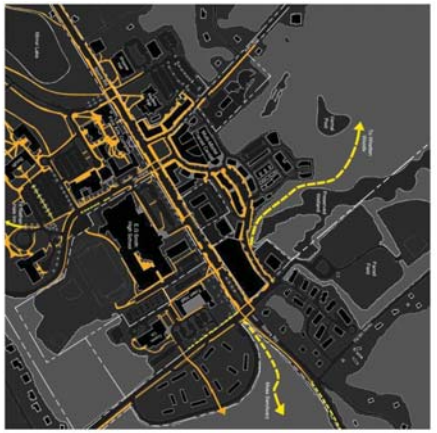
Downtown District Public Spaces and Green Infrastructure Master Plan

Mansfield, Connecticut



University of Connecticut Program of Landscape Architecture

June 2012

Downtown District Public Spaces and Green Infrastructure Master Plan

Mansfield, Connecticut

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Introduction

Project Purpose

This master plan study, which was jointly sponsored by the Mansfield Downtown Partnership (MDP) and the University of Connecticut (UConn), was intended to map, coordinate and communicate development of the Mansfield town center district's public spaces. As ground-breaking for the Storrs Center development project has finally taken place and progress is rapidly being made towards an opening of the first phase in August of 2012, we are at a critical point at which to examine the larger vision for a town center district that encompasses the UConn campus, the new commercial center and other MDP target areas, town/regional civic uses, protected open space, and residential neighborhoods.

The Storrs Center development project has been carefully planned to provide the critical mass and activity for a much needed town center for Mansfield, and also to control the effects of inevitable growth of our community and preserve its rural and natural setting. The new development has been strategically located in immediate proximity to the town's main civic uses, densest residential neighborhoods and the University of Connecticut's flagship Storrs campus, completing a vital set of mixed uses to create a true downtown district for our community.

While much attention has been placed thus far on the logistics of creating the buildings, streets and parking for the new development, ultimately it will be the outdoor **public spaces** these structures help define that will form an enhanced sense of center and community identity – the town square, the Storrs Road greenway, the Village Street. A rich variety of outdoor environments, from green spaces and urban plazas, to pocket parks, recreation facilities and complete streets that serve pedestrians, bikes, transit and cars, is coming together to serve the public realm. From this lively central core, we will also have access to the peace and beauty of the rural and protected natural landscape through trail head connections, scenic roads and biking and running routes.

The study has been framed through the emerging concept of **green infrastructure**, a new way of thinking about infrastructure as both: 1) a comprehensive and linked system of public, outdoor, landscape spaces and corridors, and 2) environmentally sustainable ways of providing traditional infrastructure systems such as stormwater management and transportation.

Framing the study through the concept of green infrastructure provides a comprehensive approach for the developing town center district's public spaces, and also emphasizes the many sustainable features and strategies that are actively being integrated into the new development. This includes not only the new development area of the Storrs Center and related town projects, but also work being done at the University in the way of sustainable campus development as it contributes to the town center district quality and identity.

The specific purpose of the study is to *coordinate*, *communicate* and *plan* the green infrastructure aspects of the town center district:

Coordinate: With so many different entities each with different public space resources and each pursuing different projects in the area, including the University of Connecticut; Region 19 School District, Joshua's Trust; Town of Mansfield and downtown master developer LeylandAlliance, there is no one master planning effort or document that is tracking them all and making sure that they are coordinated as a whole. This study provides an overall mapping and snapshot of the plans for the whole downtown district as a basis for general coordination between the projects and a way to view them in their larger context.

Communicate: There is a need to have a comprehensive picture of the downtown district's whole system of open space for communication to townspeople and the public. The focus has been on the small area being developed for the downtown, but there are many other facets of the town center district that have attractive open space opportunities and linkages, as well as other areas targeted for development or redevelopment. This will not only provide information to the public, but will encourage support and promotion of the improving downtown district. This information can be used in the town (parks and recreation, planning departments), MDP and University (master plan, visitor center, alumni) web pages for a variety of audiences with potential interest in the downtown district including visitors, residents and community members about our downtown public spaces, open space connections and green infrastructure network.

Plan: The study offers recommendations for programming needs for proposed open spaces such as the town green and for other uses not yet planned. Prior to the study there were several ideas circulating for needs such as a playground, a space for the farmer's market, connections to the new high school athletic facilities, bicycle provisions, trailheads, etc., which can be better planned with a district-wide look rather than as individual elements or needs. Gatherings of key downtown stakeholders were incorporated into the study process to further develop these ideas and gain critical input from a range of interests.

The purpose of the project is not to provide specific site-based design for new elements or spaces, although conceptual plans for a few key areas are provided to illustrate possible solutions.

Process:
The project has been led by University of Connecticut Associate Professor of Landscape Architecture Kristin Schwab, assisted by two senior undergraduate landscape architecture student interns, Roger Engle and Devon Lagasse, starting in the summer of 2011. The project consisted of the following steps: 1) data collection, inventory and base mapping; 2) analysis and draft plan development; 3) an initial stakeholder workshop to gather input; 4) plan development incorporating input from the stakeholders; 4) a final presentation of the plans to a second meeting of stakeholders September of 2011. Subsequently, the study was presented to the MDP Planning & Design and Advertising & Promotion Committees and approved by the MDP Board of Directors in February of 2012, and was presented to the Mansfield Town Council in March 2012. This final document has been reviewed by and incorporates comments from LeylandAlliance's Lou Marquet and Macon Toledano, MDP Executive Director Cynthia van Zelm, and UConn campus planning and Town of Mansfield staff.

Framework: Open Space/Public Space and Connectivity

The structure of the Downtown District Public Spaces and Green Infrastructure Master Plan is guided by the following overarching concepts and basic components: the urban transect, smart growth and green infrastructure.

The idea of the **urban transect** (Figure 1) is that, unlike in historical cities, where there was a more distinct edge that separated the dense and built-up city from the undeveloped countryside, our modern-day built environment has a continuum of development that goes from very dense built-up centers with public urban outdoor spaces connected by streets, through a gradually decreasing density with more spread out development, larger public and private green spaces, eventually reaching the undeveloped or rural countryside. Contemporary conventional development has given us the "one-size-fits-all" approach to big-box, road- and surface parking-heavy, leap-frog development, which is creating un-centered sprawl and compromised environmental conditions. The emerging community planning model of '**smart growth**' is an attempt to strengthen the sense of center and community in a place, while at the same time preserving valuable corridors and surrounding rings of open space, by encouraging dense development and redevelopment in centralized areas of existing populations and infrastructure.

Mansfield's particular lack of center can be traced, thankfully, not to sprawl, but more to its strong historic identity as a set of smaller villages that exist in the relatively well-preserved rural/natural landscape mosaic of the larger town and Quiet Corner region (Figure 2). But as the University of Connecticut has grown in size and stature, the village of Storrs has become the town's central hub of mixed civic, institutional and economic activity. While some townspeople have been concerned that new development will compromise our rural character and heritage, it is important to emphasize:

- the unique role and inevitable growth of our community as home to the state's flagship University
- the smart growth principles being followed
- the importance of remaining vigilant in protecting valuable and significant open space resources.

Through the **green infrastructure** approach to sustainably designed, planned and linked open space/public space, we can attain a livable and vibrant new town center that provides a much needed heart for our community. The *proximity to center* diagram in Figure 3 maps walkable and bike-able destinations in concentric rings around the town green, which will be the central public space for the district.

Four Components:
The plan has four basic components that are central to the green infrastructure system that it seeks to map, coordinate, enhance and develop planning and design recommendations for:

- **Public Outdoor Spaces and Open Space** These are the 'destinations' in the green infrastructure system. At the downtown core scale they are the public spaces such as the town square, plazas and greens. These spaces can be more open-ended in their use – such as an open lawn area, or they can be more prescriptive and programmed in their use – such as a playground or athletic field. In the surrounding rural and natural areas the destinations are the protected open spaces owned by the town, the state or Joshua's Trust, which are managed but not heavily programmed or maintained.

- **Connections** These are the corridors that link the public and open spaces. They may be roads, trails, bus routes, bikeways or landscape elements such as greenways or streams. The goals for connectivity include strengthening pedestrian and multi-modal access and wayfinding and greenway linkages in a networked system throughout the landscape.

- **Green Elements** These are sustainable landscape and site treatments such as stormwater biotreatment, which offers a vegetative, infiltrative on-site alternative to conventional catch basins which concentrate pollutants, create erosion, siltation and flooding problems for downstream, offsite locations. They also include street trees and other plantings that provide cooling, shade, wind protection and other environmental benefits, as well as other plant, soil and water-based elements that provide beneficial and cost-effective services.

- **Community Character Elements** These are things like public art, unique architectural features or materials such as local stone, commemorative features, place names or signage which express and convey the distinctive personality of our community and the regional/local character of our landscape and heritage. The desire to retain and build on an authentic sense of Mansfield has been a strong message in the countless public meetings that have led up to our new town center development and this is especially important in developing the character and function of our public spaces.

Scales of the Study

The scales of the study were selected to place the downtown area of Storrs Center in its larger 'district' context of the surrounding countryside. Starting from an outermost scale, which effectively covers the northeastern quadrant of the town, and working into the downtown area itself, one is able to see the transition from landscape as natural or agricultural open space to landscape as cultural, social public space. Input from Mansfield town planner Greg Padick and others encouraged spanning from the Willimantic River /town line as the western border, to the Fenton River as the eastern border of the largest **'macro scale'** view of the district (Figure 4). To the north, we included the Four Corners area that captures the proposed sewer/water project and the MDP's Four Corners development focus area. To the south, we included the Spring Hill village area of the former town hall and Mansfield Historical Society.

The '**meso scale'** view (Figure 5) of the district includes the main UConn campus, Horse Barn Hill, the King Hill Road MDP development area, and the residential neighborhoods immediately surrounding campus. This scale still has a predominant mosaic of undeveloped land into which the development is set.

The **'micro scale'** (Figure 6) includes the southern edge of campus, the new Storrs Center development area; the civic/institutional complex of the town hall, Mansfield Community Center, EO Smith High School, Storrs Post Office; as well as the Moss Sanctuary, Farrell Fields and residential uses just south of the town center. At this scale, the undeveloped open space to the east and south of the downtown area contrasts against the residential and campus development to the west and north of the downtown. The master plan for the new Storrs Center development is overlaid on to the aerial at this scale.

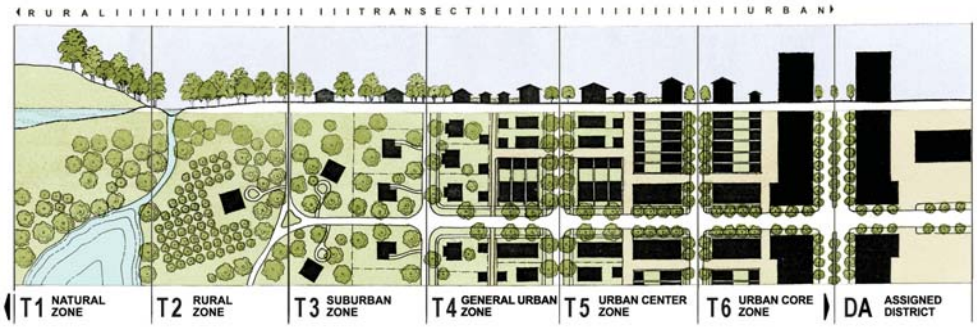
Figure 1 Green Infrastructure Across the Urban Transect

Open space and public space types from rural to suburban and central urban settings

Preserved Open Space

Recreation

Central Square



Green infrastructure connection types from rural to suburban and central urban settings

Woodland Trail

Bike Path

Urban Sidewalk

Figure 2 Downtown Mansfield's Regional/Community Context

Connecticut's Cultural & Tourism Regions

1. Litchfield Hills
2. Housatonic Valley
3. Coastal Fairfield
4. Greater New Haven
5. Waterbury
6. Central Connecticut
7. CT River Valley & Shoreline
8. Mystic
9. Greater Hartford
10. Heritage Valley
11. **Quiet Corner**

