East Area Plan

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Goals

The goals of the East Area Plan are to organize pedestrian and vehicular circulation, improve the physical campus, and accommodate new development. In support of these goals, the plan has four interrelated objectives:

1. To create an efficient, legible framework of pedestrian pathways that is pleasing and safe for regular users, and clear to new visitors.
2. To plan a series of open spaces along these pathways that provides much-needed outdoor recreation and gathering spaces. To renew the Frank Waugh Arboretum as part of the open space system.
3. To organize vehicular and service circulation and parking, in an efficient manner with minimal impact on the pedestrian framework.
4. To identify space for new infill development that will support and enhance existing patterns of development, potentially forming academic clusters or quads.

Recommendations

Open Space and Pedestrian Circulation

Short Term:
- Close Stockbridge Road from Fernald Hall to Durfee Gardens to create an Historic District and Pedestrian Mall.
- Improve north-south and east-west pedestrian corridors identified in the Master Plan and provide nodes for gathering spaces at intersections which include seating, lighting and landscaping.
- Improve secondary path systems to Orchard Hill including: Worcester Dining Commons Path, Rhododendron Garden Hill Path, and Chancellor’s Way path.
- Initiate changes in the residential complex to reduce traffic, improve pedestrian circulation, increase open spaces and landscaped areas, and provide additional recreation areas.
- Designate specimen trees and historic plantings to be preserved.

Long Term:
- Develop the future phases of Durfee Gardens.
- Enhance plantings throughout the area in support of the Arboretum concept.
- Develop pedestrian nodes at major pedestrian intersections.

Circulation and Parking

Short Term:
- Close Stockbridge Road between Fernald Hall and Durfee Garden to through traffic.
• Extend Stockbridge Road to the east at Morrill to connect with Thatcher Way, forming a new northern loop road.
• Close Chancellor’s Way to through traffic and convert to a pedestrian route. Coordinate with future plans for Durfee Gardens.
• Eliminate parking spaces along Thatcher Way, Infirmary Way, within Central Residence complex (partial), Lot 62 (partial), Fernald meters and at the Franklin Dining Commons (partial) to reduce pedestrian/vehicular conflicts and eliminate circling for spaces.
• Provide replacement parking by expanding the following lots: Worcester DC and Lot 62 in two segments in the grassy area to the south of the existing lot.
• Provide two new parking lots for replacement parking spaces at the existing Marshall Hall site and in the open space across from Marshall.

Long Term:
• Extend Clark Hill Road at the intersection with Infirmary Way straight to North Pleasant Street to create a new intersection farther to the north than the existing intersection at the Newman Center.
• Close Infirmary Way in front of Hills House to relieve traffic congestion at the intersection in front of the Newman Center.
• Re-route circulation to enter the Newman Center from the south entrance only, exiting onto Massachusetts Ave.
• Convert the northern driveway of the Newman Center to a pedestrian way.
• Re-route the service circulation to Hills and Gorman to enter from Clark Hill Road.
• Re-route Admissions traffic through Butterfield Terrace.
• Improve the intersection of Clark Hill Road and E. Pleasant Street by working with the Town of Amherst to examine the intersection and traffic controls.
• Increase short term and visitor parking based on consolidating uses for Admissions, Career Center, student cultural centers, and museums through a combination of parking structures, parking decks and new surface lots at Worcester DC, Lot 62, French Greenhouses, Marshall Hall and University Apartments.
• Provide a minimum of 400 additional spaces to support new development and to mitigate current parking deficits.
• Relocate all major utilities underground, including electrical and steam.
Land Use and Development

*Short Term:*
- Plan the adaptive reuse of the buildings along the proposed historic district.
- Continue strategic demolitions of buildings deemed to be unsuitable for renovation once replacement space has been provided based on program needs.

*Long Term:*
- Designate four development sites which yield approximately 300,000 a.s.f for academic use.
- Match proposed development programs with appropriate infill sites and make the appropriate infrastructure changes associated with the site development.
- Recommend appropriate alternative sites outside the East Area for relocating the Health Center.
The East Area: An Introduction

Study Context

In August 1993, the Campus Physical Master Plan was completed for the Amherst campus of the University of Massachusetts. The Master Plan was followed and enriched in 1995 by a second campus-wide study entitled “A Landscape for Learning.” These documents both recommend that the campus adopt a strategy of infill development, integrating new academic facilities and improvements within the campus core rather than allowing development to sprawl further and further from the center. At the same time, this infill development can be used to define open spaces and pedestrian corridors, centralize infrastructure, and reduce travel time between buildings.

The 1993 Master Plan divided the campus core into nine sub-areas to address specific planning and development issues in more detail. The first of the sub-area studies, the North Area Plan (also known as the Technology Transfer Cluster and Governors Drive Area in the 1993 plan), was completed in 1994.

The East Area study focuses on the Stockbridge Road study area from the 1993 Master Plan.
Existing Buildings and Roads

- Worcester Dining Commons
- Marshall Annex
- Marshall Hall
- Old Infirmary Group
- Chancellor’s Residence (Hillside)
- Foundry
- University Health Center
- Durfee Conservatory
- French Hall
- Brooks Brett
- New Africa House
- Apiary
- Wheeler
- Gorman
- Admissions Bldg
- University Apartments

- East Experiment Station
- Skinner Hall
- Morrill Science Complex
- Wilder Hall
- Faculty Club
- Shade Tree Lab
- Clark Hall
- Franklin Dining Commons
- Fernald Hall
- Hills House
This document represents the second of these sub-area planning studies, focussing on the East Area (or the Stockbridge Road Subarea, as this zone was identified in the 1993 Campus Physical Master Plan). In this study, a fifteen-year planning horizon has been adopted, acknowledging the ongoing evolution of needs and resources that characterizes the University.

For the purposes of this more detailed look at one of the most historic and heavily travelled parts of campus, the study boundary has been extended to the east and the north. This expanded study zone will hereafter be identified simply as the East Area.

The East Area reflects the rich heritage that the University of Massachusetts inherits as a land-grant institution. In an early plan for the Massachusetts Agricultural College by Frederick Law Olmsted, Stockbridge Road was the primary road connecting a few structures that housed the various departments of the young agricultural school.

Today, Stockbridge Road is no longer the main street of the campus, but is still the address of many of the campus’ historic buildings. The East Area is home to many Colleges of the University, which enjoy the use of beautiful historic buildings and heirloom trees.

The 1866 Frederick Law Olmsted plan for the University of Massachusetts, as redrawn in 1911 by Frank Waugh. There are two features of the 1866 MAC campus that are still recognizable in the East Area today: Stockbridge Road, which is labelled “Public Road,” and the Stockbridge House, labelled “President’s House.”
While many of these buildings are still sound, some are beyond repair, or are no longer appropriate for the teaching and research requirements of the departments that they currently house. An audit is already underway to determine which buildings should be demolished to clear the way for new, state-of-the-art facilities. Other buildings will likely be slated for restoration to accommodate future needs. The East Area is poised at the edge of a period of radical transformation.

Ironwork and stone walls in the Rhododendron Garden attest to the University’s origins as the Massachusetts Agricultural College.
Introduction

The plan for the East Area is based on a careful inventory and assessment of existing features and issues. This background analysis considered the following: environmental factors such as topography, views, and open space; building use and historic significance; and patterns of circulation and parking. A series of planning meetings were held with stakeholders to identify additional issues of concern.

Slopes

The dramatic, west-facing topography of the East Area cradled the earliest activities of the University. Fields and structures were located on these gently sloping hillsides when the campus was founded. The student market gardens, part of the expansive campus green, and the lowest edge of chestnut forest, vineyards and orchards covered what is known today as Orchard Hill.

The East Area is a long north-south terrace defined by ridges. Through its southern and central parts, Stockbridge Road runs along relatively flat land that is overlooked by an eastern ridge. As one continues north along Stockbridge Road, the land begins to fall away to the west, and eventually the road descends to this level to meet North Pleasant Street at the East Experiment Station. This curving road is flanked by the steeper slopes of Orchard Hill above and to the east and the more gentle slopes along North Pleasant Street below and to the west. See the next page for a section and diagram.

Views

The dramatic topography described above is both a significant constraint for building and road development and a great opportunity for views. Many East Area ridgetops and windows offer spectacular views of the Berkshires to the west. Some of the historic buildings along Stockbridge Road like Clark and Wilder were well-situated to enjoy these views before the construction of Morrill severed their western visual connection. Users of other buildings on the highest, most eastern edge of the study area, can still look to the west. Other important overlooks bordering the East Area include the Chancellor’s House and the Clark Hill Memorial.
The East Area is a terrace defined by two sloping ridges to the east and west, and bisected by Stockbridge Road. This section shows the gentle slope west of Stockbridge Road that rises gradually from the Campus Pond to the Morrill Science Complex, and the eastern slope of Orchard Hill that rises sharply above University Health Services.

