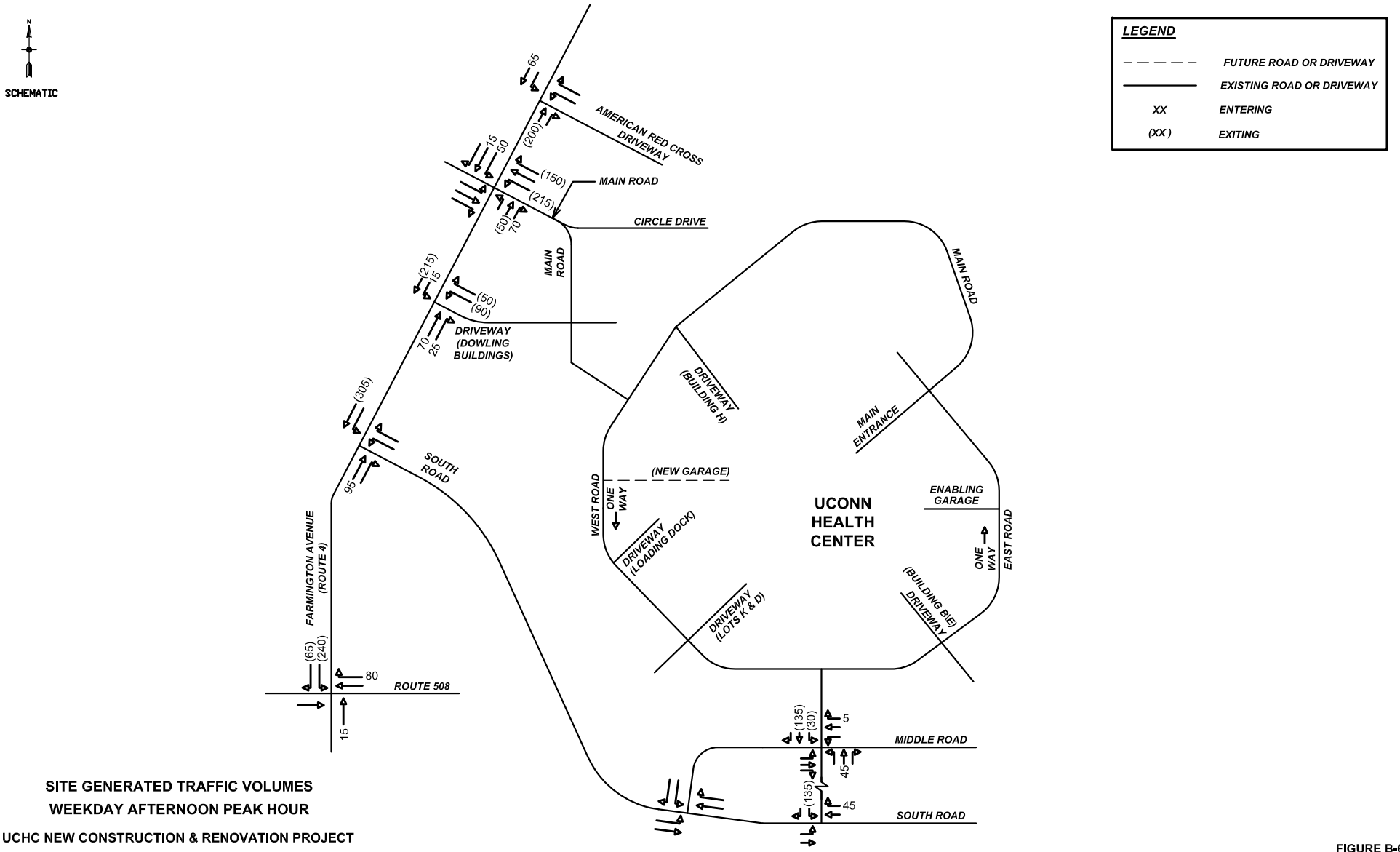


SITE GENERATED TRAFFIC VOLUMES
WEEKDAY MORNING PEAK HOUR

UCHC NEW CONSTRUCTION & RENOVATION PROJECT
Farmington, Connecticut

FIGURE B-5

MILONE & MACBROOM, Inc.