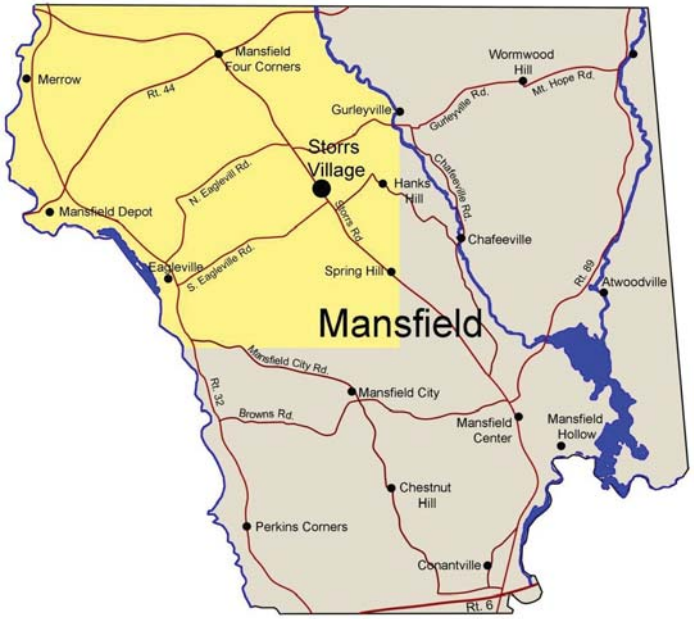
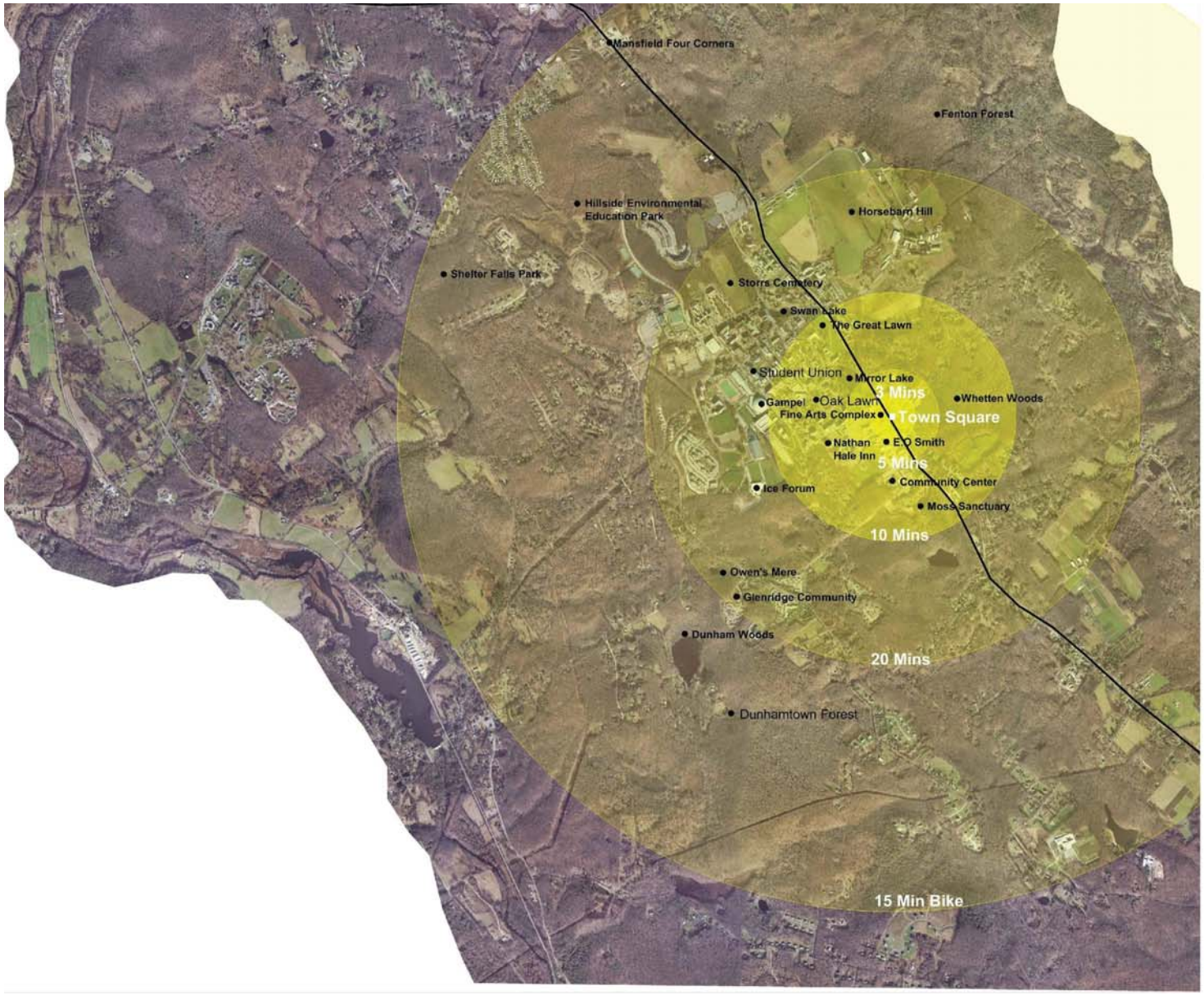


Figure 3

Mansfield Downtown District
Green Infrastructure

Macro Scale:
Proximity to Center



- **10 Minute Walk** To Downtown

Moss Sanctuary

Mirror Lake/The Great Lawn

- **20 Minute Walk** to Downtown

Horsebarn Hill

Storrs Cemetery

- **15 Min Bike** Ride to Downtown

Shelter Falls Park

Mansfield Community Gardens

0 1000' 2000' 4000'

Sources
Town of Mansfield: 2006 Aerial
September 2011

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Figure 4

Mansfield Downtown District Green Infrastructure

Macro Scale:

Development Areas

1. Storrs Center
2. Four Corners
3. King Hill Road

0 1000' 2000' 4000'

Sources
Town of Mansfield: 2006 Aerial
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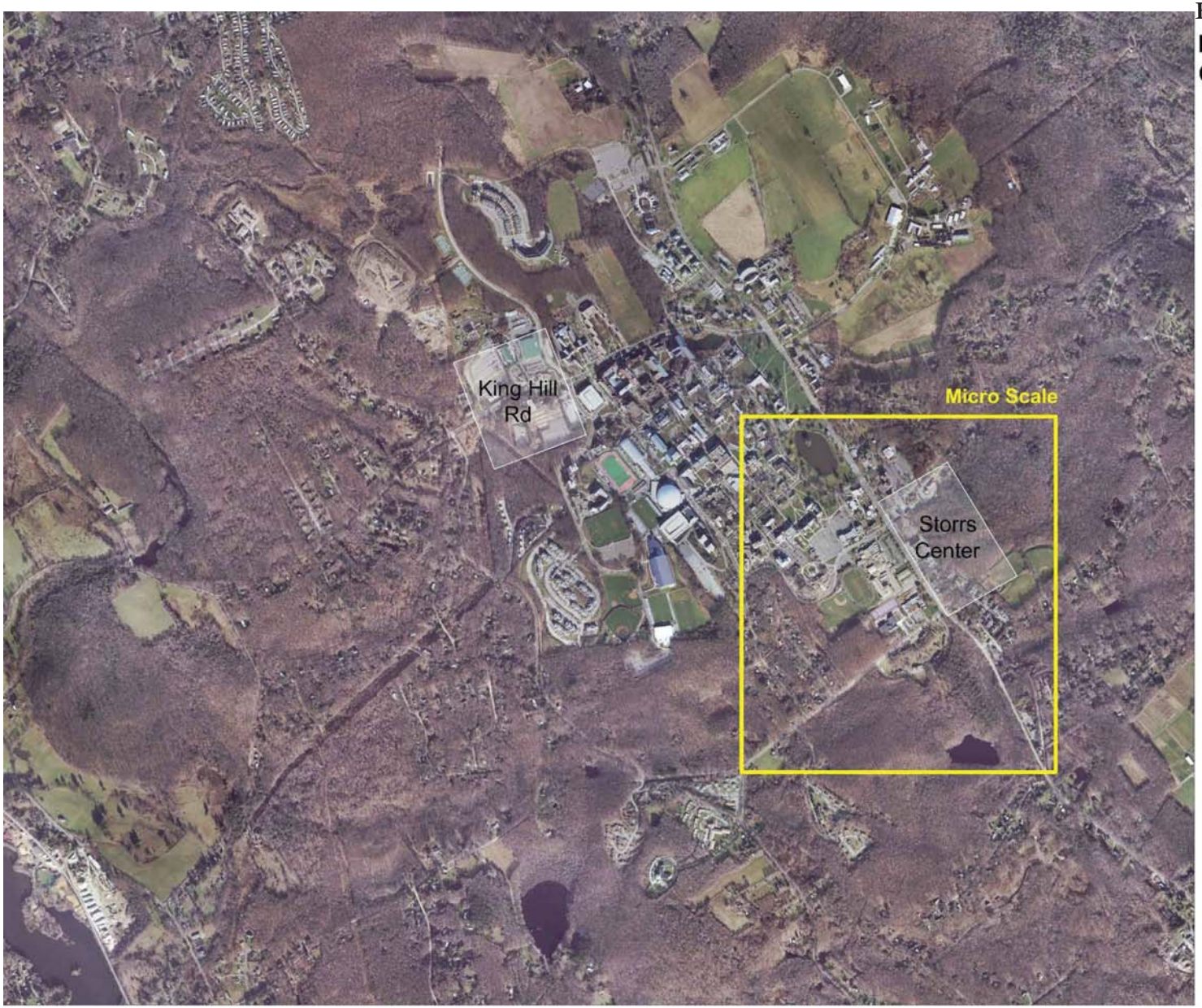


Figure 5

Mansfield Downtown District
Green Infrastructure

Meso Scale:

Development Areas

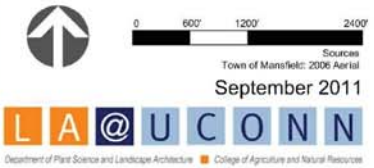
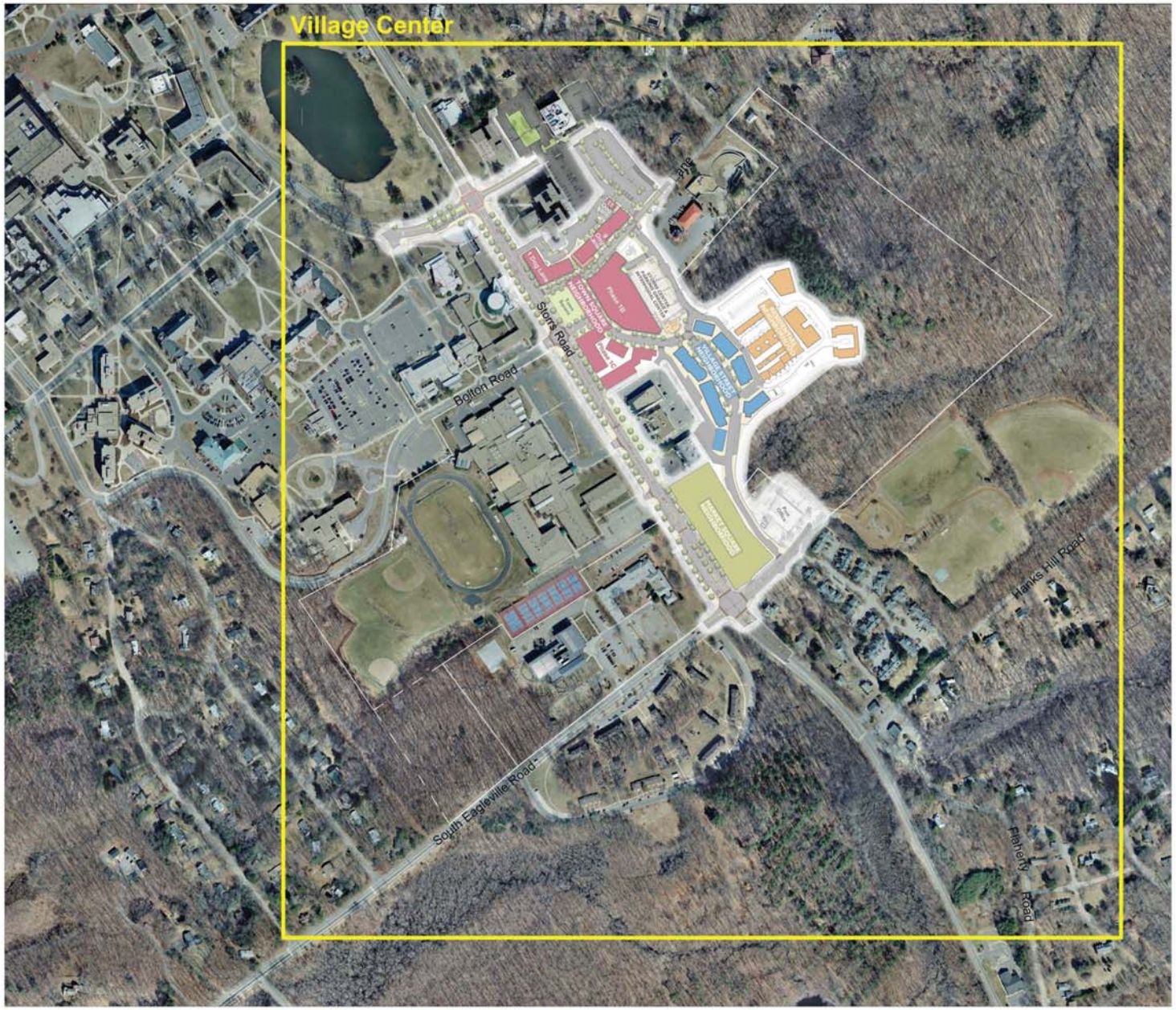


Figure 6

Mansfield Downtown District
Green Infrastructure

Micro Scale

Downtown Development Area



0 200' 400' 800'

Source: AES 2009 Aerial

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District Mapping & Analysis

In the contextual scales of the study that look at the larger district, our effort focused first on collecting data for and mapping of important natural and cultural land systems in relation to downtown district development areas as critical context for the mapping of open space and trail linkages. This data came from both the town-wide inventory maps and University planning documents.

Natural Systems Inventory

Hydrological systems are major factors in both development limitations as well as open space value and interest. Our map focuses on the water-related systems that are present in the downtown district at the macro scale, including the main watershed boundary that defines Willimantic River and Fenton River drainage basins; rivers, ponds and streams; and wetland soils (Figure 7).

Additionally we are including maps from the town's 2006 Plan of Conservation and Development which show Scenic Resources & Classifications, Preserved Open Space & Trails, and Agricultural/Forestry/Natural Diversity Resources for the whole town, with the downtown district highlighted on them (Figure 8). The University's mapped natural resources are illustrated in the Forest Tracts and Fenton Forest Tract Hiking and Biking Trails maps, while a representation of the town's extensive system of park and preserve mapping and trail guides is provided with the most recent and downtown-proximate property, Moss Sanctuary (Figure 9).

Cultural Systems Inventory

At the closer meso-scale, we focused our cultural inventory on the types of land uses present in relation to the Storrs Center and King Hill Road downtown development areas. The major land uses mapped are residential, university campus (including all land owned by UConn), recreational and protected open space, municipal/institutional, and commercial/mixed use development.

Additionally, we are including maps from the Town's 2006 Plan of Conservation and Development which show land use Zoning districts, Planned Development Areas, Historic Villages, and Street Classifications and Bicycle Routes at the whole-town scale. Representing the campus, a plan from the University's 2010 Landscape Master Plan is included, which maps the campus in terms of landscape districts of unique character and use, as well as a 2005 plan developed for a campus-related bicycle network.

These cultural and natural inventories form the basis for the mapping of our green infrastructure of open space and connectivity elements in relation to the three downtown focus areas, which zooms from the outer macro scale of the district to the micro scale. This mapping is primarily focused on those protected open spaces and trail systems that exist but also provides a good overview for targeting open space and trails which might be desirable in relation to the downtown district in the future.

Green Infrastructure: Open/Public Space

With the cultural and natural inventory as background data, a set of maps that illustrate the variety of open space and public space destinations present in the Downtown District was prepared at the macro, meso and micro scales of context. The wide range of types of spaces is illustrated with the images in Figure 13. In the maps, the open space parcels are laid onto aerial photographs within categories of Town of Mansfield, State of Connecticut, and Joshua Trust open space; University Forest; and cultural, recreational and agricultural lands. The distinction of *open space* here defines a legally protected natural state of the land, while the other lands identified nearer the center have human function as *public space*.