Internal and external views are also important in the study area. The Fine Arts Center’s grand walk, just across North Pleasant Street to the west, currently frames a view of the East Area’s parking lot 63. This visual terminus point must be planned to be more appealing. Views up and down Stockbridge Road are also important within the study area.

Open Space

Well-designed open space allows views, provides room for recreation, and enhances relationships between buildings.

Significant well-designed open spaces within the study area include the Rhododendron Garden, Durfee Gardens, and the Frank Waugh Garden at Hills House. These places are heavily used by the campus community for lunch breaks, meditation or quiet conversation, and performances and outdoor ceremonies. They provide a model for how other open spaces on campus should be designed and enhanced.

Unfortunately, the East Area consists mostly of undefined open spaces, which could be defined as being “left-over” spaces. Some of these areas, such as the broad hillside below Thatcher Way, permit distant views or serve as pleasant reminders of the open landscapes that characterized the University’s past.

The East Area boasts some unique features on campus. Many mature trees were planted here in the late 1800’s by President Clark. They enrich the visual and academic environment, and form a strong initial framework for the proposed Waugh Arboretum.
Assessment of Historic Significance

As one of the oldest sections on the campus, this area contains many buildings along historic Stockbridge Road that date to the early 1900’s. Despite their poor physical condition, several of these buildings serve as important physical references to the University’s heritage as a land grant institution. Collectively, these buildings define a district of historic structures. As a part of the inventory process, all of the buildings in the East Area have been evaluated for their historic significance. “Historic significance” has been granted to buildings that meet three criteria: age, historic importance, and present usefulness.

Buildings of historic significance

Though there are many potentially valuable structures within the study area, some are of special significance due to the roles they have played in the University’s development. The following structures are an integral part of the University’s heritage, due to their high architectural value or their roles in the history of the campus:

East Experiment Station: This structure was built to conduct agricultural experiments on the relationship between fungal growths and plant disease. Its Romanesque style, delicate scale, unusual detailing, and age make this a very valuable building.

Clark Hall: William Clark was the third president of the College. The Romanesque-era Clark Hall occupies an important position next to Stockbridge House, where it signals the beginning of the historic district along Stockbridge Road.

Fine attention to detailing makes Wilder Hall one of the most beautiful buildings anywhere on campus.
**Fernald Hall:** Fernald is a Georgian-revival building. In its day, it was a state-of-the-art entomology building, similar to other workhorse buildings that provided much-needed classroom and laboratory space. Today, structural problems and weak contextual relationship with other historic core buildings make its status uncertain.

**French Hall:** Named after the first president of the College, French Hall was built for floriculture and market gardening. Although its Georgian facade is undistinguished architecturally, French’s importance grows when its placement near Stockbridge, Wilder, and Durfee Gardens is taken into account.

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**Buildings Erected Before 1960**

In terms of age alone (independent of context and present usefulness), the following structures are considered to be “historic:

<table>
<thead>
<tr>
<th>Date</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1728</td>
<td>Stockbridge House</td>
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<tr>
<td>1867</td>
<td>Forestry Annex</td>
</tr>
<tr>
<td>1889</td>
<td>East Experiment Station</td>
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<tr>
<td>1905</td>
<td>Wilder Hall</td>
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<tr>
<td>1906</td>
<td>Clark Hall</td>
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<td>1907</td>
<td>French Hall</td>
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<td>1909</td>
<td>Fernald Hall</td>
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<tr>
<td>1911</td>
<td>The Apiary</td>
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<tr>
<td>1939</td>
<td>Admissions Building</td>
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<tr>
<td>1947</td>
<td>Marshall Hall Annex</td>
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<td>1947</td>
<td>Skinner Hall</td>
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<tr>
<td>1948</td>
<td>New Africa House</td>
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<tr>
<td>1949</td>
<td>Brooks House</td>
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<tr>
<td>1950</td>
<td>University Apartments</td>
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<tr>
<td>1953</td>
<td>Worcester D.C.</td>
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<tr>
<td>1955</td>
<td>Durfee Range</td>
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<tr>
<td>1959</td>
<td>Wheeler</td>
</tr>
<tr>
<td>1959-60</td>
<td>Morrill  I-II</td>
</tr>
<tr>
<td>1960</td>
<td>Hills House</td>
</tr>
</tbody>
</table>

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**Buildings of Special Historic Significance**
**The Faculty Club: Stockbridge House and the Homestead:** Levi Stockbridge was the fifth president of the College. Built over 265 years ago, the colonial saltbox-style Stockbridge House is still used to house the Faculty Club. It is the oldest structure in the town of Amherst, and is a fine example of the type of architecture built in Massachusetts by European settlers in the early 1700’s.

**Skinner Hall:** This relatively undistinguished Georgian building was named after Edna L. Skinner, a professor of Home Economics.

**Wilder Hall:** Named after Marshall P. Wilder, who was the founder of the New England Horticultural Society in 1829 and the State Board of Agriculture in 1852. Wilder Hall is an eclectic blend of Italianate, Queen Anne, and Prairie Style features, and was the first building erected in the United States dedicated to landscape architecture.

**Present Use**

The University Apartments currently sit vacant, due to problems with asbestos and achieving ADA compliance. Due to a split-level interior floor plan, renovating this structure to meet standards of accessibility may be very costly.

Several other East Area structures have recently been demolished due to their states of advanced deterioration and their minimal historic significance. They include:

- Marshall Hall
- Old Infirmary Cottages

The scheduled facilities audit will address this area more fully. For more information, see Appendices 1 and 2.

**Patterns of Building Use**

Currently, the East Area houses many of the University’s Schools and Colleges: the College of Food and Natural Resources, the College of Natural Sciences and Mathematics, the College of Humanities and Fine Arts, the School of Public Health and the School of Nursing, and the School of Education. This area also includes important support services, such as University Health Services, Student Support Services, and Student Housing.

At present, many academic departments have been consolidated into one or two buildings. Consumer Studies occupies Skinner Hall, Plant and Soil Sciences has been clustered into French Hall, and Entomology occupies Fernald Hall. Landscape Architecture and Regional Planning shares Hills House with Education. The Biology Department is largely housed in Morrill. Other related disciplines, including Geosciences, and Microbiology are also clustered into Morrill, along with Animal Care, Environmental Health and Public Health.
Existing Patterns of Building Use

Legend
- Academic/Research
- Administrative
- Residential
- Special Exhibit
- Support Services
- Vacant
- Cultural Center/Student Support
The Department of Art is still dispersed throughout the area. Space in six separate buildings is allocated to Art, from Clark Hall to the East Experiment Station. Furthermore, some of the structures that have historically housed the Art Department are slated for demolition. Marshall Hall has already been razed. New space for this department must be found in the near future.

See Appendix 1, Building Use Information, for more information.

Utilities

The roads, open spaces, and parking lots of the East Area cover a complicated system of underground tunnels and pipes that carry lines for utilities. This underground infrastructure in the East Area is made up of several different systems, including lines for steam, water, sewage, gas, electricity, and telecommunications. In some places, elements of this infrastructure come to the surface and become part of the visible landscape. These systems are maintained by Physical Plant, except the telcom system which is maintained by the Telecommunications Systems Office.

In general, moving underground steam tunnels is the most expensive type of utility realignment. The East Area has very few steam tunnels. However, major multipurpose utility corridors pass under the northern end of Stockbridge Road and below Infirmary Way at the Central Residence Hall complex. North Pleasant Street is also a major utility corridor. Repairing breakages along this road can be problematic, due to the heavy traffic loads it bears daily. There is also a major utility node in the service corridor behind Morrill where electrical work frequently takes place.

These systems are in different stages of efficiency and disrepair. Many of the utility lines in the East Area are outdated and will soon need to be replaced. Improvements to the utility system need to be coordinated with recommendations made in this plan.

Information about costs of moving and replacement of utility lines and planned utility upgrades may be found in Appendices 5 and 6.

Circulation

Pedestrian, vehicular, and service circulation within the study area all have their own requirements for clarity, efficiency and safety. Currently, there are many places where two or more of these systems are in conflict. Each is considered in turn below.
Pedestrian Circulation

Many pedestrian paths in the study area run east to west, although there are few clearly defined routes. A series of meandering pathways carries a diffused movement from east to west. They pass through the streets, buildings, and parking lots of the East Area, and cross North Pleasant Street to the campus core. The Orchard Hill and Central residential areas are major sources of pedestrians.

Many crossing points at North Pleasant Street are presently of inadequate size and safety. Another pedestrian issue is the lack of handicapped accessibility along these east-west routes.

North-south primary pedestrian corridors within the area include the walk along North Pleasant Street, and the sidewalks along Stockbridge Road. These corridors are also heavily used. Secondary pedestrian ways occur throughout the study area, and are themselves often in conflict with vehicular circulation.

Vehicular Circulation

The study area includes one of the most heavily used gateways to the campus at the intersection of Massachusetts Avenue and North Pleasant Street. North Pleasant Street, which runs north-south, is one of the busiest roads for through traffic on campus.