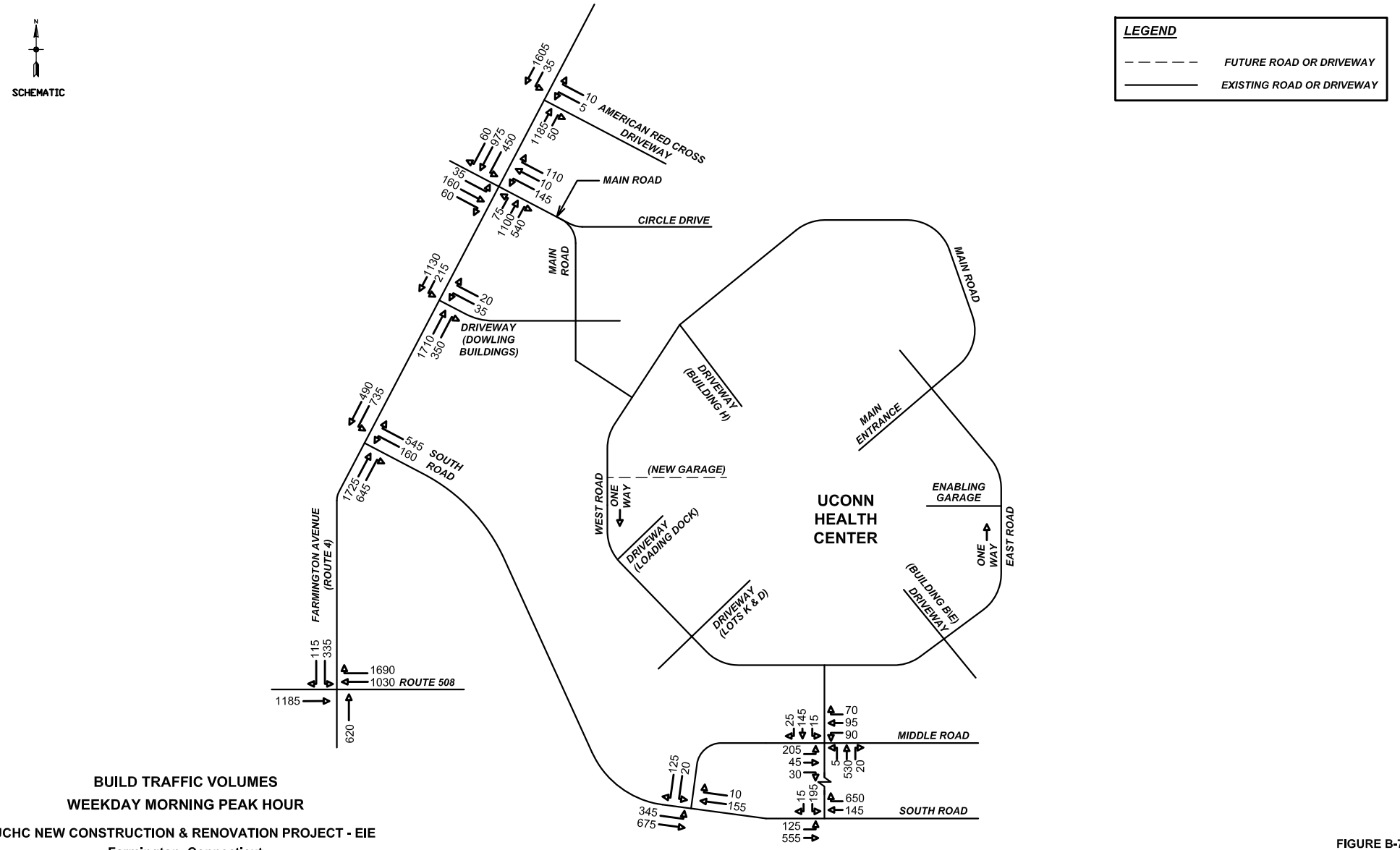


SITE GENERATED TRAFFIC VOLUMES
WEEKDAY AFTERNOON PEAK HOUR

UCHC NEW CONSTRUCTION & RENOVATION PROJECT
Farmington, Connecticut

FIGURE B-6

MILONE & MACBROOM, Inc.