Viewing the downtown context at the macro scale (Figure 14) reveals a wealth of open space, agriculture and other undeveloped lands that surrounds the downtown in a strong network. An east-west continuum to the north of the downtown spans from the University owned Fenton River Tract, which connects with the Joshua Trust and other town and state owned open space, through the north part of campus with its Horsebarn Hill agricultural lands and Hillside Environmental Education Preserve, into Mansfield's Shelter Falls Preserve, UConn's North Eagleville Forest, to the agricultural flood plains and Mansfield's River Park along the Willimantic River. The planned Willimantic River Greenway and Blueway provides a promising vision for regional connectivity along this north-south riparian corridor.

At the meso-scale (Figure 15), the importance of the UConn campus and its rich cultural landscapes comes more into focus as a major opportunity for downtown public space connections. The Great Lawn and Mirror Lake landscapes of the "lower park" historic district of campus are iconic features that flow directly into the town center. The major campus cross-axial pathways, while well-articulated in parts of the center of campus, lack a strong spatial connection to the downtown through the Fine Arts and South Campus areas. Also at this scale, the very close proximity of the downtown to the town-owned Moss Sanctuary and Joshua Trust's Whetten Woods is evident, as well as the recreational landscapes of Farrell Fields, EO Smith High School, and UConn.

Finally, at the micro scale (Figure 16) the significant greenway that runs continuously along the west side of Storrs Road in front of the high school and the town hall can be seen as a major asset to the core of the downtown area, linking the future town square at the center with the campus landscapes to the north and the municipal landscapes to the south. A major opportunity here is to implement a better greenspace connection to the Community Center and its related outdoor recreation spaces through the existing parking lot now used for town hall visitors and employees, as well as the Storrs Farmers Market.

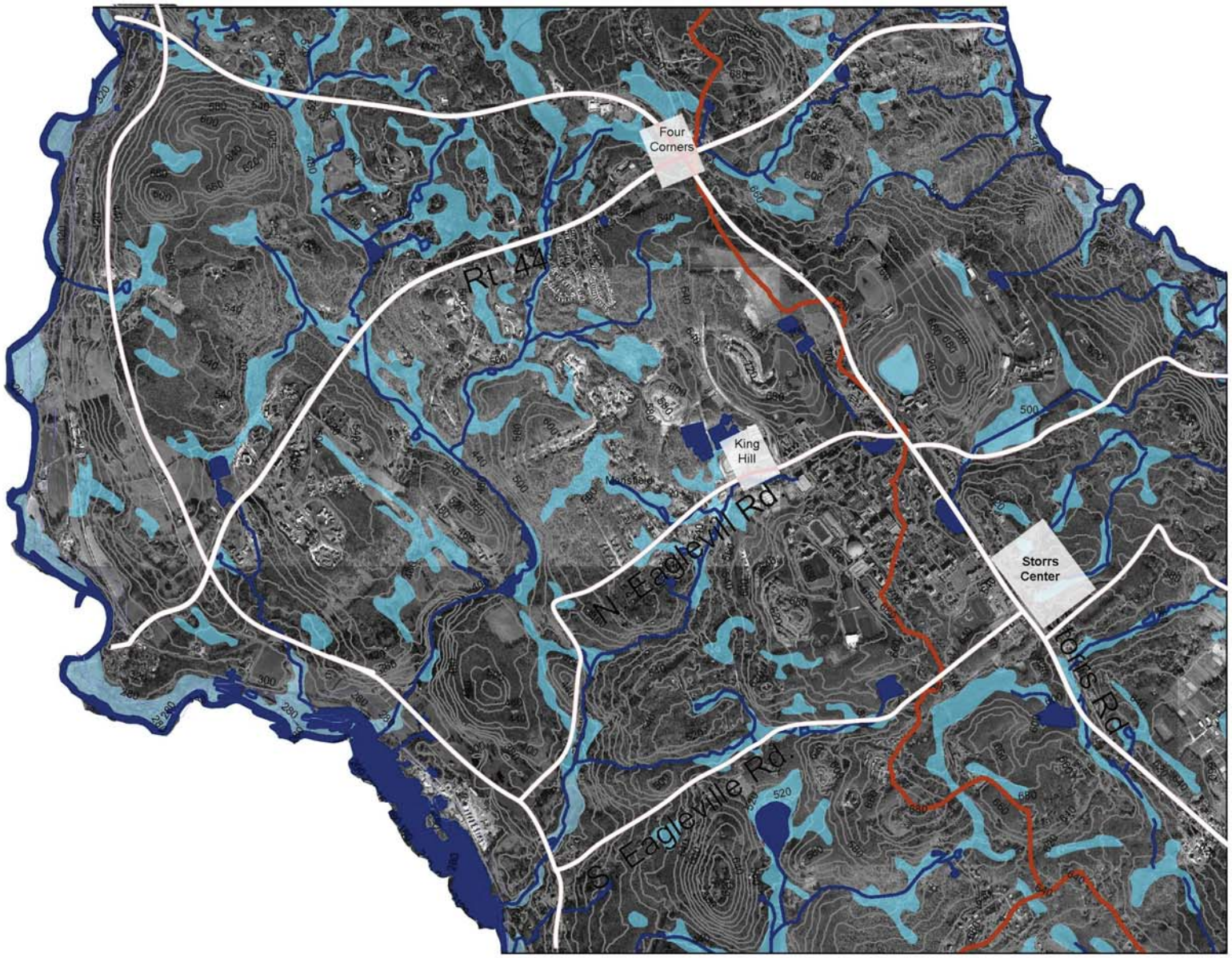

Figure 7
Mansfield Downtown District
Green Infrastructure

Macro Scale
Natural Systems

- Wetland Class Soil
- Waterbody/Stream
- Watershed Boundary
- Major Roads

0 850 1,700 3,400 5,100 6,800

Sources
Town of Mansfield: 2006 Aerial
CT DEP: Topography, Inland Wetland Soil, Hydrography

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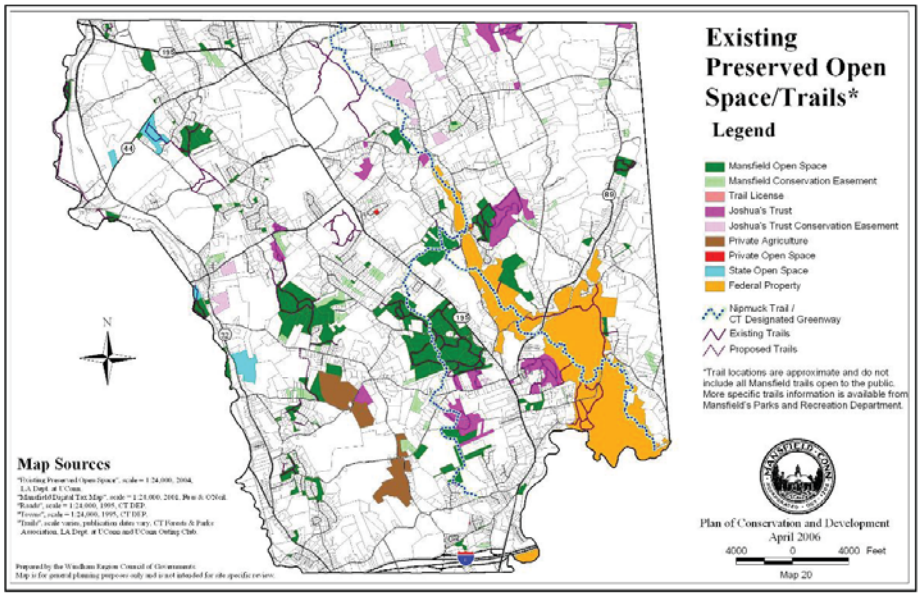
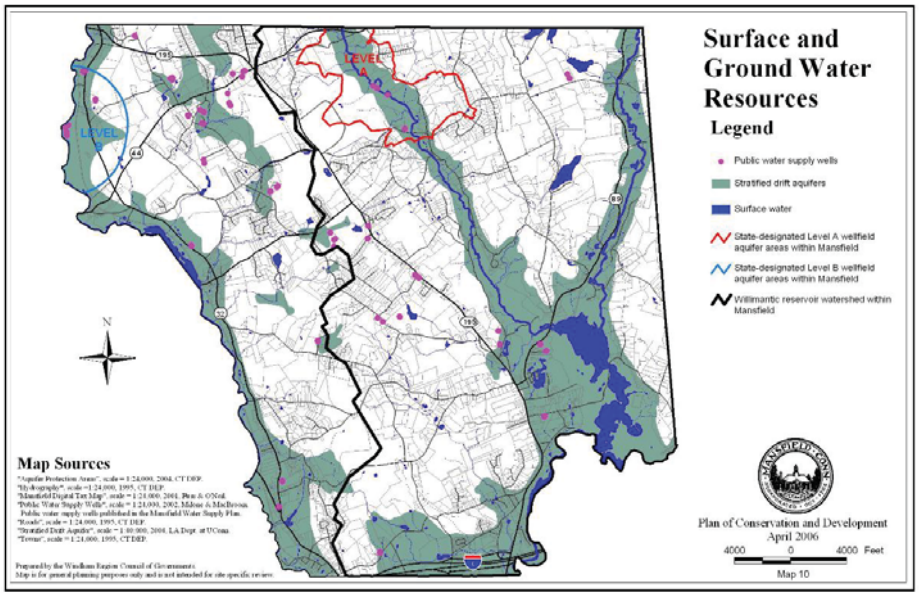
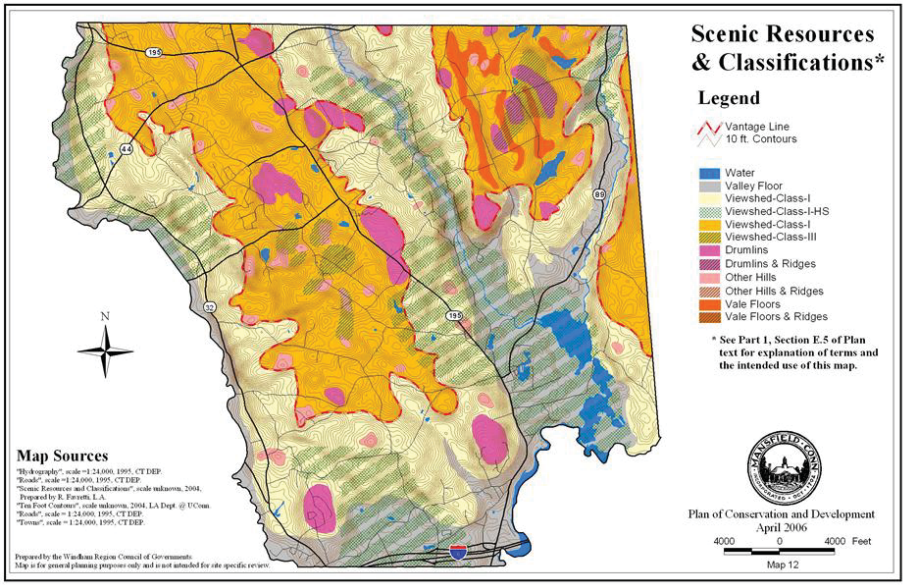
Figure 8 Natural Resource Inventory Maps from Mansfield's 2006 Plan of Conservation & Development







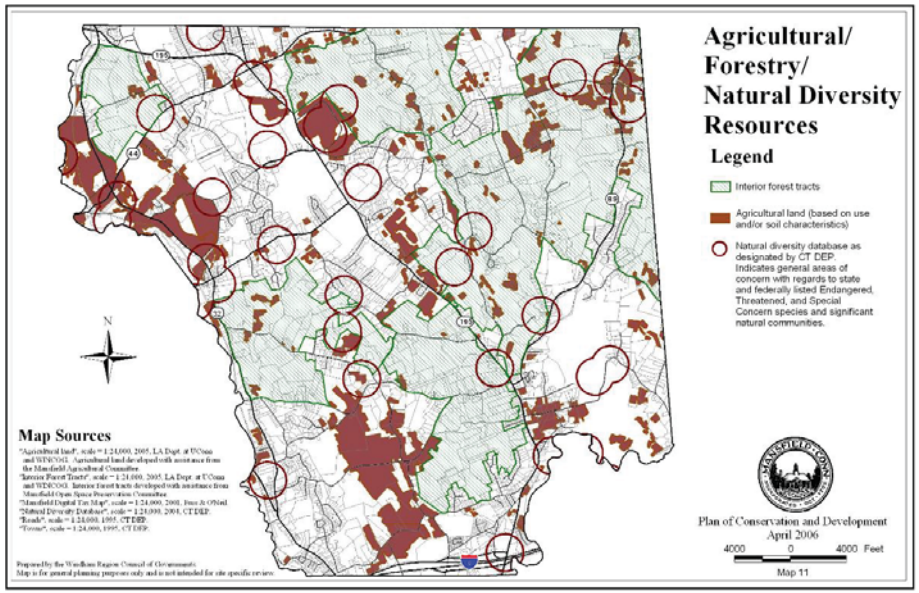
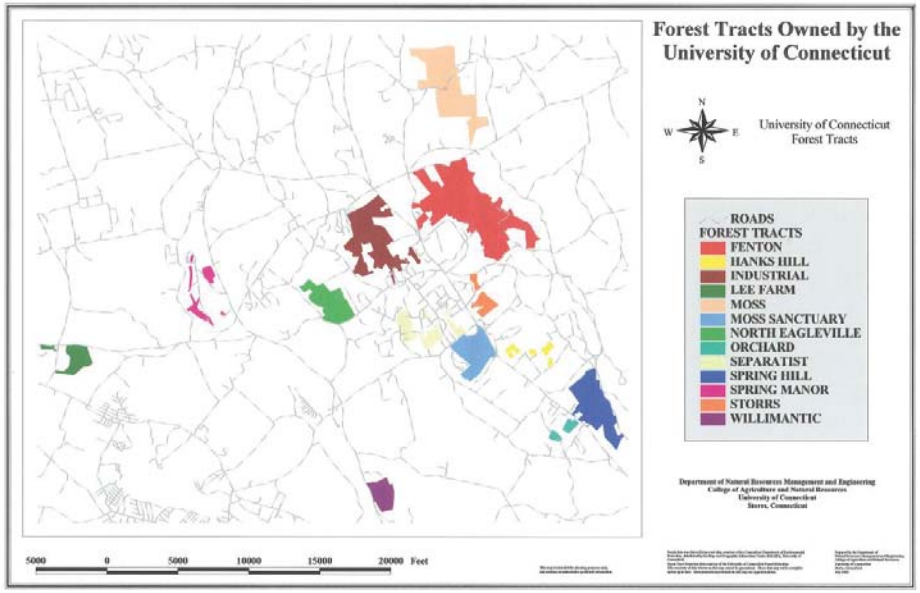
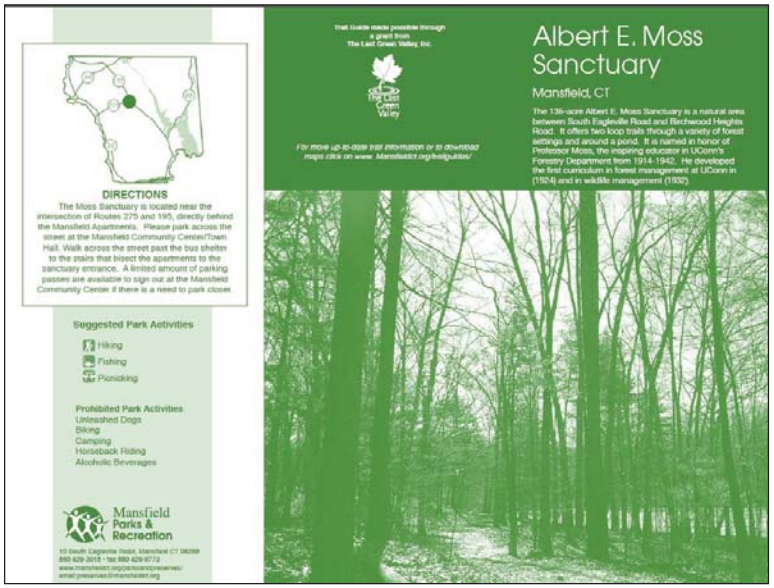
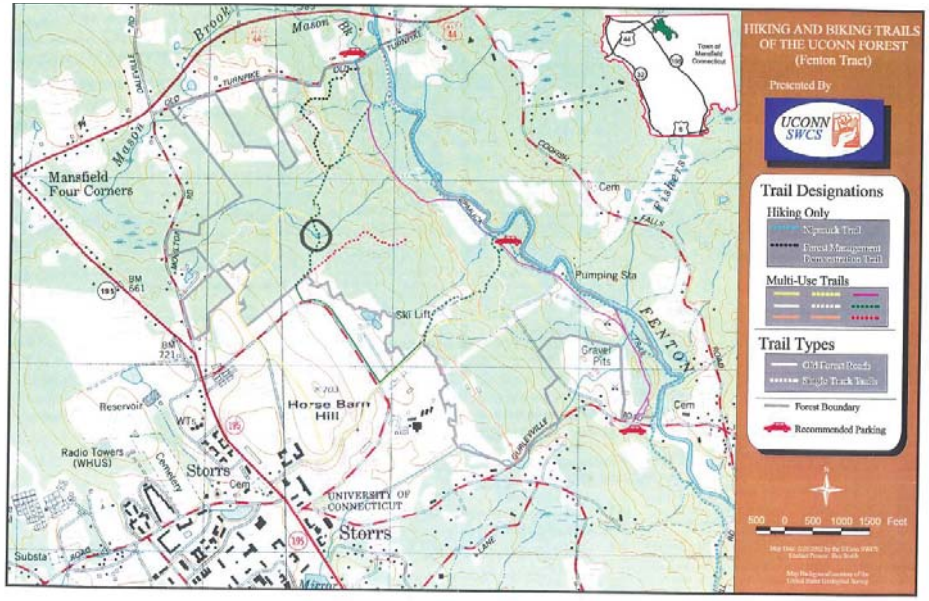