Most other traffic routes within the study area are secondary to North Pleasant Street. Stockbridge Road, Chancellors Way, Clark Hill Road, Thatcher Way, and Infirmary Way, carry a lesser, but still significant volume of mixed vehicular traffic.

Stockbridge Road: One of the oldest roads on campus, Stockbridge Road parallels North Pleasant Street but carries much lighter loads. It also provides access to many service routes for buildings in the core.

Chancellors Way: This is a minor vehicular route, providing residential and service access to the Chancellor’s House. It is also a major pedestrian route.

Thatcher Way: Another little-used road that connects Chancellors Way to Eastman Lane, the Worcester DC, and the Northeast residential complex.
Clark Hill Road: Infirmary Way and East Pleasant Street are connected by this road that climbs the steep grade up Clark Hill. At the top of the hill, there is a very sharp turn where the road curves around the Clark Hill Memorial. The intersection at East Pleasant Street is poorly aligned, with short sight line distances. This intersection is a hazardous one for vehicles. While it falls outside the current study area, it will be affected by changes within the study area. All of these conditions; the steepness of the hill, the sharp curve, and the dangerous intersection; have made this route impassable for bus traffic and sometimes for other vehicles when icy winter conditions prevail. It is, however, an important east-west vehicular connection.

Infirmary Way: This one-way loop provides access to the Franklin DC, University Health Services (UHS), and Central residential complex. At the UHS, the road rises approximately twelve feet to the east to pass through the heart of the Central Residential Area.

Service Circulation

Every building in the East Area must be accessible to service vehicles. Conflicts with pedestrians occur when service vehicles use sidewalks to access entryways and to make deliveries.

Stockbridge Road, Infirmary Way, and Clark Hill Road are the primary service corridors in the study area. The central portion of Stockbridge Road is not as crucial to this access as the northernmost section (serving Worcester DC and Skinner) and the southernmost section (serving Morrill, the Faculty Club, and Clark). Access to the area behind Morrill is particularly important, due to a large electrical node located there. Infirmary Way is a crucial route, providing service to three major destinations: the Franklin DC, UHS, and the Central residential complex.
Pedestrian / Vehicular Conflicts

After assessing each of the major systems—vehicular, pedestrian, and service circulation—areas of conflict between the three systems are apparent. The locations with the highest rate of conflict are along North Pleasant Street, where thousands of students cross North Pleasant Street daily. Because the crossing points are not well marked by signals or other means, students tend to cross at all points along North Pleasant Street. As a result, this road is a major source of vehicular/pedestrian conflicts. The result is a chaotic and unsafe pattern of crossings along the entire length of the street, where pedestrians compete with high volume traffic moving north-south through the campus core. The most notable points of conflict occur at crosswalks near the PVTA bus stops.
Lesser but significant points of conflict in the East Area occur along Stockbridge Road where pedestrians from the Orchard Hill and Central Residential Area enter the campus core. The loop of Infirmary Way that serves the UHS crosses another major east-west corridor in two places at the Central Residential Area and the Franklin DC.

Service access points, such as loading docks, are located at different points for each building, making it difficult to consolidate delivery areas. Frequently, designated service doors are not close enough to mail rooms, elevators, and other central nodes of service activity, causing maintenance workers to jump the curb and use a more convenient door. As a result, there is a great infiltration of unnecessary vehicular traffic on all paved surfaces.

These conflicts must be resolved or minimized.

Parking

Parking on campus is controlled by a system of permits and meters. In general, people who live or work on campus hold permits for numbered lots, and visitors are directed to meter spaces. These two types of parking are consolidated into defined lots. (The lot at University Health Services is sometimes controlled by a guard house, and is reserved for patients.) Service and handicap spaces are designated in close proximity to each building.

There are three significant primary permit lots (identified for study purposes as as 62:1, 63:1 and 63:2), with a total of 447 spaces. Many secondary lots also exist in the area. Parking in each lot has been assessed to yield an accurate count for present number of spaces. Total parking within the study area, including University permit, Health Services lot, meter and 15 min lots, service, handicapped, and motorcycle spaces, equals 896 spaces. (See Appendix 3 for a table summarizing these numbers). The 1993 Master Plan recommends that general surface parking be eliminated from the campus core, since core parking areas impede pedestrian movement and may be more valuable as sites for new development and related open space. Three special cases in the East Area merit close attention.

The University Health Services lot allows UHS patients to park close to their destination. This amenity is especially needed since the nearest PVTA stop is on North Pleasant Street. This lot needs to remain close to Health Services to serve users who may be too ill to walk from a perimeter lot, and presents a real challenge for planning since it is within a part of the East Area that is already near its maximum development density.
Existing Parking Areas

- Motorcycle Parking at the East Experiment Station
- 63:1 Permit Lot: 92 Spaces
- 63:4 Permit Lot: 15 Spaces
- 62:S Service Lot: 14 Spaces
- 62:3 Permit Lot: 3 Spaces
- 62:S Service Lot: 20 spaces
- 62:2 Permit Lot: 8 spaces
- 62:1 Permit Lot: 211 Spaces
- Meter Lot at Fernald: 20 Spaces
- 52:1 Permit Lot: 14 Spaces
- 52:S Service Lot: 22 spaces
- 63:2 Permit Lot: 77 Spaces
- 43:1 Permit Lot: 26 Spaces
- 63:3 Permit Lot: 44 Spaces
- Health Center: 29 Spaces
- Meter Lots at Franklin DC: 45 spaces
- Meter Lots along Infirmary Way: 14 spaces
- 46:2 Permit Lot: 31 spaces
- Meter Lots at New Africa House: 25 spaces
- Motorcycle Parking behind Gorman: 4 spaces
- 46:1 Permit Lot: 45 spaces
- Visitor spaces at Admissions: 9 spaces

Legend
- Parking Lots
- Buildings
- Study Area
Admissions has special parking needs, since it serves as one of the first points of entry for prospective students and their families. Attention should be given to making this lot attractive, convenient, and easy to find for those unfamiliar to campus.

Brett Hall, in the Central residential complex, houses disabled students who need adequate parking nearby.

Stakeholder Meetings

In this plan, stakeholders are defined as all the people who live or work in the East Area. This includes faculty, students, University staff, service vendors, and administrators. Neighborhood issues are also important in the East Area, particularly at Butterfield Terrace where there is a cluster of private homeowners. A preliminary list of key stakeholders is included in Appendix Six.

Planners met with many groups to gather their impressions of the major issues in the East Area. As the results of this investigative phase began to suggest possible solutions, they were used to spark discussion in a series of public meetings which took place in August, October, and November of 1996. Proposals for realigning roads, parking and open spaces were tested against the reactions of the East Area’s users.

This method took advantage of the intimate knowledge stakeholders possess about the places where they live and work, and integrated their needs into the planning process. Several overarching themes and issues emerged from these meetings.

Parking and Vehicular Access

Parking issues dominate quality-of-life discussions with stakeholders. A perceived shortage of permit and short-term parking leads to frequent abuses of service and permit lots alike. Parking is a neighborhood issue as well. If adequate commuter parking is not provided on campus, it migrates elsewhere, potentially having a negative impact on some Amherst neighborhoods. Maintaining or adding to existing numbers of parking spaces in the East Area is crucial.

Residents of the Central and Gorman residence hall complexes require space for loading in and out in the fall and spring, as well as some provision for everyday drop-offs.

The University Health Services (UHS) requires continuing access for emergency vehicles and drop-offs, and parking that matches existing levels at a minimum. In their current location, they have no direct bus service, which is very inconvenient for sick students.
Facilities and Space Allocation

Admissions, the special collections in Morrill, and several of the cultural centers in residence halls may be competing for new or expanded space in the East Area. Storage and shop space for maintenance work in the Central and Orchard Hill residence halls is also inadequate. While there are no specific plans to move any of these groups, the potential for one or more of them to seek new facilities is high within the next fifteen years. Each of these units have their own special sets of requirements for ideal siting.

In general, the East Area could use more auditorium space. On campus as a whole, existing auditorium classrooms are overstressed and suffer from high demand.

Maintenance and Service

New roads, walkways, and plantings should be coordinated with Physical Plant to ensure that they will be maintainable over a long period of time. Plowing and mowing have their own requirements that can be accommodated with foresight. All paved surfaces should be made strong enough to support the infrequent but necessary passage of maintenance or emergency vehicles.

Service access in the East Area needs overhauling. For each building, there is a best service entrance, ie. one close to central mailrooms, department offices, and elevators. If service access is planned at another door that is not as well placed, service workers will frequently ignore it and use the more efficient route. This leads to many conflicts between service vehicles and pedestrians, and also causes damage to walks, doors and lawns. Front-door and back-door entrances need to be clearly defined so that service functions and main entrances are separated.

Buffer/Edge Issues

Reuse of the University Apartments site will have a great impact on some neighbors. An appropriate use must be found for this key parcel in its dual role of campus gateway and neighborhood edge.