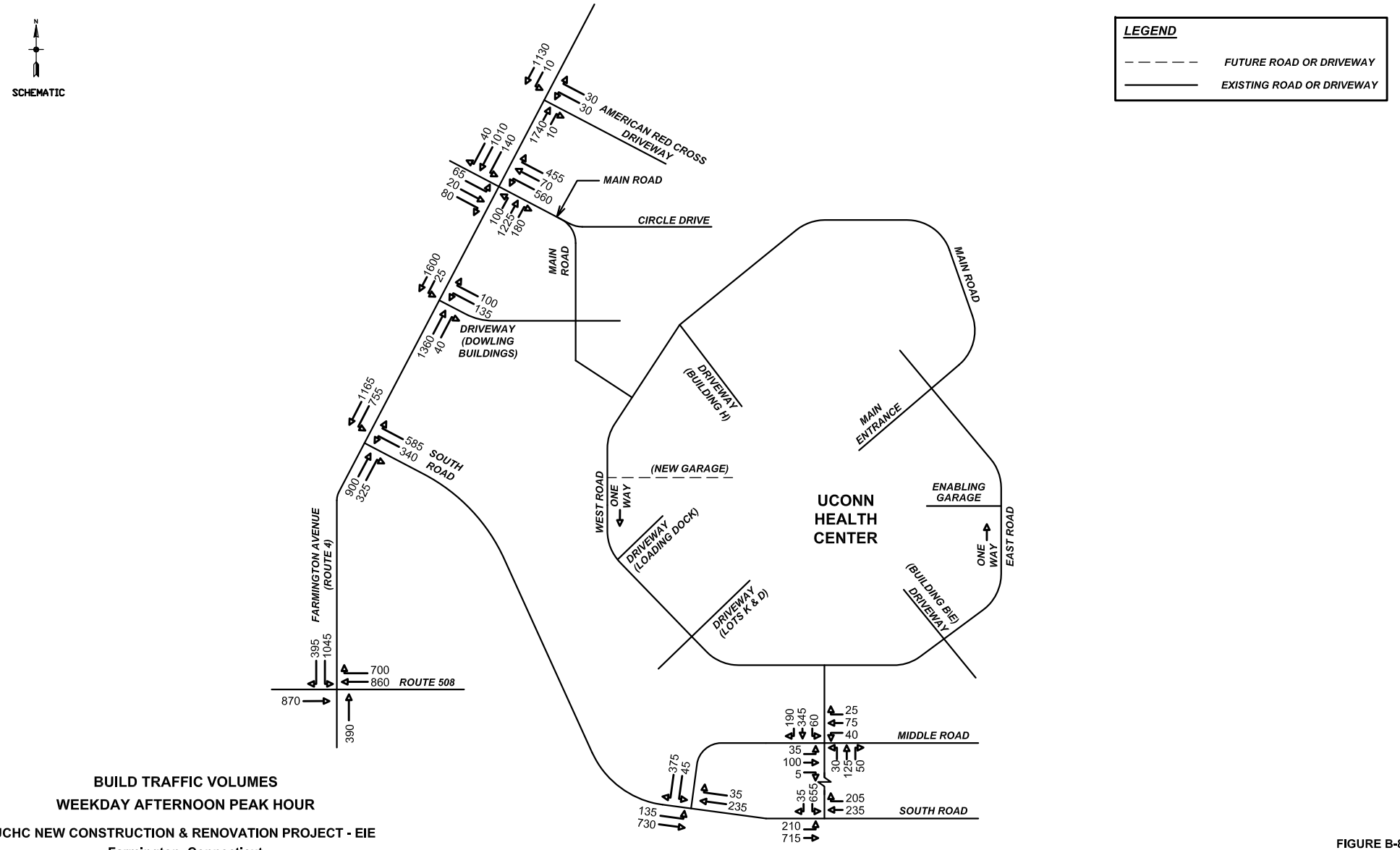


BUILD TRAFFIC VOLUMES
WEEKDAY MORNING PEAK HOUR

UCHC NEW CONSTRUCTION & RENOVATION PROJECT - EIE
Farmington, Connecticut

FIGURE B-7

MILONE & MACBROOM, Inc.



BUILD TRAFFIC VOLUMES
WEEKDAY AFTERNOON PEAK HOUR

UCHC NEW CONSTRUCTION & RENOVATION PROJECT - EIE
Farmington, Connecticut

FIGURE B-8

MILONE & MACBROOM, Inc.