Figure 9 Natural Resource Inventory Maps of UConn and Town Open Space Properties







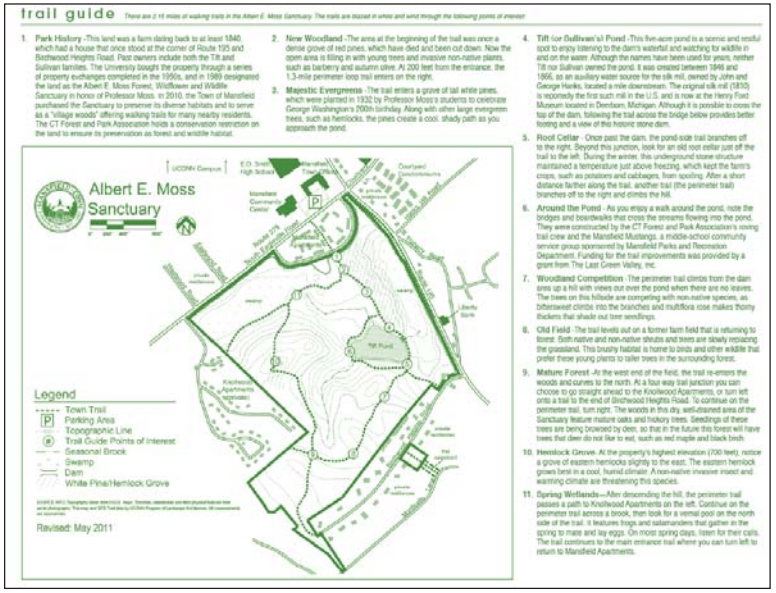


Figure 10

Mansfield Downtown District Green Infrastructure

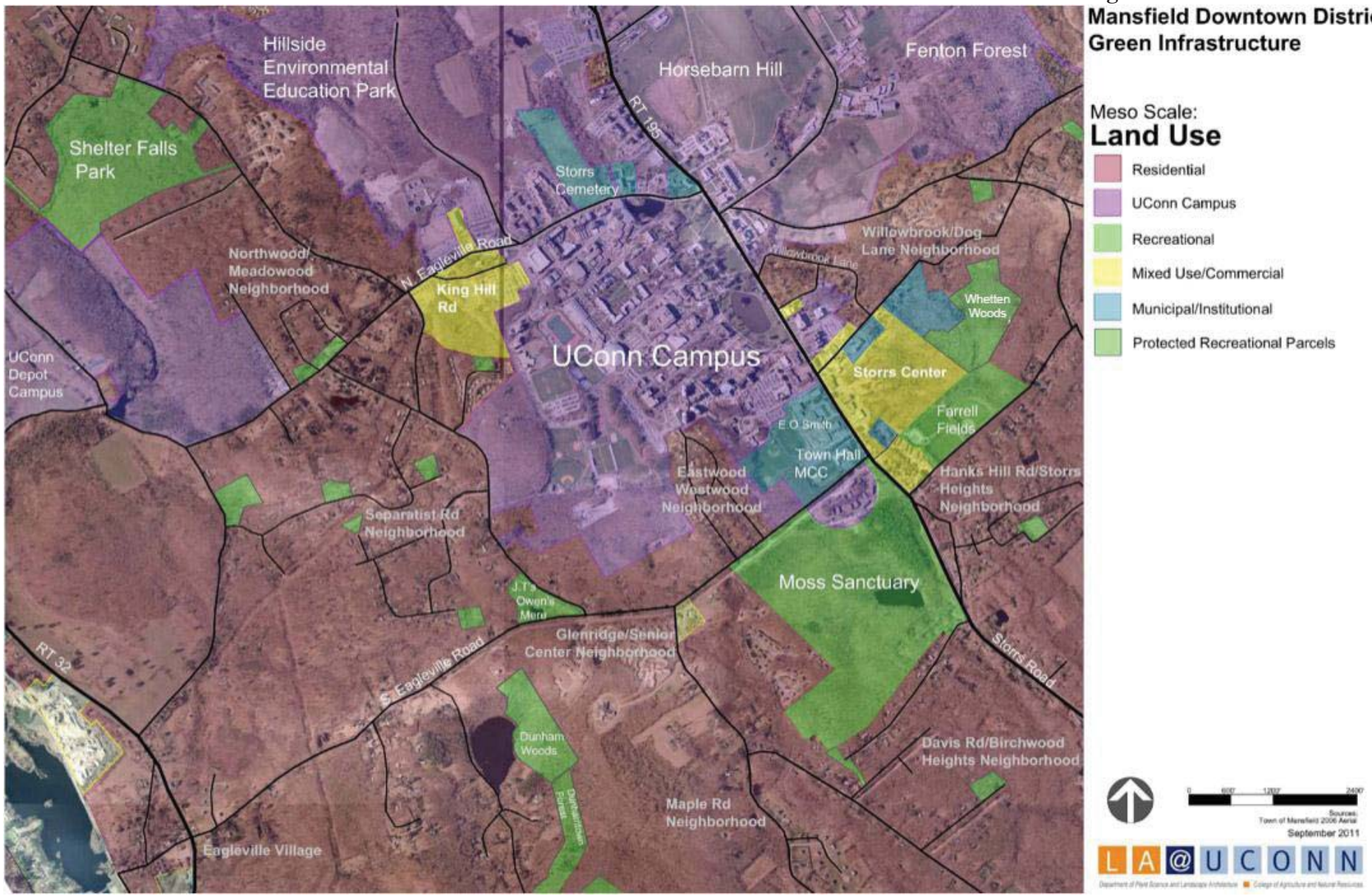
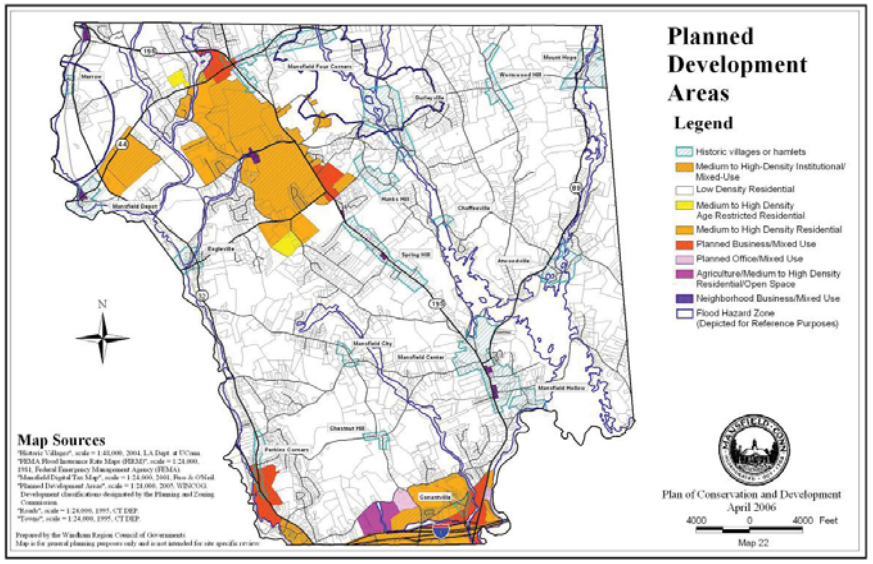
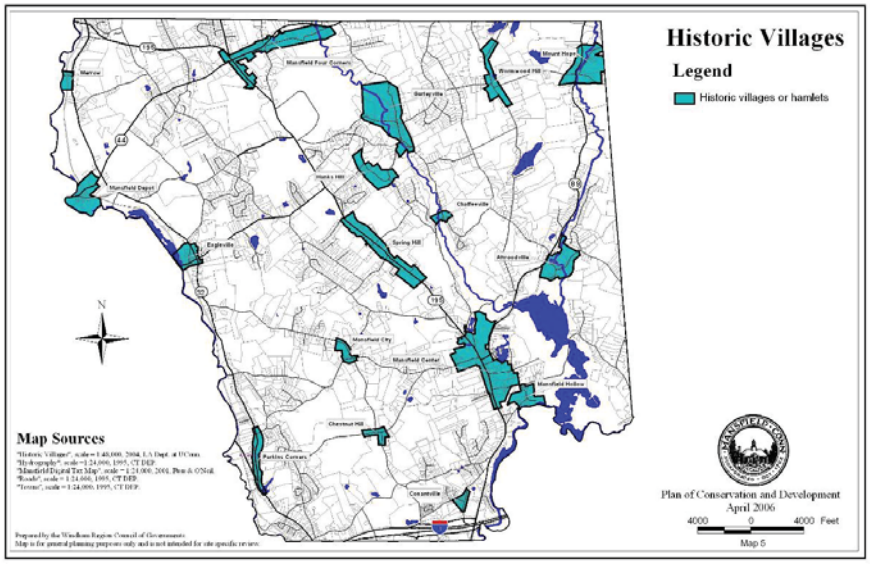
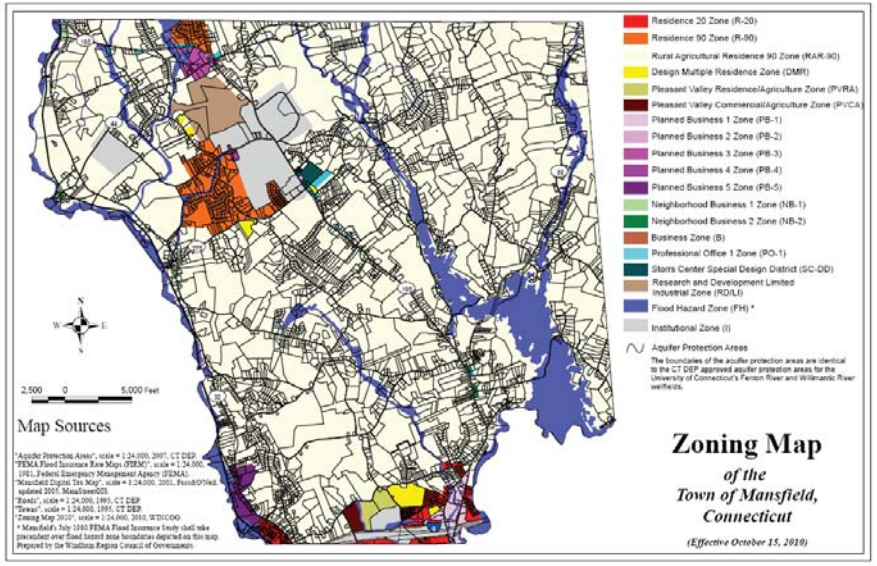


Figure 11 Cultural Systems Maps from Mansfield's 2006 Plan of Conservation & Development