Pedestrian and Vehicular Traffic

Students unanimously expressed concern about the dangerous conditions along Chancellor’s Way, where heavy pedestrian and vehicular traffic are frequently in conflict. They also pointed out both the importance and the poor condition of the goat path that drops more steeply through the Rhododendron Garden. Both of these routes are heavily used by students travelling to the core of campus, and both are perceived as being only marginally safe.
Recreation at the Residence Halls

All the residence halls in this area suffer from shortages of active, outdoor recreation space. The few outdoor basketball courts available at Orchard Hill and at Gorman are constantly in use during warm weather. The distance of these residence halls from playing fields to the west or sports complexes like Totman and Boyden exacerbates the problem. More game courts or general playing fields should be provided nearby to meet this need.

Students also mention three additional “wish list” items: musical performance/practice spaces; bike paths and storage spaces for bicycles that are accessible, safe and protected from the weather; and appropriate places for skateboarding.
Goal and Objectives

The goal for the East Area Plan is to organize pedestrian and vehicular circulation, improve the physical quality of this part of campus, and accommodate new development. In support of this goal, the plan has four objectives. These are reviewed below, with the specific plan components that support each objective.

1. Pedestrian Corridors. Create an efficient, legible framework of pedestrian corridors that will be pleasing and safe for both new and regular users.

East-West Routes
These will be consolidated into three major routes and one secondary route. Each will be reinforced with plantings and site furnishings. The pedestrian system will structure future development in the East Area.

Worcester DC to the East Experiment Station: This route will be improved by realigning the path and installing lighting for safety along the wooded pedestrian path that links the area with Orchard Hill.

Orchard Hill to Morrill Courtyard: The plan recommends closing Chancellor’s Way to vehicular traffic. This closure will transform Chancellor’s Way into a safe, ADA-accessible route down the steep grade of Orchard Hill, linking with the new Stockbridge Mall. The alternate route down the hill through the Rhododendron Garden will be stabilized to prevent further erosion.

Orchard Hill to the Fine Arts Center via Central: This route will be improved by creating a pedestrian plaza and raised crossing area through the parking lot of the Central Residential Area; closing Stockbridge Road to through traffic - eliminating conflicts between pedestrians and vehicles; and creating a clear crossing at North Pleasant Street with designed areas on each side for people to congregate safely.

Clark Hill Road: The steep descent from Orchard Hill to the Fine Arts Center is a secondary pedestrian route. The eastern portion of this route will remain much the same, providing a direct but taxing way up and down Orchard Hill. With the realignment of the western end of Clark Hill Road through Lot 62 pedestrians will have a clear sidewalk leading to a formal crossing of North Pleasant Street, possibly with a traffic signal.
**North-South**

North-South pedestrian flow will have two main channels: North Pleasant Street, and Stockbridge Road; and a secondary route from the Rhododendron Garden along Infirmary Way to Hills House. There are necessary improvements to be made along all three of these routes.

**North Pleasant Street:** The pattern of diffused unsafe crossings along North Pleasant will be controlled by clearly defining crossing points. The current crossing point, in front of Morrill’s main doors (x), will be eliminated through the use of a raised walkway along North Pleasant Street.

Walkways will meet grade at the north and south end of Morrill to provide clearly defined crosswalks. A wall and railings between those two points will prevent random crossing.

A bike lane will be provided at street level as outlined in the 1995 plan for the Campus Pond. This redesign also permits the main entrance of Morrill and the lowest level of the Morrill courtyard to be made ADA accessible.

**Stockbridge Road:** The central portion of Stockbridge Road (heavy dashed lines) will be closed to through vehicular traffic and made into a major pedestrian mall. The road presently does not carry essential traffic and is used mostly as a shortcut to avoid North Pleasant Street. This move will allow pedestrian traffic to move safely through the area. Service access to all buildings will be provided.

This proposal is the centerpiece of the East Area Plan, both physically and symbolically. Closing Stockbridge Road converts it into a green spine that connects most of the other pedestrian routes, giving the whole area a new focus and cohesiveness.

Many of the most important landmarks of the original Massachusetts Agricultural College are located on the Stockbridge Road corridor, which is itself an historic feature of the campus. Current and potential uses of these buildings lend themselves to an historic district and pedestrian mall. The Faculty Club, which is housed in the oldest building in the town of Amherst, is a popular destination and important Amherst landmark. Durfee Gardens and Conservatory is an award-winning outdoor gathering space that is also heavily used by the university community for three seasons. Other buildings along this road are rapidly approaching the end of their useful lives as classroom or lab space, but may be renovated for office or exhibit space.

When the parcel where Marshall Hall was is redeveloped, the pedestrian corridor will be extended through this new area to continue a strong North-South corridor.
The road and sidewalk in front of Morrill will be redesigned to prevent the current diffused pattern of crossings. This plan shows the following elements:

A. A raised walkway with a rail that keeps pedestrians above North Pleasant Street (and on the sidewalk).

B. An ADA accessible ramp to the lowest level of Morrill Courtyard. Tree plantings are also shown.

C. Plaza at Morrill Courtyard regraded to provide ADA accessible entrances.

D. Main entrance plaza regraded to provide an ADA accessible entrance and Campus Pond overlook.

E. New bike lanes along North Pleasant.
Open Space Networks. Plan a series of open spaces along the pedestrian corridors that provide much-needed outdoor recreation and gathering spaces. Support this network with new plantings that enhance and expand the Frank Waugh Memorial Arboretum.

There are three major headings for discussion of open space. As specified in the 1993 Campus Master Plan, there will be open space along pedestrian corridors to enliven the experience of moving through campus. Along with this general recommendation, there is a specific need for more recreational space at Central Residential Complex. And finally, the Campus Arboretum will be integrated with all planning and development to support teaching and research in the East Area.

Open Space along Pedestrian Corridors
Stockbridge Road’s pedestrian mall is the historic core of the University and links the other pedestrian corridors together. Secondary pedestrian intersections will have smaller landscaped spaces, providing maps for new visitors at decision points, seating, lighting, kiosks, and other pedestrian-oriented amenities.

Residential Open Space at Central Residential Complex
Another area desperately in need of more designed open space is the Central Residential Complex, where students currently have parking and traffic at their front doors and steeply sloping grass cut by paved paths at their rear entrances.

The lack of active recreation space at Central will be solved by a redesigning the lawn between Central and Franklin Dining Commons. This area is large enough for recreation but is currently unsafe due to its steep and uneven grading. Level, open grass and formal game courts will be accommodated in this large space.

On the upper level of Infirmary Way, passive recreation space will be provided within the complex as part of a vehicular circulation system that would slow and reduce traffic passing through the heart of the residence complex. Some parking will be replaced by seating and planting areas. This recommendation is described more fully under Vehicular Circulation.

Frank Waugh Arboretum
Protection, mapping and labeling of existing significant trees and other historic plantings is the first priority. With potential major construction projects looming on the horizon, the identification of most important specimen trees and other plantings in the East Area is a
Conceptual Plan for the Stockbridge Historic Core and Pedestrian Mall. In this plan, a vehicular drop-off at the northern end of the Mall is met by a bosque of trees. The entire Mall will be livened by plantings of specimen trees, seating areas, and connections to the destinations and continuing pathways along its length.

**Key:**
- Existing significant specimen trees
- Proposed new trees
- Proposed seating areas

New Loop Road: to North Pleasant via Stockbridge Road

Entrance Node/Pedestrian Drop-off

New Loop Road: to Eastman Lane via Thatcher Way

To Morrill Courtyard

To Central Residential Area

To Campus Core

Durfee Gardens

Faculty Club

Service crossing for Morrill Science Center

French Hall

Clark Hall

Outdoor dining terrace

Clark Plaza

Wilder Hall

Franklin Dining Commons

Southern Pedestrian Node
matter of some urgency. Plantings for new open space nodes or around new buildings will support the Arboretum’s teaching, research and outreach missions while enriching the visual and academic environment. As new projects are planned in more detail, opportunities to build on this resource will be plentiful. Friends of Durfee Gardens is an established group with a long-term interest in the landscape of the Durfee area as well as much of the East Area. Future planning for the Waugh Arboretum will coordinate closely with the Friends regarding planning, design, implementation and management of these plantings, in accordance with overall campus arboretum policies.

3. Vehicular Circulation and Parking Organize vehicular and service circulation and parking in an efficient manner, to minimize impact on the pedestrian framework.

The plan makes major changes in vehicular circulation, parking and identifies the potential for approximately 300,000 assignable square feet of new building development. The plan proposes three major changes to circulation to establish this framework.

The three major proposals are the closing of Stockbridge Road, the extension of Clark Hill Road to intersect with North Pleasant, and the connection of Thatcher Way and Northern Stockbridge Road.

Stockbridge Road closure: Stockbridge Road will become a pedestrian mall and historic district to celebrate the best of the past and the present. With the closure of this road to vehicular traffic, loads on North Pleasant Street may increase, but pedestrian conflicts will be reduced.