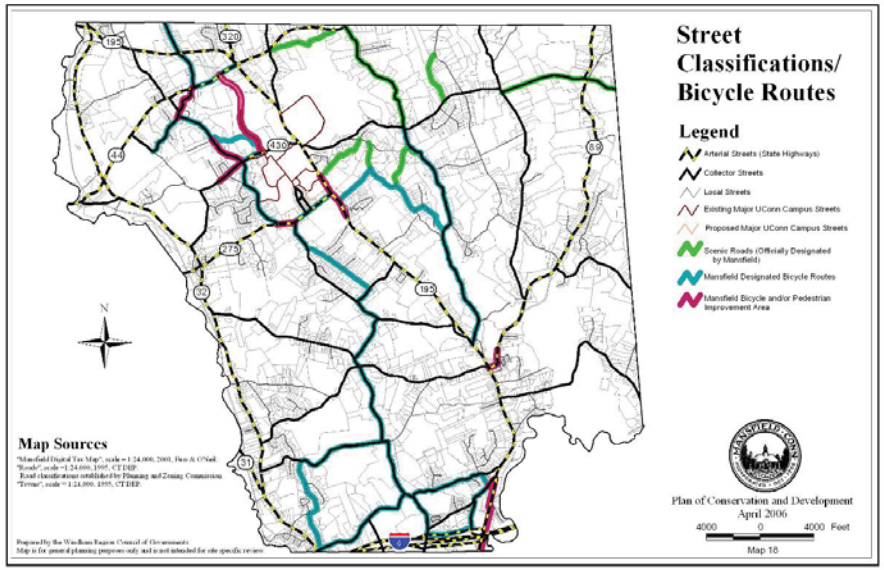
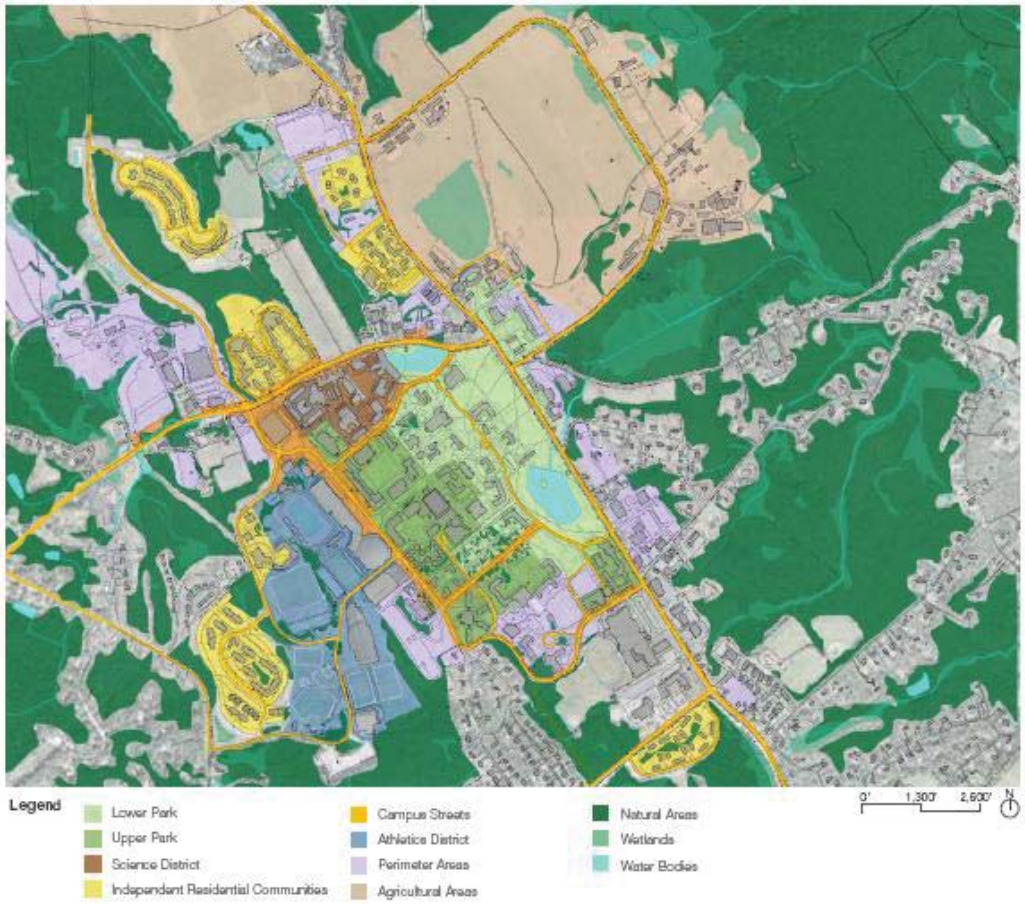


Figure 12 Cultural Systems Mapping of the UConn Campus

UConn's 2010 Landscape Master Plan's Campus Landscape Zones



EcoHusky Bike Plan

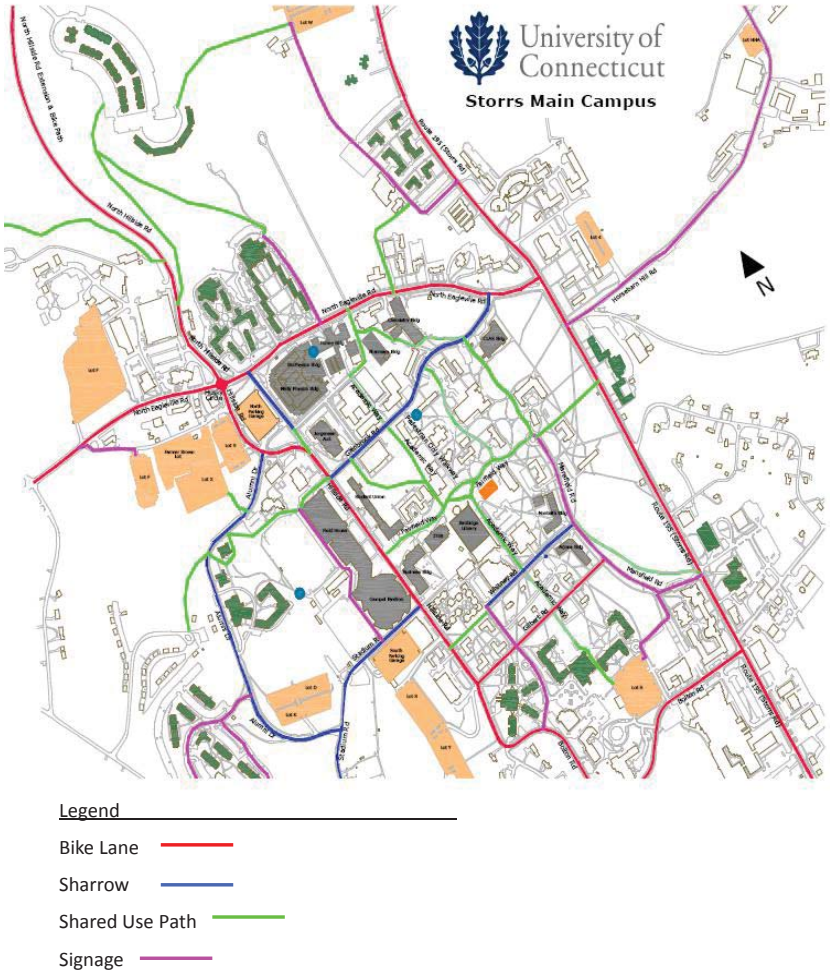


Figure 13 Mansfield Downtown District Green Infrastructure

Open Space & Public Space

Cultural – campus

Mirror Lake

Great Lawn

Oak Lawn

Cultural - town

E.O Smith Greenway

E.O Smith Greenway

Town Hall Greenway

Agricultural

Valentine Meadow

Horsebarn Hill

Mansfield Community Gardens

Recreational

Community Center Skate Park

Community Center Ice Rink

Farrell Fields

Figure 14

Mansfield Downtown District Green Infrastructure

Macro Scale

Open Space

- Mansfield Open Space
- University Forest
- State Open Space
- Joshua Trust Open Space
- Cultural Land
- Recreational Land
- Agricultural Land

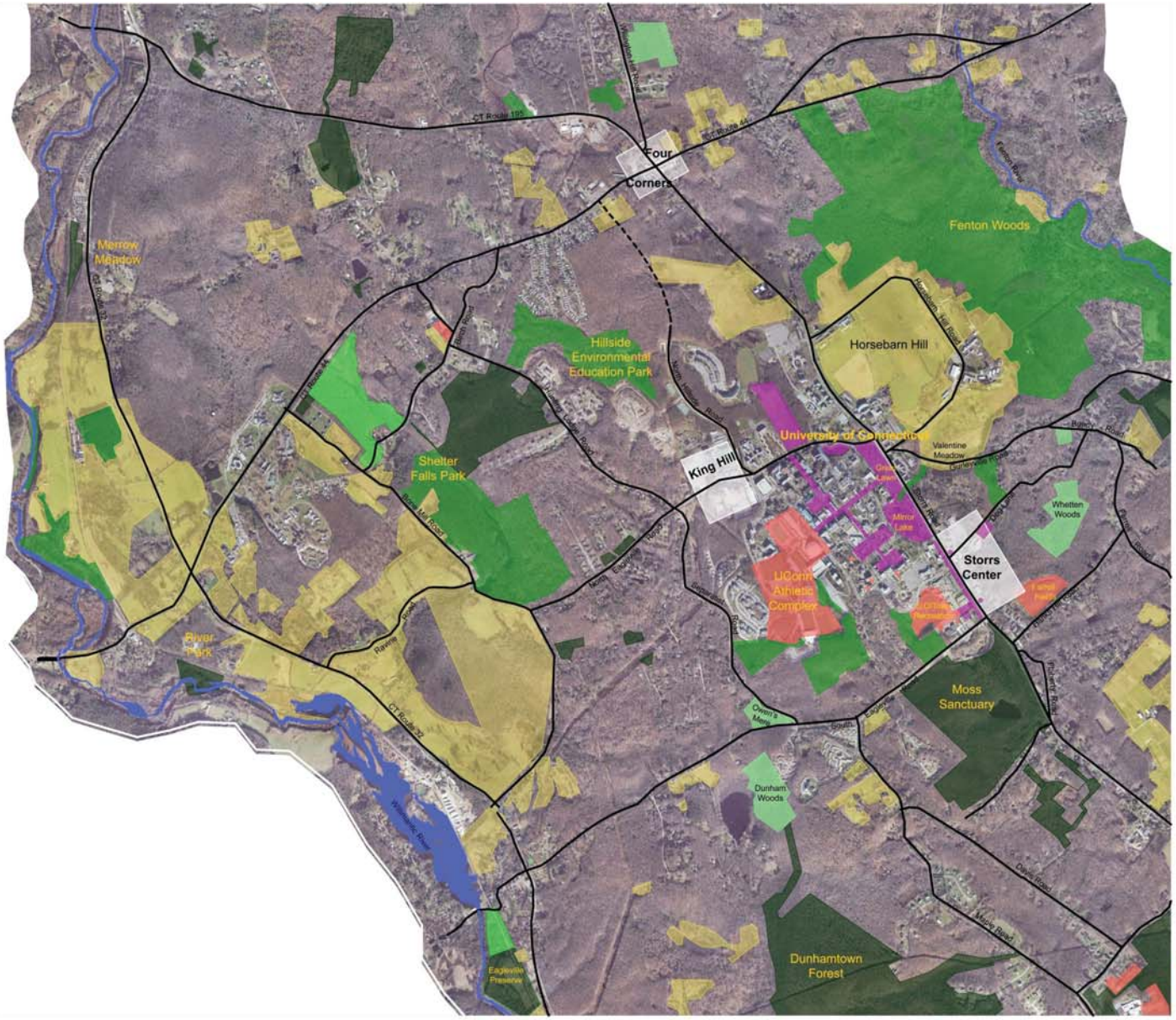
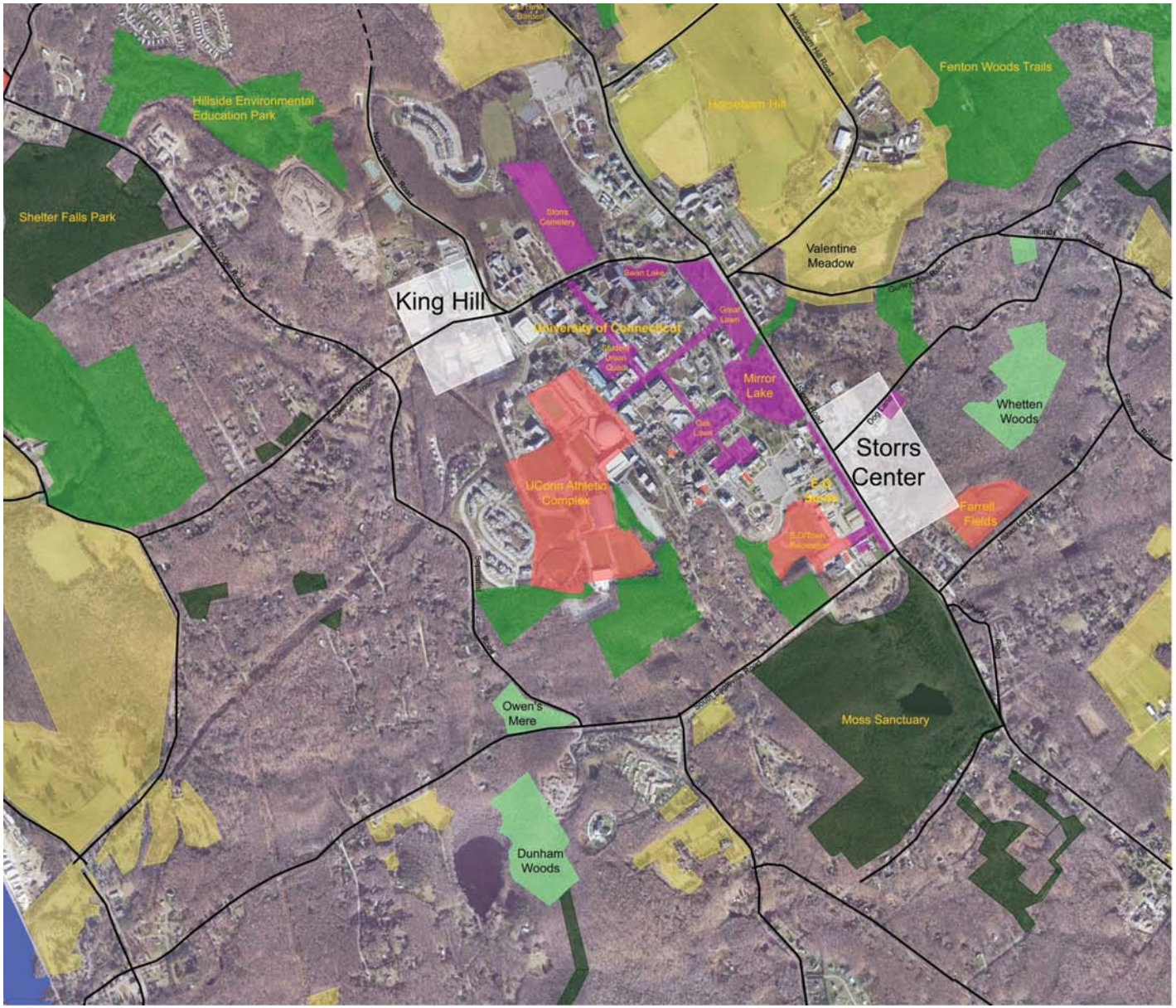


Figure 15

Mansfield Downtown District Green Infrastructure

Meso Scale

Open Space



- Mansfield Open Space
- University Forest
- State Open Space
- Joshua Trust Open Space
- Cultural Land
- Recreational Land
- Agricultural Land

0 600' 1200' 2400'

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Figure 16
Mansfield Downtown District
Green Infrastructure

Micro Scale
Open Space

- Mansfield Open Space
- University Forest
- Joshua Trust Open Space
- Cultural Land
- Recreational Land

0 200' 400' 800'

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District Mapping & Analysis

Green Infrastructure: Connectivity

Critical to the "green infrastructure" idea is that open space and public space destinations are highly connected and linked through a variety of transportation and movement modes, as well as green landscape corridors that provide relief from and visual appeal to the built environment. The range of connectivity that exists within Mansfield's downtown district green infrastructure is illustrated with the imagery in Figure 17, which documents road-related biking and walking routes, recreation trails through open space parcels, scenic roads as specially designated by the town, and campus pedestrian corridors and bus hubs.

Mapping connectivity of the open and public spaces begins at the macro scale (Figure 18) where we can see the three primary downtown district development areas of Mansfield Four Corners, King Hill Road and Storrs Center are primarily connected via conventional vehicular roads, with less emphasis on the pedestrian and bicycle or green corridor connections. The town and campus bike plans have been merged in this plan and do indicate progress in beginning to make the downtown/campus district of town more bicycle and pedestrian friendly. At this scale, there is a good level of connectivity to outlying preserved open space, with extensive trail systems in the UConn Forest, Joshua Trust's Whetten Woods and the town's Moss Sanctuary. The Joshua Trust and town trail systems in particular are extremely well documented with trail guides that offer educational and interpretive information available on the town website and Joshua's Tract Walk Book.

At the meso scale of connectivity, the major campus pedestrian corridors of the aforementioned cross-axial pathways are well- illustrated with the mapping, as are the trail connections for the campus's Horsebarn Hill and Hillside Environmental Education Park open spaces (Figure 19). The distinction between dedicated bike/pedestrian ways and those that must share the road comes into clearer focus at this scale, revealing gaps in safe pedestrian access in areas in close proximity to the west and south of downtown. Also of note is the town designation of Dog Lane as a scenic road leading out to the northeast of the town center.

The micro scale, which contains the downtown masterplan footprint, begins to communicate a more detailed picture of the extent of planned sidewalks as a key part of the public realm in the new development, and makes a clear distinction between these types of urban corridors where bikes will use the road and roadside paths that the town has implemented around town to accommodate both bikes and pedestrians (Figure 20).

In addition to bike and pedestrian modes of connectivity, the transit system provided by the combination of University and regional buses is important to the multi-modal emphasis of the town center vision. Being sure that mass-transit options are well accommodated will encourage people not to rely on the use of cars which will help to lessen congestion in the downtown. The map in Figure 21 combines the six routes of the UConn bus system and designated bus stops with the route and stops for the Willimantic-Storrs line of the Windham Area Transit District system. It also shows the four planned bus stops for both systems within the new downtown development, with the Multi-Modal Center as its hub.

Storrs Road, as Mansfield's "Main Street" and main route of vehicular connectivity, will undergo a dramatic change with the implementation of the downtown development and related improvements. The diagram in Figure 22 depicts the vehicular sequence that is envisioned to transform Storrs Road from a state highway (Route 195) with little to no differentiation in form and function as it passes from the rural outskirts through the downtown district, to a true Main Street that will have points of transition in form and function as it reaches the new town center. The diagram shows the road in an increasingly bold red line as it passes through the important gateways of Four Corners (the northern beginning of the downtown district planned for new development), the entry to the agricultural part of the UConn campus at the rise of Horsebarn Hill, the main north campus entry at North Eagleville Road, and finally the downtown itself, which begins at the newly improved intersection and southern UConn gateway at Mansfield Road. The central section, from Mansfield Road to South Eagleville Road will have the most dramatic changes in form and function, with the reintroduction of on-street parking, pedestrian-scale lighting, street tree plantings, special paving details, and improved cross-walks. The UConn Landscape Masterplan also calls for significant improvements to the campus portion of Storrs Road, as well as a significant re-design of North Eagleville Road to improve the appearance of the streetscape and pedestrian comfort and safety.

The Vehicular Sequence diagram also depicts the main vehicular campus loop that runs to the west of Storrs Road, which will be made more accessible and effective as a campus bypass to relieve downtown traffic with the planned extension of North Hillside Road north to Route 44 and Bolton Road to South Eagleville Road. The two campus parking structures and the downtown multi-modal center and possible second parking structure are depicted on the diagram as well, to illustrate the well-distributed and connected facilities for relieving surface parking needs in the urbanized core of campus and downtown.

Finally, the proximity of the downtown to rural and campus jogging routes along scenic and less-travelled roads is quite popular with students and residents alike. The map below illustrates 4 possible routes with associated mileage.

Downtown District Jogging Routes

Orange Loop: *Eagleville*	4 Miles
Pink Loop: *Hanks Hill*	3 Miles
Yellow Loop: *Gurleyville*	5.5 Miles
Blue Loop: *Horsebarn Hill*	3 Miles

Figure 17 Mansfield Downtown District Green Infrastructure

Connectivity

Bike/ Walking Routes

Stonemill Road: Shared Bike Path

Separatist Road: Separate Bike Path

Hunting Lodge Road: Bikes & Peds

Recreational Trails

Moss Sanctuary

Fenton Tract – UConn Forest

Whetten Woods

Scenic Roads

Stonemill Road

Dog Lane

Farrell Road

Pedestrian & Bus Routes

Campus Cross-Axial Path

Library Plaza @ Cross-Axial Path Crossing

South Campus Bus Stop

Figure 18

Mansfield Downtown District Green Infrastructure

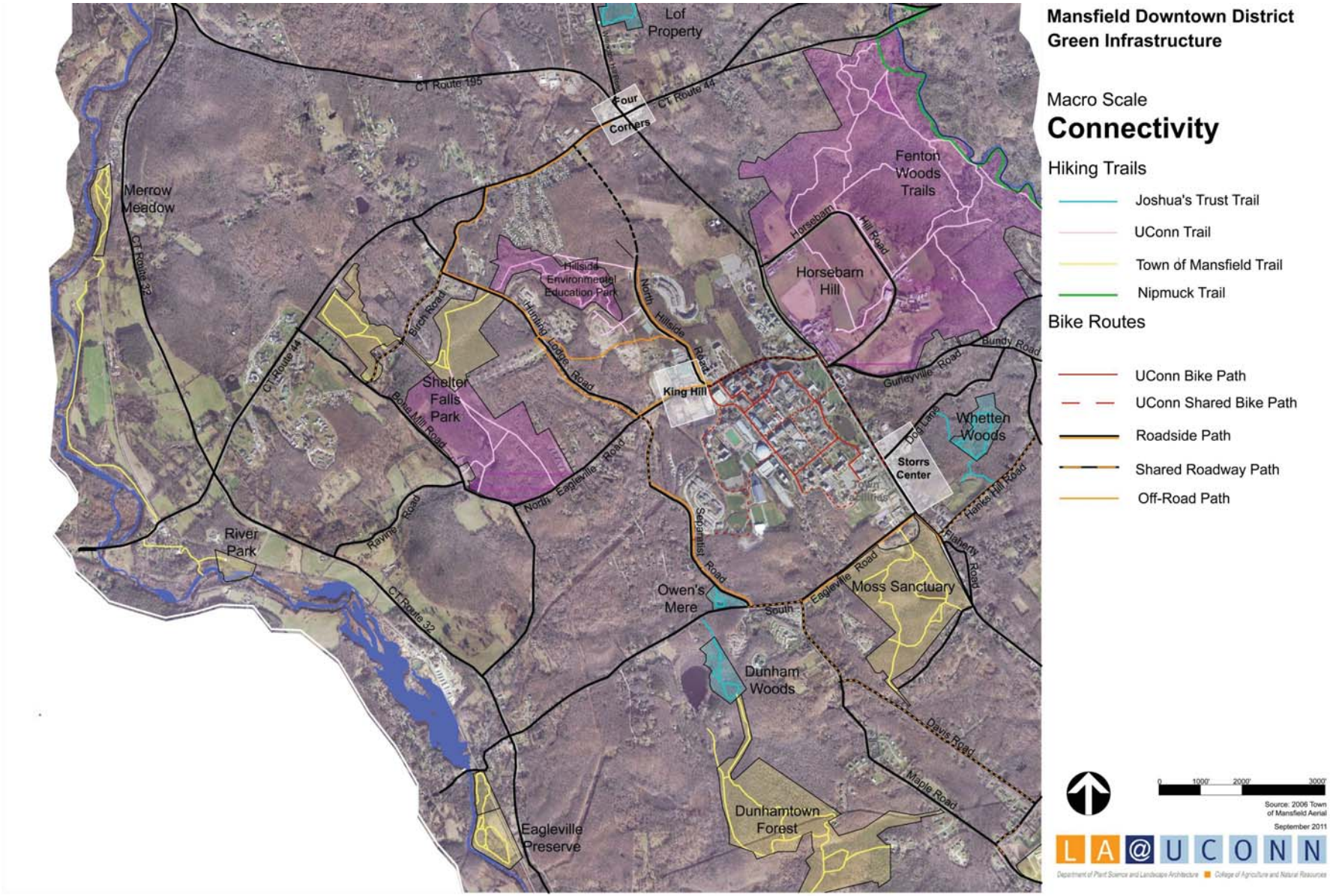

Figure 19

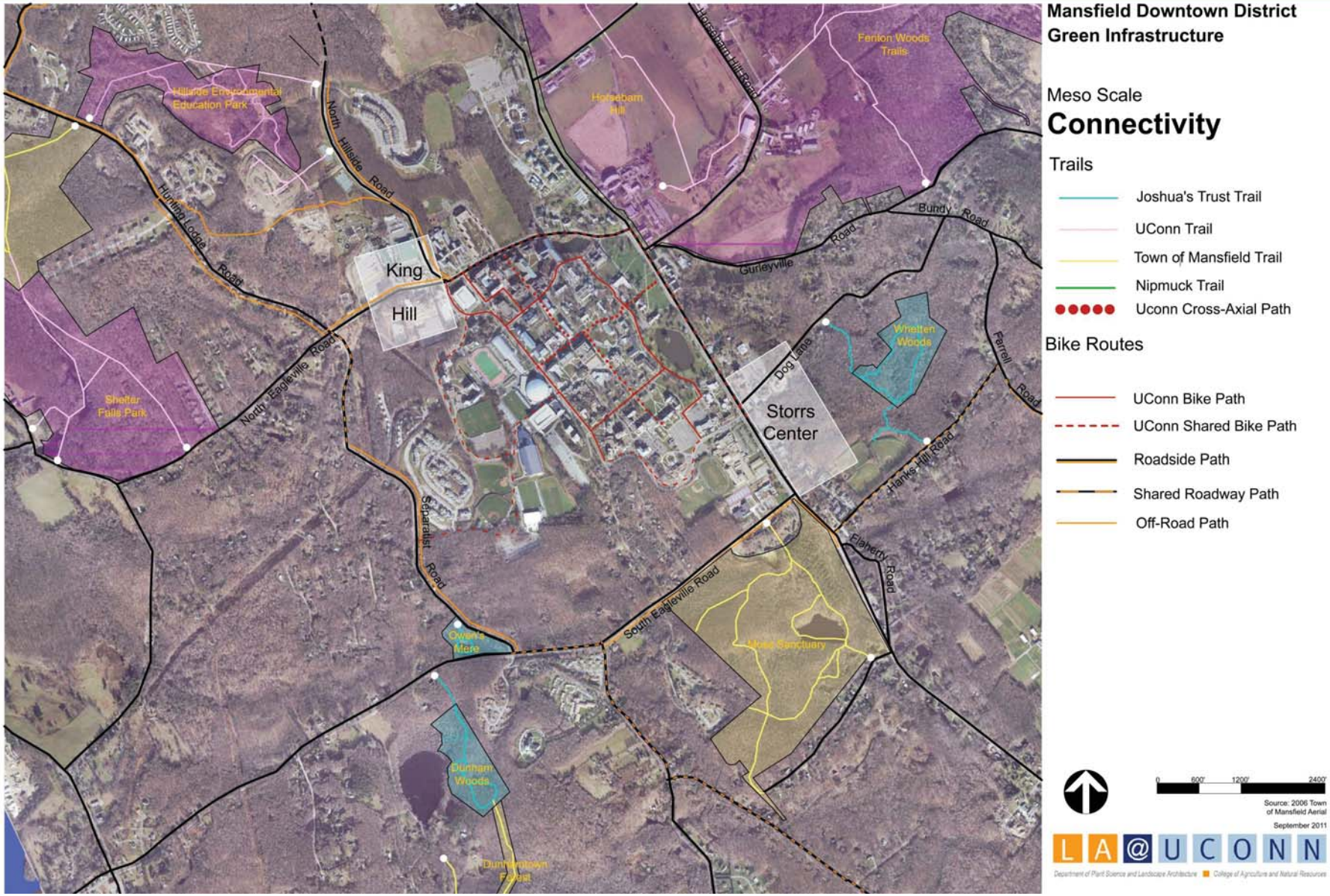
Mansfield Downtown District
Green Infrastructure
Meso Scale
Connectivity
Trails
Joshua's Trust Trail
UConn Trail
Town of Mansfield Trail
Nipmuck Trail
Uconn Cross-Axial Path
Bike Routes
UConn Bike Path
UConn Shared Bike Path
Roadside Path
Shared Roadway Path
Off-Road Path
Hillside Environmental Education Park
Horsebarn Hill
Fenton Woods Trails
North Hillside Road
Hunting Lodge Road
King Hill
North Eagleville Road
Shelter Falls Park
Horsebarn Hill Road
Gurleyville Road
Bundy Road
Whetten Woods
Dog Lane
Storrs Center
Farrell Road
Hanks Hill Road
Separatist Road
Flaherty Road
South Eagleville Road
Owen's Mere
Moss Sanctuary
Dunham Woods
Dunnigtown Forest
0 600' 1200' 2400'
Source: 2006 Town of Mansfield Aerial
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Figure 20