No major parking lots are lost directly through this change and no bus routes currently use Stockbridge Road. It does serve as an emergency route when North Pleasant Street is closed. When necessary, overflow traffic will be directed east to the new Commonwealth Avenue/Governor’s Drive loop. Service access is preserved by making minor changes in routing. The only major service change proposed is the creation of a new route from Franklin DC west to Morrill, where an important service alley connects the buildings of the complex.
Planned Pedestrian and Vehicular Circulation

Legend

Pedestrian Circulation
- Pedestrian Mall
- Primary
- Secondary

Vehicular Circulation
- Major
- Minor
- Service

Bus Stops

Revision Date: January 20, 1997
**Clark Hill Road extension:** Clark Hill Road will be extended through lot 62 until it intersects North Pleasant Street. This proposal provides a more efficient intersection with North Pleasant Street that is safer than the existing intersection at Infirmary Way and eliminates the back-up of traffic that occurs in front of the Newman Center. The new road makes a more logical connection for both vehicles and pedestrians moving from east to west. It also creates defined infill development sites opposite the Fine Arts Center and in front of Hills House.

The realignment enables a major campus pedestrian gateway/node to be formed at the south end of Hills House. This node will be on a clear visual axis with the proposed Stockbridge Mall/Historic District. Concurrent with this realignment, the study recommends removing as much short-term and metered parking as possible to reduce traffic flow through the Central Residential Area. Some existing parking spaces such as the handicapped spaces at Brooks Hall, the parking spaces that serve the University Health Services, and spaces for resident advisors throughout the Central complex must remain.

*At left: this conceptual plan for the Infirmary Way Loop includes the following elements: 1. A new parking deck behind French Hall 2. A ‘woonerf’ to slow traffic and improve the pedestrian environment within the Central Residential Complex 3. A new graded general purpose playing field between Wheeler Hall and Fernald*
Removing some parking from Central presents further opportunities to improve the quality of life for students who live in these residence halls. At Central, the passage of vans and service vehicles must be accommodated, and ambulance traffic will occasionally need access to the University Health Services as long as it remains in its present location.

While traffic must continue to flow through this area, the behavior of drivers can be altered by changing the conditions of their passage. The road will be made subservient to the pedestrian way through the use of a raised pedestrian crossing with a change in paving material that marks the pedestrian crossing. A slight curve in the road will force traffic to slow down and an increase in the width of the sidewalk will permit pedestrian amenities like trees, benches, lighting, and bicycle racks.

Access to the Newman Center will be altered. The north driveway of Newman will become a pedestrian way. Cars will have a one-way entrance from North Pleasant Street, and two-way access from Massachusetts Avenue. Service access to Hills House and Gorman Hall will also change: it will enter from Clark Hill Road rather than North Pleasant Street. Admissions traffic will come from Butterfield Terrace.

This change may affect the amount of traffic that discharges onto East Pleasant Street from Clark Hill Road. This intersection must be improved through a joint effort between the University and the Town of Amherst.

To improve safety, the road has been curved and the pedestrian crossing elevated to slow traffic. New space for trees, benches, and bike racks will be created.
Thatcher Way and northern Stockbridge Road loop: With the closure of the historic core of Stockbridge Road to through traffic, a new vehicular loop must be provided to carry traffic to and from Morrill, Durfee Range, and other destinations in the northern central portion of the East Area. The loop proposed here has several functional advantages. It provides access but discourages casual traffic through the East Area; it allows service vehicles to access all necessary buildings; and it defines and services an infill development site in the area south of the Worcester Dining Commons. This study also recommends the closure of Chancellor’s Way to through traffic to form an accessible pedestrian route from Orchard Hill to the academic core.

Reassessment of the current network of parking: Parking spaces will be eliminated along Thatcher Way to allow room for new traffic. Spaces along Infirmary Way, within the Central residential complex, at the Fernald meters and at the Franklin DC will be reduced or removed to reduce pedestrian/vehicular conflicts and eliminate the phenomenon of cars circling around the loop seeking short-term parking. Part of Lot 62:1 will be discontinued to allow the extension of Clark Hill Road to pass through to North Pleasant Street.

Parking for short-term and visitor vehicles will be consolidated and improved, to provide destinations like Admissions, the Career Center, student cultural centers and potential museums with adequate parking. This will occur in surface lots at Worcester Dining Common, Lot 62:1, Marshall Hall, and the University Apartments, and at a parking deck at the French Greenhouses. A minimum of 400 additional parking spaces will be provided over the long term, to support new development and to mitigate parking changes. These spaces may take the form of parking decks or multi-level structures. See Appendix Three for more specific parking data.

Conceptual design for a University Health Services parking deck. This illustration shows a two-level parking deck for 150 cars total. This deck takes advantage of the twelve foot grade change between the front of UHS and the lower level at the French greenhouses. Separate access to each level of parking is provided.
Infill Development and Land Use. Create logical space for new infill development that will support and enhance existing patterns of development, potentially forming academic clusters or quads.

There is space for significant infill development in the East Area, but making it available for use depends on balancing parking and all the previous systems carefully. The options below show how making careful changes in these systems can yield new development sites. In the short term, the historic buildings of the Stockbridge Historic Core will be considered prime candidates for adaptive reuse. The formation of the pedestrian mall to link these buildings makes them extremely attractive for uses that draw visitors to the campus, such as a Career Center, an Admissions Office, a campus museum, or other similar uses.

Strategic demolitions of buildings with little historic importance that are beyond renovation and reuse will continue.

In the long term, four development sites with a total of 300,000 s.f. have been identified through the framework changes recommended in this plan. In moving to the development phase, building programs will be matched with appropriate sites. Development of the past has been concerned largely with the building’s interior spaces. This is certainly a continuing concern, but must be balanced with a concern for the exterior spaces the building defines. The pedestrian corridors, open space network, and arboretum proposals made here become even more relevant as the process of designing a new structure begins. Several of the sites identified below will require creative accommodation of these related systems.

The current location of the University Health Services (UHS) is unsatisfactory because the user base has changed. The facility is serving a greater number of off-campus people with out-patient care and there is no direct public transportation and it is not located on a major road. A study of potential alternative sites outside the East Area will be undertaken with the goal of the eventual relocation of UHS.

These changes work together to form new patterns of access, parking, and experience. The framework described above can be achieved in several ways, depending on interrelated factors of parking availability and space needs. Two options for implementation are described below.
Options for Implementation

Minimal Development Option

The Minimal Development Option is an intervention plan that fully implements the East Area framework and mitigates parking impacts with surface parking only. Due to limited space for parking development in surface lots, in this option there is no capacity for new building development. There is no proposed building demolition in this option.

In this option, central Stockbridge Road is closed, permitting the formation of the Stockbridge pedestrian mall through the historic core. Clark Hill Road is brought through its new route to North Pleasant Street. Thatcher Way and the northern section of Stockbridge Road are joined together, generally following their present routes. University Health Services parking is retained in its current location. Chancellor’s Way is closed to through traffic forming an accessible pedestrian route from the Orchard Hill residence halls down to the East Area.

This plan would allow the new pedestrian structure described above to be fully implemented, along with open spaces and new tree plantings in support of the Waugh Arboretum. Most of the stated minimal goals for vehicular circulation and parking can be met in this option through retaining some existing lots, adding new surface lots, and realigning service routes in some places. This plan does not create enough parking to permit any new development in the East Area (see Appendix Three for a detailed parking analysis).

This plan is a viable option in its own right for making major improvements in quality of life and working efficiency, or as a transitionary plan aimed at later achievement of the Preferred Development Option.

Preferred Development Option

This option is more ambitious in its proposals, but results in a stronger physical framework and significant future building development opportunities. To realize these benefits, this option proposes the eventual demolition of University Apartments, the Foundry, Marshall Annex, and the French Hall Greenhouses. The option proposes development of one multi-level parking structure and two parking decks (surface level plus one structural level) to provide support for approximately 300,000 net square feet of new building development.
Minimal Development Option

Legend
- Proposed Road and Existing Lot System
- Proposed Parking Lots
- Discontinued Lots and Roads

Revision Date: 2/22/97
In addition to the circulation and parking changes recommended in the Minimal Development Option, this option recommends the following developments. Parking decks (surface parking with one level above) are proposed for the Worcester Dining Commons lot, and at the present site of French Hall Greenhouses. A new parking structure (3 or 4 levels) is proposed for the northern portion of lot 62.

This plan allows the pedestrian framework described above to be fully implemented, along with open spaces and new tree plantings. Goals for vehicular circulation are met or exceeded through the realignment of roads and the creation of some new service routes that are properly separated from pedestrian routes. Existing parking needs are met or exceeded through consolidation of parking into one structure and two decks.

**Development Capacity in the Preferred Development Option**

There are two methods to estimate development capacity under this option. The parking yield method determines the capacity of proposed parking lots and structures and extrapolate a gross square footage of new development permitted in the space remaining. The development yield method determines the development capacity of proposed development sites, then calculates the amount of parking required to support it. Ultimately, parking capacity and development capacity must be balanced.