Mansfield Downtown District Green Infrastructure

Micro Scale

Connectivity

- Recreational Trail
- Trail Head
- Town Roadside Bike Path (Separated)
- Town Shared Roadway Bike Path
- Primary Town Sidewalk
- UConn Cross-Axial Pedestrian Path
- Designated UConn Bike Route
- Designated UConn Shared Bike Route

0 200' 400' 800'

Source: 2009 AES Aerial

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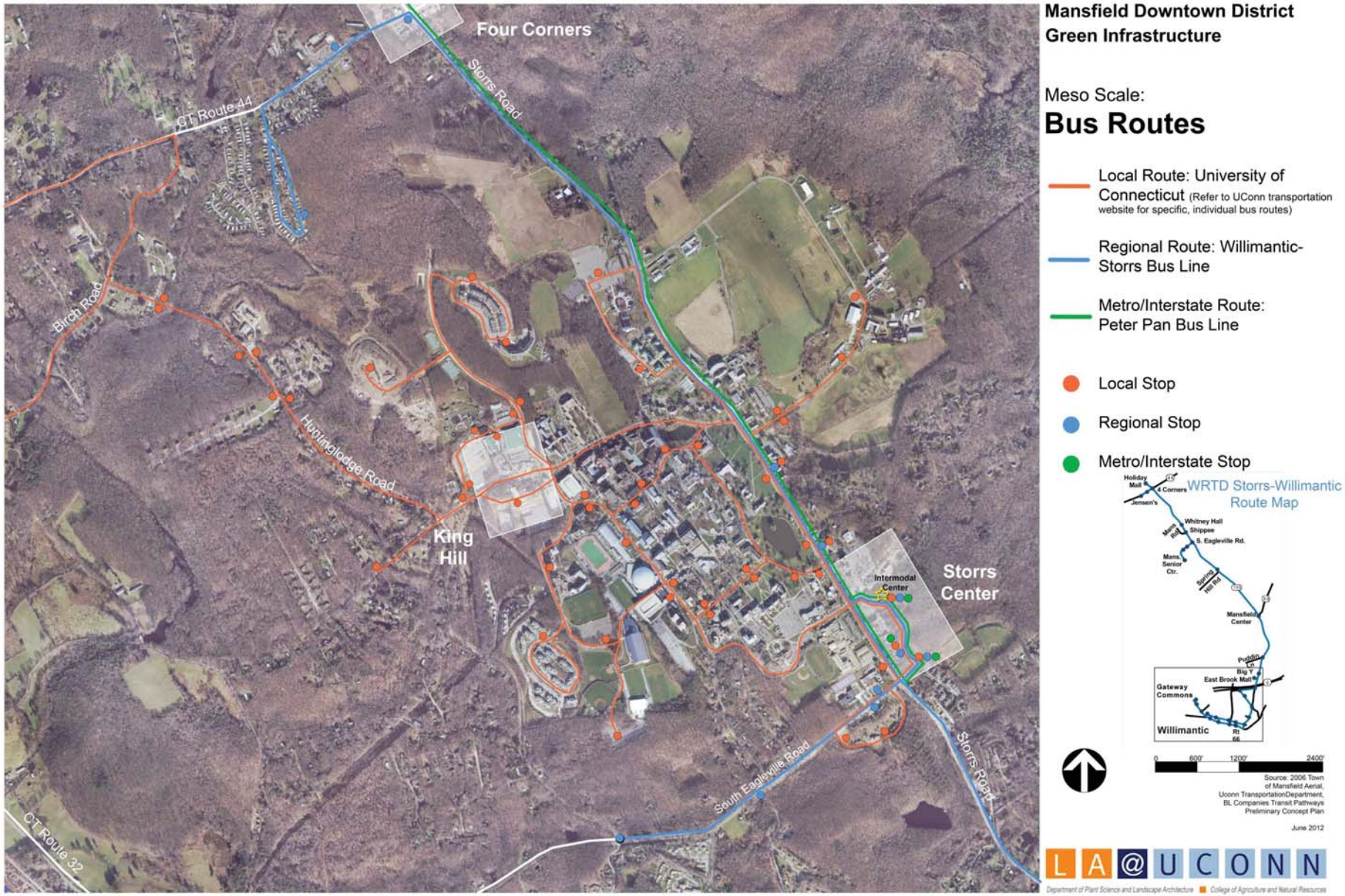
Figure 21

Mansfield Downtown District Green Infrastructure



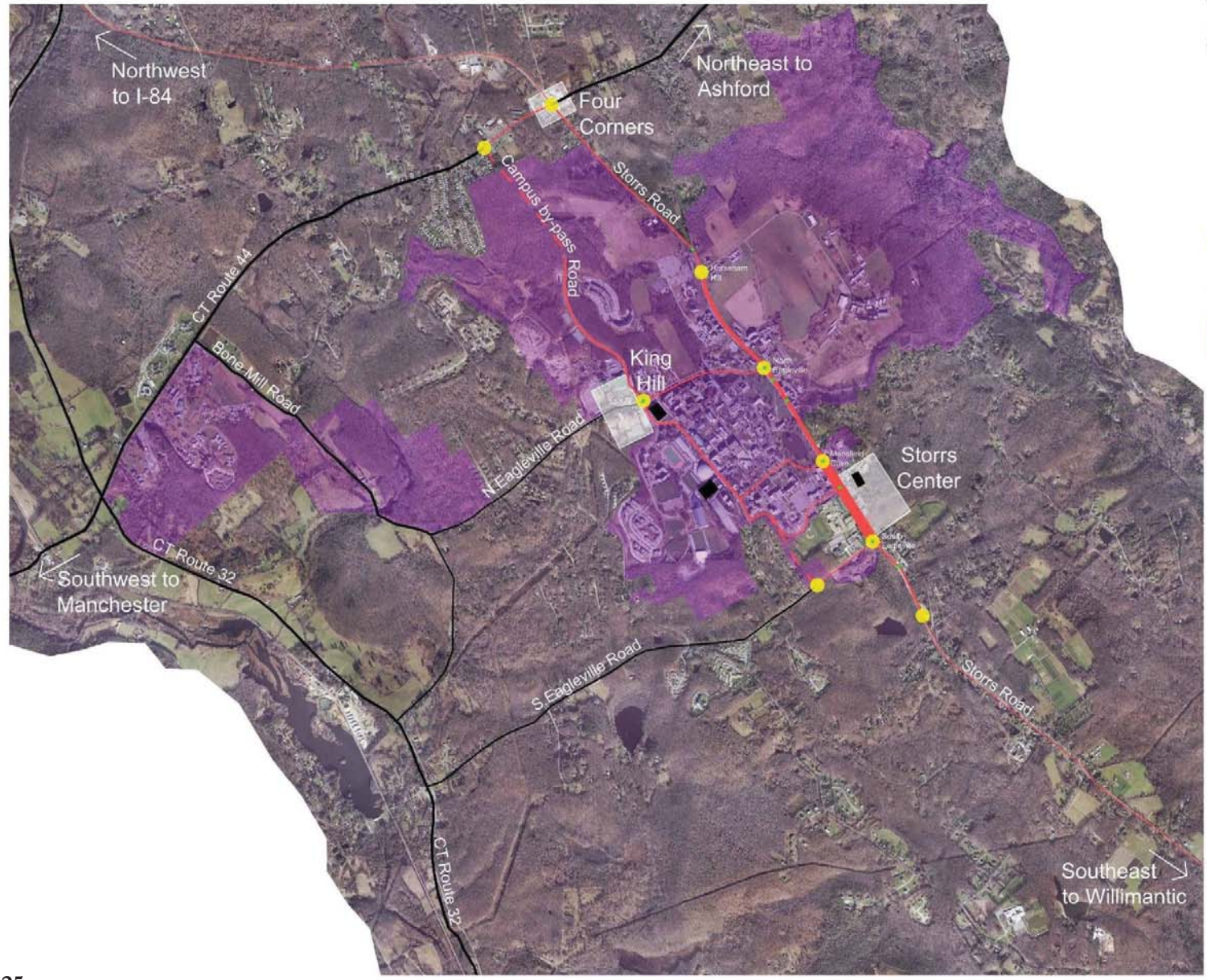


Figure 22
Mansfield Downtown District Green Infrastructure

Macro Scale:

Storrs Road Vehicular Sequence

- Gateway
- Storrs Road Traffic Light
- Parking Garage
- University of Connecticut

0 1000' 2000' 3000'

Sources
Town of Mansfield: 2006 Aerial
September 2011

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Downtown Core Analysis

Integrated Parts: A Systems Approach

The core of Mansfield's downtown district is comprised of the main new mixed-use development parcel to the east of Storrs Road, the complex of municipal and institutional community uses at the southern end and west side of Storrs Road, the UConn campus at the northern end of Storrs Road, and a variety of residential uses closely surrounding and integrated into the area. This rich range of uses is complemented by a good mix of open space connections and existing and potential public spaces as depicted in Figure 23 at right. Unlike so many newer commercially focused developments such as Evergreen Walk in South Windsor CT, the presence of key civic and institutional uses gives the Mansfield's downtown a true sense of community and identity.

The map in Figure 24 provides an integrated overview of the specific existing and planned building uses within the downtown, and identifies key existing and planned public spaces, including pedestrian sidewalks, small urban nodes or plaza spaces, and larger public and open spaces. It also identifies important wetlands which are being preserved through the compact development footprint, as well as the variety of access and parking options that are being provided with the new village street system, and on-street, surface lot, and garage parking facilities.

The green infrastructure aspects of the downtown area can be thought of and highlighted in terms of specific systems that give it form and function. These systems are diagrammed in Figures 25-30 and are described below.

Public Space System

Downtown public spaces are divided into categories of *greenway/square, plaza/urban node*, *recreation*, and *proposed public space* sites. The planned town square is the most centralized and important of these public spaces, though one can see that it will have limited size and will need to be designed in a fairly open-ended form that will accommodate a variety of changing uses and large gatherings of people. The broad greenway that runs along the south side of Storrs Road is a significant linear space that helps to offset the relatively small size of the green and link the Mirror Lake campus landscape with the town-owned Moss Sanctuary preserve.

Active recreational space is present in a variety of forms in the downtown, with the ball fields of Farrell Field, the new track and field facilities of EO Smith High School, and the outdoor ice-skating rink and skateboard parks of the Mansfield Community Center. This aspect of the public space programming is critical to active healthy living and community well-being.

The smaller urban nodes that are those "pooling" spaces for people along the streets, at major building entrances, in spaces between buildings present good opportunities to introduce amenities that invite informal gathering and give a sense of community identity. These are present in larger abundance within the new development, but also exist in the municipal and institutional uses of the high school, town hall and community center.

Two significant opportunities for new public spaces exist in the municipal complex. These are the Community Center's plan to further develop its outdoor recreation offerings to the west side of the existing building, and the concept of extending the Storrs Road greenway through a new green space between the high school and town hall to replace the current town hall parking lot in that area.

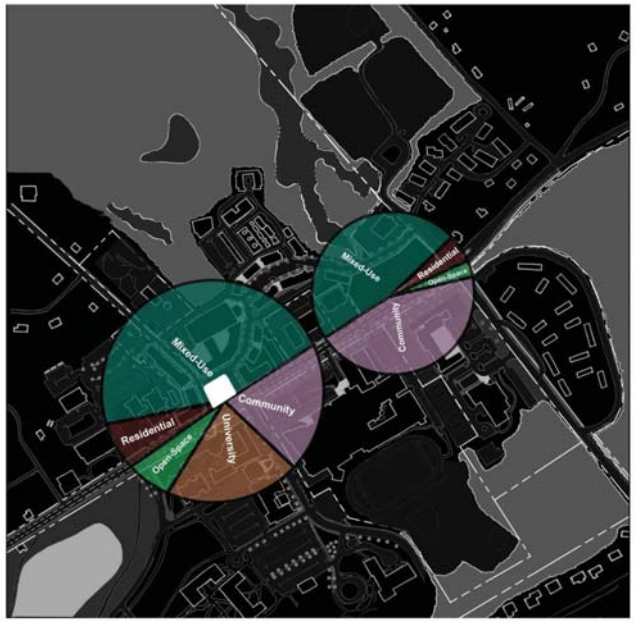
Green Space Connectivity

The second diagram in Figure 25 depicts the larger patterns of greenspace that link the downtown from north to south and from east to west to the larger district scales. The large expanse of open space within the east portion of the development parcel, which is to be preserved, has the opportunity to be linked through the downtown, across Storrs Road and to the Community Center open space and Moss Sanctuary for pedestrian hiking and recreational use. Likewise, the Mirror Lake and Upper Park landscape of the UConn campus is linked with the Storrs Road greenway through the downtown to the Moss Sanctuary town open space and beyond.

Vegetation Systems

Although other types of gardens and green space will be recommended in certain areas, the primary form of vegetation in the downtown area will come in the form of street trees. Because of the density of the built space, establishing a substantial and healthy "urban forest" for our downtown will be critical. The inset diagram in Figure 26 depicts locations and corridors of existing/planned street trees as well as suggested locations where the tree canopy should be further developed. These are primarily in the area of Bolton Road and the South Campus surface parking areas which contain vast expanses of pavement and driveways, presenting a very difficult and unattractive area for pedestrian travel. The planned improvements for Storrs Road and the new village streets promise a good variety and ample coverage of street trees that are well-adapted to the urban conditions.

Figure 23 Multiple Land Uses in Downtown Mansfield



Pedestrian System

Streets and sidewalks are the 'connective tissue' of the public realm.

Downtown Core Analysis

Critical aspects of pedestrian connectivity in a downtown area include:

- providing appropriately sized sidewalks for the scale, importance and adjacent uses of the path,
- Identifying safe and centralized points of road crossing and other nodes of intersection and wayfinding decision-making
- Providing pedestrian scale and comfort through street trees, lighting and other ammenities.

The second diagram in Figure 26 depicts the extensive system of planned and existing sidewalks in the downtown district and reveals some areas of the district, outside of the new development, which lack desired connectivity. These areas are primarily along segments of Bolton Road, South Eagleville Road and Storrs Road to the south of the development area to access nearby neighborhoods.