Both of these analyses were performed for the Preferred Development Option. The results of the parking yield analysis are summarized in the table below. The configuration of proposed parking decks, lots, and structures was totaled to yield a new parking capacity. The ratio of assignable square footage to parking spaces is kept constant, yielding 287,015 assignable square feet of new development.
Preferred Development Option

Legend
- Proposed Road and Existing Lot System
- Proposed Parking Lots
- Proposed Parking Structures
- Discontinued Lots and Roads
- Building Demolitions

Revision Date: 2/22/97 sg
Development Yield Based on Parking: Preferred Development Option

Existing assignable s.f. of buildings 613,760 a.s.f.
Existing parking spaces 896
Existing a.s.f. per space 685 s.f.
Net gain of parking spaces proposed in Option B 419
Parking ratio 1 space per 685 a.s.f. (same as existing ratio)
Development Yield in a.s.f 287,015 a.s.f.

The second analysis estimated development capacity and then extrapolated parking required to support the development. With the results of the above analysis in mind, a yield of approximately 290,000 assignable square feet in this second analysis indicates that a proper balance between parking and development is likely.

The master plan framework shown in Option B identifies four potential development sites. Assuming that new development sites will be developed with an average 50% coverage, building footprints can be calculated and extended to estimate gross and net assignable square footages for three-story buildings on average. The following table shows the results of this analysis of parking supply and demand as related to development capacity. When a figure of 70% assignable square feet/gross square feet is used, the development yield totals 295,010 a.s.f.; a close match to the numbers indicated above.

Development Yield Based on Development Zones: Preferred Development Option

<table>
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<tr>
<th>Area</th>
<th>Acres</th>
<th>Square Feet</th>
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<th>3 Stories (g.s.f.)</th>
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<td>Total</td>
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<td>140,481</td>
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</table>
Land Use and Preferred Development Framework

This plan recommends two kinds of development in the East Area: academic and visitor/administrative. “Development,” in this document, includes both the construction of new facilities for academic purposes, and the conversion of existing historic academic structures to other uses. It recommends that the framework and parking proposals of the Preferred Development Option are fully implemented.

Academic Facilities

There are four major infill sites identified in this plan. It is important to understand that these development zones are schematic only. Important development guidelines are articulated for each site as is the potential for flexibility in the final design of buildings.

Development Guidelines

Site 1  Approximate development yield: 59,000 gross square feet
• Height limited to three stories to match North Pleasant Street facades.
• Setbacks to match neighboring Skinner Hall, accommodating pedestrian corridors along North Pleasant and re-aligned Stockbridge Road/Thatcher Way loop.

Site 2  Approximate development yield: 114,000 gross square feet
• Height limited to three (above-ground) stories to maintain pedestrian scale along upper section of Stockbridge Road/Thatcher Way loop.
Potential opportunity to build a large structure into the slope, yielding more development space. (Note: any development above 114,345 gsf must compensate with some form of parking beyond that estimated in the associated lot to the east and/or north.)
• Opportunity to configure parking and building development innovatively. For planning purposes, Site #2 and the surface lot shown to the southeast are part of a balanced unit. Layout shown on Land Use and Preferred Development Plan is schematic: as long as parking and building development are balanced adequately within this unit, many building and parking lot configurations are possible.

• Setbacks must accommodate pedestrian travel along Stockbridge Road/Thatcher Way loop. Building/parking configuration must accommodate pedestrian travel through the heart of the parcel through some system of pathways and courtyards.

• As the terminus of the Stockbridge Historic District and Pedestrian Mall, the southernmost face of this building must be attractive and welcoming to pedestrians.

Site 3  Approximate development yield: 72,000 gross square feet

• Height limited to three (aboveground) stories to maintain views from Butterfield Terrace, Central residential complex, and Clark Hill. Potential opportunity to build a stepped structure into the slope, yielding additional space. If additional development is cut into the slope, additional parking must be provided.

• Opportunity to configure parking and building development innovatively. For planning purposes, Site #3 and the structure shown to the north are part of a balanced unit. If the structure can be placed more effectively on part of Site #3, part of the site’s allotted development may occur on the land shown as structure. As long as parking and building development are balanced adequately within this unit, many solutions are possible.

• Setbacks must match neighboring Morrill complex and accommodate pedestrian travel along North Pleasant Street.

• Pedestrian travel and visual connections through the center of the parcel must be accommodated. Building may take place over this corridor on second and third floors as long as the pedestrian corridor is adequate.

• As the terminus of the Stockbridge Historic District and Pedestrian Mall, the northern face of this building must be attractive and welcoming to pedestrians. Open space to the south of the building forms part of the gateway to campus and will be designed appropriately.

• As the terminus of the Fine Arts Center’s “grand walk” to the west, development on the structure site must present an appropriate and attractive face to the west.

• Pedestrian linkages will be integrated with the building design.
Site 4  Approximate development yield: 176,000 gross square feet

• Height limited to three stories to maintain views from the Butterfield Terrace neighborhood.

• Pedestrian circulation corridors must be accommodated, especially along the western and southern sides of the site where a major pedestrian route links the campus and the town of Amherst.

• Opportunity to configure parking and building development innovatively. For planning purposes, Site #4 and the surface lot shown within the site are part of a balanced unit. As long as parking and building development are balanced adequately within this unit, many solutions are possible. Access to parking and service is best accommodated from Butterfield Terrace to prevent congestion along North Pleasant Street.

• As the southeastern gateway to campus and a transitional parcel between campus and town, this building must be attractive and its program must be chosen carefully. Neighborhood input during site design is especially important on this site.
At present, no new development is planned in the East Area, but it is likely that as development pressures increase, new development will occur within this highly desirable part of campus. Implementation of the framework described in this plan may begin in a number of ways, as part of utility corridor upgrades, road or parking lot improvements, or new building projects. The framework provides a unified, reliable guide to ensure that the East Area can move towards the balanced system described in this plan.

While many of the recommendations made in this document may occur independently of each other, there are some key steps that must take place in order to avoid unnecessary disruption of life in the East Area during implementation.

The following recommendations are included in the plan to guide strategic decision-making:

**Open Space and Pedestrian Circulation**

**Short Term:**
- Close Stockbridge Road from Fernald Hall to Durfee Gardens to create an Historic District and Pedestrian Mall.
- Install north-south and east-west pedestrian corridors identified in the Master Plan and provide nodes for gathering spaces at intersections which include seating, lighting and landscaping.
- Improve secondary path systems to Orchard Hill including: Worcester Dining Commons Path, Rhododendron Garden Hill Path, and Chancellor’s Way path.
- Initiate changes in the residential complex to reduce traffic, improve pedestrian circulation, increase open spaces and landscaped areas, and provide additional recreation areas.
- Map and label specimen trees and historic plantings to be preserved.

**Long Term:**
- Develop the future phases of Durfee Gardens.
- Enhance landscaping throughout the area in support of the Arboretum concept.

**Circulation and Parking**

**Short Term:**
- Close Stockbridge Road between Fernald Hall and Durfee Garden to through traffic.
- Extend Stockbridge Road to the east at Morrill to connect with Thatcher Way, forming a northern loop road.
- Close Chancellor’s Way to through traffic and convert to a pedestrian route.
• Eliminate spaces along Thatcher Way, Infirmary Way, within Central Residence complex (partial), Lot 62 (partial), Fernald meters and at the Franklin Dining Commons (partial) to reduce pedestrian/vehicular conflicts and eliminate circling for spaces.
• Provide replacement parking by expanding the following lots: Worcester DC and Lot 62 in two segments in the grassy area to the south of the existing lot.
• Provide two new parking lots for replacement parking spaces within the proposed Thatcher Way loop.

**Long Term:**
• Extend Clark Hill Road at the intersection with Infirmary Way straight to North Pleasant Street to create a new intersection farther to the north than the existing intersection at the Newman Center.
• Close Infirmary Way in front of Hills House to relieve traffic congestion at the intersection in front of the Newman Center.
• Re-route circulation to enter the Newman Center from the south entrance only, exiting onto Massachusetts Ave.
• Convert the northern driveway of the Newman Center to a pedestrian way.
• Re-route the service circulation to Hills and Gorman to enter from Clark Hill Road.
• Re-route Admissions traffic through Butterfield Terrace.
• Improve the intersection of Clark Hill Road and E. Pleasant Street by working with the Town of Amherst to examine the intersection and traffic controls.
• Increase short term and visitor parking based on consolidating uses for Admissions, Career Center, student cultural centers, and museums through a combination of parking structures, parking decks and new surface lots at Worcester DC, Lot 62, French Greenhouses, Marshall Hall and University Apartments.
• Provide a minimum of 400 additional spaces to support new development and to mitigate current parking deficits.
• Relocate all major utilities underground, including electrical and steam.