In addition to these missing roadside connections, there are three significant other pedestrian connections which need to be facilitated. These are: 1) an improved connection to the Nathan Hale Inn and South Campus Ballroom complex from Bolton Road, 2) a trail head and trail connection from the development area through the development open space to meet the Whetten Woods trail system,. And 3) a relocated or additional trailhead at the corner of South Eagleville and Storrs Roads to access Moss Sanctuary.

Bicycle System

The multi-modal type of connectivity that is being encouraged in downtown Mansfield includes a strong emphasis on bicycle travel. The Intermodal Transportation Center , located on the diagram in Figure 27, will be a major hub for this activity with bicycle storage and other services for the biking public. The primary travel ways for bikes in the core district of both the downtown and the main UConn Campus are shared with the vehicular routes. The improvements being made to Storrs Road, including reconfiguration of the signalized intersections will assist in making this shared use safer and more efficient. This shared road use in the core urbanized area will transition to the separated bike ways that the town has begun to develop in the surrounding neighborhoods and feeder roads such as South Eagleville and Separatist Roads. A major segment of roadway that is badly in need of connection and transition away from a shared bike use is along Storrs Road to the north of campus, connecting to the Four Corners site. Increased off-road recreational biking in some of the outlying open space areas has been voiced as a desire by many stakeholders, and considered as a possibility by the town parks and recreation staff.

Sustainable Stormwater Systems

An important opportunity for a green infrastructure approach to public spaces is the integration of sustainable methods of stormwater management with green public spaces. Stormwater runoff that is produced through the development of impermeable roof and paving surfaces is conventionally handled with the use of catch basins, piping and inert basins where the water can be held until it drains away to downstream locations, with an out-of-sight, out of mind approach that often results in flooding, siltation and pollution of these off-site areas. In the Storrs Center project, the sensitive treatment of water is of particular concern to the community, and so it is especially appropriate to recognize the opportunities to use innovative and green practices that allow the public spaces to function not only as cultural, social spaces, but as ecologically high-performing spaces where water can be celebrated and put to functional use.

The development area itself, in following the Mansfield Downtown Partnership's Sustainability Guidelines, has included in its plans the use of tree filter pits along the Village Street which will provide the first stage of a treatment train that will filter the road runoff in below-grade chambers. The rest of the runoff will be intercepted before it reaches outlying low areas and wetlands in vegetated bio-treatment areas that will further filter, absorb, and slow the runoff. This should result in a net improvement of the water quality compared to the development which was removed to make way for the new project. (See Figure 27)

Beyond these development-related measures, there are opportunities to consider the use of:

- rain gardens
- bio-swales to treat new or renovated parking areas
- cisterns for collecting stormwater for outdoor water needs such as fountain, pool, splash pad, irrigation, and ice rink use
- wetlands enhancement plantings

within the larger downtown districts public spaces, particularly within the municipal complex of the town hall and community center.

Shared Responsibility, Ownership, Management

The complexity of the downtown project, the decades-long process that has preceded its ground-breaking, and the challenges of creating an integrated approach to public spaces and green infrastructure are rooted in the multiple stakeholders and owners of the downtown district. With the University, the Town of Mansfield, Region 19 School District, master developer LeylandAlliance, and other private land owners each controlling or responsible for different parts of the district, it is important for each entity to commit to working together to coordinate, improve and manage our public spaces and green infrastructure for the collective good. The final section of this report identifies specific recommendations for public space and green infrastructure according to the responsible entity/owner of the space – town, university or developer.

The Mansfield Downtown Partnership (MDP) has played a key role in creating a community-based vision for the downtown, coordinating the many complexities and getting the project out of the ground with a strong and focused system of community and financial support. The MDP is entering a new phase of its existence as it looks toward a management role for the built development and associated public spaces, while it continues to lead coordination of the next phases of the Storrs Center project and the additional development areas of the larger downtown district included in its mission (Four Corners and King Hill Road). As strategic planning for the next critical years of the MDP organization progresses, its role in facilitating and coordinating the recommendations of this plan (which also addresses connectivity of the larger district), and in management of the completed district public spaces is essential.

Figure 24

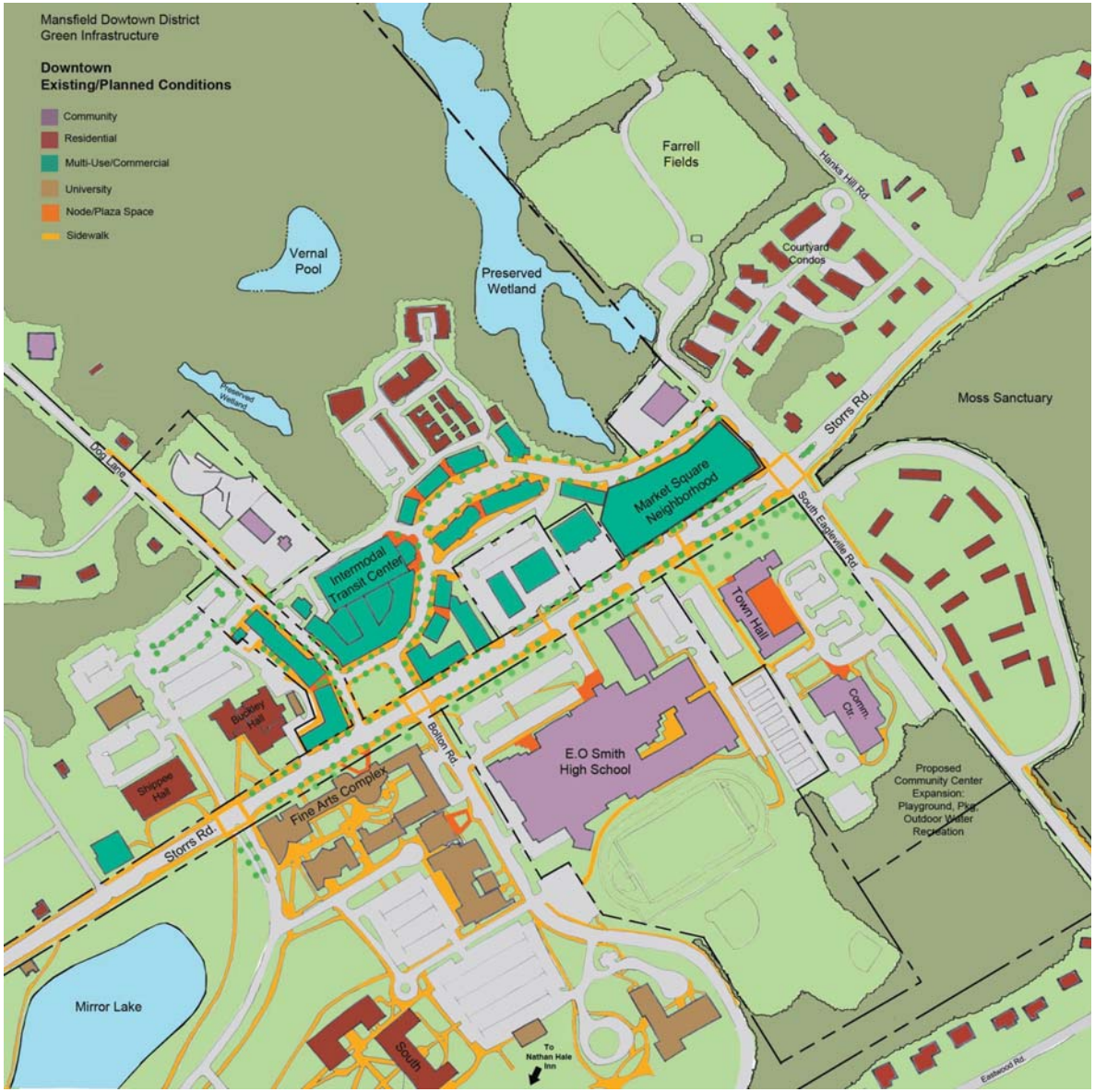
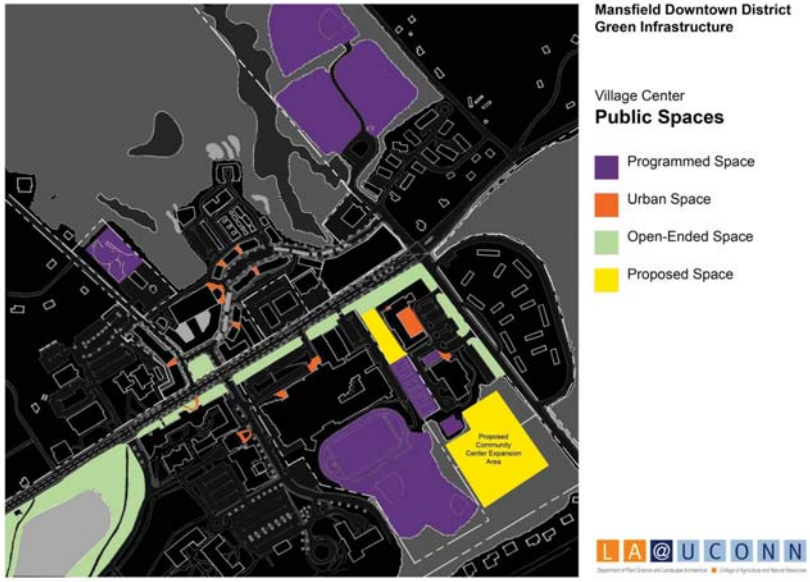


Figure 25 Public Space and Open Space Systems



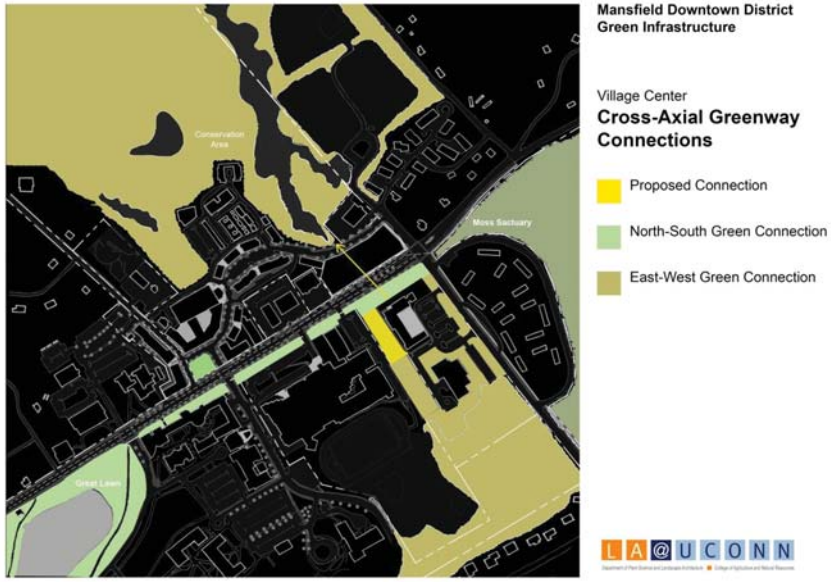


Figure 26 Street Tree and Sidewalk Systems

Mansfield Downtown District
Green Infrastructure

Village Center
Street Trees

Proposed Street/Parking Lot Tree

Planned or Existing Street Tree

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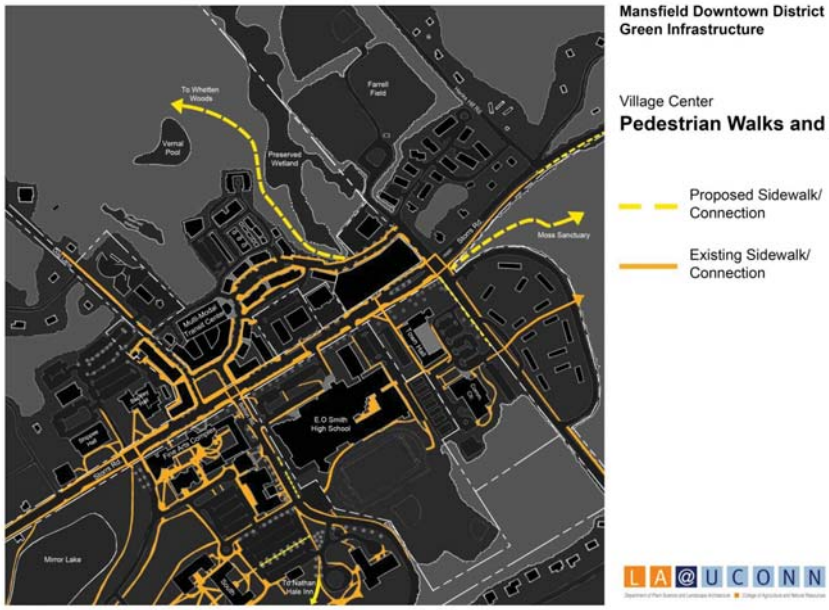

Mansfield Downtown District
Green Infrastructure

Village Center
Pedestrian Walks and Trails

Proposed Sidewalk/ Connection

Existing Sidewalk/ Connection

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Figure 27 Bicycle and Stormwater Management Systems

Mansfield Downtown District
Green Infrastructure

Village Center
Bike Routes

Separate Bike Route

Shared Bike Route

Signalized Intersection

Multi-Modal Center

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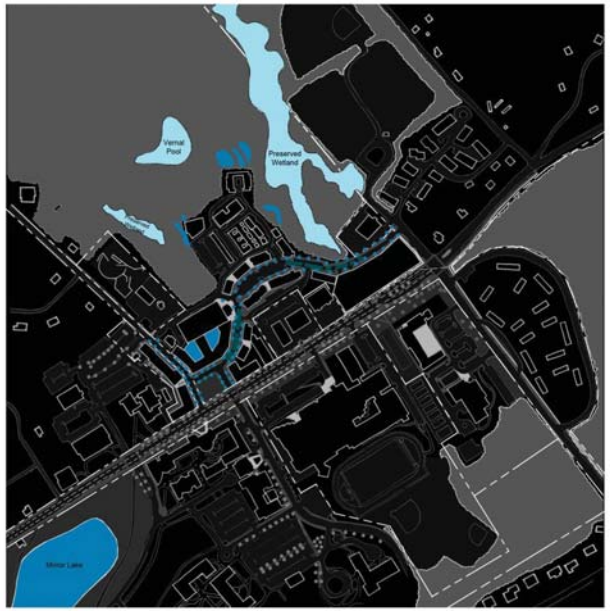

Mansfield Downtown District
Green Infrastructure

Village Center
Storm Water Managment

Tree Filter Pit

Underground Detention

Aboveground Detention

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