**Land Use and Development**

**Short Term:**
• Plan the adaptive reuse of buildings in the proposed historic district.
• Continue strategic demolitions of buildings deemed to be unsuitable for renovation once replacement space has been provided based on program needs.
Long Term:

- Designate four development sites which yield approximately 300,000 a.s.f for academic use.
- Match proposed development programs with appropriate infill sites and make the appropriate infrastructure changes associated with the site development.
- Recommend appropriate alternative sites outside the East Area for relocating the Health Center.
## Building Use Information

<table>
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<tr>
<th>Building Name</th>
<th>Year of Construction</th>
<th>Gross Building Area (sq. ft.)</th>
<th>Department/Use Type</th>
<th>Assigned Area by Department/Use Type (sq. ft.)</th>
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<td>1988 (renovated)</td>
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<td>Administration</td>
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appendix - 2
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**Total gross existing area:** 1,143,210 sq ft

**Total net existing assigned area:** 632,181 sq ft
The University of Massachusetts came into existence as the Massachusetts Agricultural College in 1864. The original parcel of land purchased to found the school included the Stockbridge House, a colonial farmhouse then already over one hundred years old. During the early years of the College, buildings like the East Experiment Station were built for highly specific agricultural programs. As the College grew and its academic offerings broadened, more buildings were erected for various departmental uses, and many of these buildings faced onto Stockbridge Road.

Today, after one hundred years of expansion to the west, the geographical center of the campus is closer to the Campus Pond. Even now, however, the historic core along Stockbridge Road still has the power to recall the early days of the Massachusetts Agricultural College, for those who care to seek it.

**CLARK HALL**

**1901**

**Historical Use:**

Clark Hall was built to accommodate scientific teaching and research, particularly in the field of botany. It originally housed laboratories associated with the Experiment Stations and a museum/herbarium. This botanical resource contained thousands of species of flowering plants, ferns, mosses, lichens, liverworts, and fungi.

Clark Hall was named after the third president of the College (1867-79), William Clark. Clark’s influence and accomplishments form a long list of public service, including his leadership in obtaining a college chapter for the College, membership in the State Board of Agriculture (1859), membership in the House of Representatives (1864), his teaching work at Amherst College in Chemistry, Botany, and Zoology, and his founding of Hokkaido University in Japan. This final achievement began an international association that brought some of the first plantings of rare Asian trees and perennials to this country, where they found homes on the campus of the College and in Boston’s Arnold Arboretum. Clark’s other research projects produced useful studies in the flow of sap in sugar maples, and at one time he grew a giant squash whose growth force gave enough power to lift 5,000 pounds.

In recent years, the high quality of the natural light available through the huge windows of the upper floors has made Clark a natural home for Studio Art.

**Architecture:**

Architect Cooper’s design reveals a series of slightly recessed window arches reminiscent of the Romanesque age. Heavy dentils under the eaves and the entranceway give further evidence of a leaning towards classical design. Overall, the architecture of Clark is more interesting than either French Hall or Fernald Hall, its close relatives. Like Fernald Hall and nearby Wilder Hall, Clark has large bracketed eaves below its roof, which connect it to its neighbors visually. Clark Hall was built to have two entrances that overlooked sweeping views to east and west. The western view overlooking the Campus Pond has been blocked by the solid bulk of the Morrill Science Complex and its attendant greenhouses.
Area and Context:
Because the scale of the building is small by today’s standards, Clark marks the beginning of the historic core and signals a zone that is more pedestrian-friendly than some newer parts of the campus. It forms one of the edges of the central Stockbridge Road corridor.

Recommendations:
Clark Hall isn’t as historically rich as Stockbridge Road’s most precious buildings, Wilder Hall and the Faculty Club. However, its architecture is more interesting than nearby buildings like Fernald, French, or Skinner Hall, and its position serves an important function in forming the historic core. The space that would be gained by its removal may not be as valuable as the service it provides in its current location.

EAST EXPERIMENT STATION 1889

Historical Use:
This building was erected in 1889, for $10,000, to house operations of the Bureau of Government Research. This was the first building in this country erected to examine intricate questions of agricultural plant growth, and the relation of fungus growth to plant diseases. There are steam pipes that run directly below the building, and these make laboratory spaces damp and moist. The first floor contained an office, two labs, and a photographic studio. The second floor is divided into four rooms of equal size. There used to be handsome greenhouses of Victorian style at the rear.

Architecture:
The East Experiment Station is a handsome, small, Romanesque building. This stylistic affinity is seen most strongly at the front door and the second floor windows, some of which are fitted with stained glass panels in their upper halves. Small details like the unusual rainspouts also echo the Romanesque Revival’s fascination with the quaint and the eccentric.

It is two and a half stories high, with brownstone trimmings; a frontage of forty feet, and a depth of thirty five feet. The building was designed by E. A. Ellsworth of Holyoke, a graduate of the College.

Area and Context:
This building doesn’t really contribute to definition of the Stockbridge Road corridor with the other old buildings; it is more related to North Pleasant Street. However, it does provide the beginnings of an edge between North Pleasant Street and the pedestrian environment around Worcester DC.

Recommendation:
This building should be saved for its visual attractiveness and for the contrast it offers to other buildings nearby, especially in its scale and its intricate detailing. It is also historically significant, both for its age and for the unique role it played in the early days of the University.

Any development near this important building will have to be carefully scaled to frame and enhance the Station rather than overpowering it.
FERNALD HALL  1909-10

Historical Use:

The Hall, with its offices, classrooms, and steeply pitched auditorium, was originally built to be a state-of-the-art home for Zoology and Entomology. The cost of this building at time of construction was considerable: eighty thousand dollars. Twelve years after its construction, it was given its permanent name in honor of Henry T. Fernald (1839-1901), Professor of Entomology and director of the College. Museums provided in Fernald housed extensive collections for zoology (12,000 species samples), entomology (100,000 species samples) and a smaller collection for geology.

Architecture:

Architect Hoyt’s design is not too unusual, and is best described as conventional Georgian Revival. Red brick walls with stone trim and vertical strips of brick at the corners and between windows suggest Georgian without copying the style directly. The simplified classic forms of the doorway are more monumental in proportion and scale than the rest of the building. Like the other campus science buildings erected at about the same time, the interior functions are disguised by the desire for exterior symmetry and collegiate dignity.

Area and Context:

Because it sits back from Stockbridge Road, Fernald Hall doesn’t contribute much to the definition of the Stockbridge corridor. The building’s scale and proportions make it unfriendly to pedestrians, and the large allotment of open space around it gives it a sense of floating, with a minimal affinity to other nearby buildings. The qualities of color, age and materials that Fernald shares with Clark and French have some value as a unifying factor along Stockbridge, but this effect is minimized by the distance between them. Fernald has serious structural problems, specifically in the overly expansive materials used to make the concrete for the floor decks. This has led to numerous cracks and chunks falling from the ceilings, necessitating frequent repair. Correction of this problem would be very expensive.

Recommendations:

Fernald Hall’s history and architecture are not particularly unique on the University campus. Many people have used Fernald’s rooms and may have a nostalgic attachment to the building, but the combination of its poor placement, its lack of historic or architectural significance, and its persistent structural problems make Fernald the building least worthy of preservation on this list.

FRENCH HALL  1907-08

Historical Use:

The constant expansion of studies related to agriculture in the late nineteenth and early twentieth centuries required more space, and French Hall was erected particularly for instruction in floriculture and market gardening. Its connecting greenhouses,
Historical Use and Context:

Although the School of Home Economics was not founded until 1946, under the leadership of Dean Helen Mitchell, faculty in the field were appointed much earlier. Miss Edna L. Skinner, a graduate of Columbia, had joined the faculty in 1919 to establish a home economics curriculum. Skinner Hall was named after her and still serves as home to related subjects.

Architecture:

Architect Louis Warren Ross of Boston designed Skinner Hall as well as many other buildings on the campus, including several dormitories and the Student Union. All his buildings are in a simplified, rather undistinguished brick Georgian Style. Harmonious in color and shape with nearby dormitories, and hidden by Hasbrouk Hall, Skinner creates no particular visual impact, except for some interesting spaces created between it and the Morrill Science Building to the south. The entrance doorway closely imitates those of eighteen-century houses in the Connecticut Valley, but is increased in size to conform to the scale of the building.

Area and Context:

The scale of the building is friendly to pedestrians. It sits close to Stockbridge Road and forms part of the well-defined edge of the central portion. Its proximity and position relative to Wilder Hall, the Faculty Club, and Clark Hall supports the feeling of historical presence that is characteristic of this part of Stockbridge Road. French Hall also provides an important architectural edge to the central courtyard of Durfee Gardens.

Recommendation:

The historical significance of French Hall rests in its name and symbolism more than in any architectural qualities. Its central position in the historic core makes it more important as an ensemble player. As a backdrop for more significant buildings like Wilder Hall and the Faculty Club, French Hall provides an important service.
Recommendation:

Skinner’s fitness for future needs should be the major criteria used to determine its future role. Architecturally and historically, the building itself isn’t significant enough to mandate its preservation as a historical monument.

FACULTY CLUB

The Faculty Club occupies two of the oldest and most historically significant buildings in Amherst. Stockbridge House is over 265 years old, and the Homestead is over 270 years old. The historical and architectural significance of each is discussed in turn below, and their combined context and a recommendation for them as a single unit housing the Faculty Club is discussed at the end.

STOCKBRIDGE HOUSE 1728

Historical Use:

Samuel Boltwood bought 111 acres on North Pleasant Street in 1727 and moved his family the following year from Hadley to the farmhouse he had built. It probably was the first house built in Amherst and certainly is now the oldest. John Field, son-in-law of Samuel Boltwood, owned the farm from 1750 until after the American revolution. By 1794 Nehemiah Strong owned the property, but transferred it that year to Elijah Hastings, blacksmith. Levi Cowls married Rebeckah, a Hastings daughter, and the property became his until 1834 when Levi died. Chester Cowls, Levi’s nephew, owned the farm until 1864 when it was purchased for the Massachusetts Agricultural College. Several of the first presidents of the College lived and worked in the farmhouse, but it became most persistently associated with Levi Stockbridge, who served as president between 1876 and 1879, and then again between 1880 and 1882. In 1876 Stockbridge took over as president after William Clark resigned. Stockbridge moved into the president’s rooms in the farmhouse, and also served as an instructor of agriculture and the first superintendent of the farm. He wrote lectures, planned experiments, and received students, faculty, and visitors in his office above the woodshed.

In 1934 the house was restored and converted into the Faculty Club. The Shade Tree Lab was added in 1948. In 1972, the Homestead (discussed below) was moved in beside Stockbridge House from its original location on Sunderland Road.

Architecture:

The plan is traditional seventeenth century colonial saltbox, with a central door entering to a stair vestibule, central chimney, and a lean-to extension to the west. The roof is clad with slate and the walls with a wooden clapboard exterior. This style was common to Hadley in the seventeenth century.

THE HOMESTEAD 1735

Historical Use:

Land was purchased for a farm in 1727 along the Sunderland Road by John and Jonathan Cowls of Hatfield, two of the original inhabitants of Amherst. Their farmhouse was built by 1735, about one half mile north of Stockbridge house. The 300 acres and several buildings were still a farm in 1864 when they were purchased for the Agricultural College. The house was used at one time by the Experiment Station for studies on feeding and digestion in livestock. After restoration in 1929, the Home Economics School moved in.
In 1951 a complete restoration was necessary owing to attack by termites, though very few changes in the fabric of the building were made at this time. The Faculty Club expanded its facilities in 1973 by moving the Homestead to its present position and linking it with Stockbridge House by a clapboarded passageway.

Architecture:

Large and well groomed now, the house appears to have been built as an intentional addition to its new neighbor. One difference that reveals their separate origins is the small overhang of the second floor of the Homestead, a characteristic reaching back to European houses of the Middle Ages, but also commonly seen in other colonial houses in Hatfield and Hadley.

THE FACULTY CLUB: STOCKBRIDGE HOUSE AND THE HOMESTEAD

Area and Context:

Physically, the Faculty Club helps define Stockbridge Road as a corridor. Its scale is friendly to pedestrians, and its facade and entry garden are inviting. It is still widely used by both faculty and students for both departmental functions and informal socializing. The Faculty Club defines the center of the historical core along Stockbridge Road.

Recommendation:

The Stockbridge House and the Homestead are precious historical assets for both the town of Amherst and the University. The function that they house, the Faculty Club, provides a valued service to the East Area that is a pleasing combination of historical value and genuine usefulness. This building complex is the heart of the East Area and should be protected by sensitive, careful development that enhances its usefulness and its significance.

WILDER HALL

Historical Use:

Marshall P. Wilder was a founder of the New England Horticultural Society (1829), helped establish the Massachusetts Academy of Agriculture (1845), and as president of the Norfolk Agricultural Society became enthusiastic about agricultural education. Wilder was the first to suggest forming a Massachusetts Agricultural College and in 1852 began the State Board of Agriculture.

Wilder Hall was the first building in the United States dedicated to Landscape Architecture.

Architecture:

Architect Willcox, born in 1869, learned his profession during the period of the playful Queen Anne Style. Refinement of ornament and perfection in detail combined with artful disunity characterizes the work of this era, and there is much of this feeling in Wilder Hall. However, Willcox was certainly aware of the early buildings of Frank Lloyd Wright, who was beginning to build in what was to become the “Prairie Style. The flattish roof broadly overhanging the walls and a sense of symmetry without other references to classical architecture mark Wright’s influence.

Wilder Hall is a very handsome building with many interesting details. The low-pitched, hipped roof with its green tiles, the winter conservatory on the western side with its Italianate arches and columns, and the decorative medallion on the front
façade contribute to its beauty and visual interest from the outside. Wilder originally had a strong relationship to the site it was built on, with sweeping views to both eastern field and western pond vistas. Morrill has broken that relationship to the west, but the installation of Durfee Gardens has once again given Wilder a front yard worthy of its fine eastern entry.

Shortly after completing this project, architect Willcox left New England for Seattle. He practiced architecture there until 1922, when he was appointed head of the State School of Architecture at Eugene, Oregon.

Area and Context

The position of Wilder Hall helps define Stockbridge Road, and also marks the crossing of a major east-west pedestrian corridor coming down from the eastern residence halls to the core campus. Wilder’s scale is friendly to pedestrians, and both the first and basement floors have at-grade entries, facilitating handicapped access.

Recommendation:

Wilder Hall is unique in its style and adds to the visual richness of the campus. Historically, it marks the University’s precedence in the field of landscape architecture. It is well-placed to enhance existing outdoor gathering spaces along Stockbridge Road, and served by useful entries at two levels. It should be kept for all of these reasons.
# Parking Data

**Existing Parking Lots**  For locating these lots, see the Parking Map on page 24.

<table>
<thead>
<tr>
<th>Lot Group</th>
<th>Map Key</th>
<th>Approx. Location of Sublots</th>
<th>Subcounts:</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permit lots (all administered by UMass except the UHS lot, which is administered by UHS):</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lot 43</td>
<td>43:1</td>
<td>Along Thatcher Way</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Lot 46</td>
<td>46:1</td>
<td>Gorman</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td></td>
<td>46:2</td>
<td>Admissions</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td></td>
<td>46:3</td>
<td>Central</td>
<td>36</td>
<td>76</td>
</tr>
<tr>
<td>Lot 52</td>
<td>52:1</td>
<td>Admissions</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>Lot 62</td>
<td>62:1</td>
<td>Stockbridge/ Pleasant @ Clark</td>
<td>211</td>
<td></td>
</tr>
<tr>
<td></td>
<td>62:2</td>
<td>Between Clark and Stockbridge</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>62:3</td>
<td>Between Wilder and Durfee</td>
<td>3</td>
<td>222</td>
</tr>
<tr>
<td>Lot 63</td>
<td>63:1</td>
<td>Pleasant/Stockbridge @ Skinner</td>
<td>92</td>
<td></td>
</tr>
<tr>
<td></td>
<td>63:2</td>
<td>West of Worcester D.C.</td>
<td>77</td>
<td></td>
</tr>
<tr>
<td></td>
<td>63:3</td>
<td>Old Cottages</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td></td>
<td>63:4</td>
<td>Between Morrill IV and Skinner</td>
<td>15</td>
<td></td>
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<tr>
<td></td>
<td>63:5</td>
<td>Between Wilder and Durfee</td>
<td>6</td>
<td>234</td>
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<tr>
<td></td>
<td></td>
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<tr>
<td><strong>Total permit lot spaces:</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>572</strong></td>
</tr>
</tbody>
</table>

**University Health Services (UHS) lot**  (Daily use of this lot was last analyzed some five years ago. At that time, between 150-200 cars were found to be parking in the UHS lot during an average day.)

<table>
<thead>
<tr>
<th>Lot Group</th>
<th>Approx. Location of Sublots</th>
<th>Subcounts:</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lot 62</td>
<td>Behind Health Center and Durfee</td>
<td>29</td>
<td></td>
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<td></td>
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<td><strong>29</strong></td>
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</table>

**Meter and short-term spaces:**

<table>
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<th>Lot Group</th>
<th>Approx. Location of Sublots</th>
<th>Subcounts:</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Franklin D.C. &amp; French Hall</td>
<td></td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Between New Africa and Wheeler</td>
<td></td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Next to Fernald</td>
<td></td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Along Infirmary Way at Franklin</td>
<td></td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Visitor spaces at Admissions</td>
<td></td>
<td>9</td>
<td></td>
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<tr>
<td>15 min. Health Center street parking</td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>15 minute at Morrill II</td>
<td></td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Other 15 min/ loading areas:</td>
<td></td>
<td>17</td>
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<tr>
<td><strong>Total meter and short-term spaces:</strong></td>
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<td><strong>142</strong></td>
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</table>

**Service spaces:**

<table>
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<th>Lot Group</th>
<th>Approx. Location of Sublots</th>
<th>Subcounts:</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>52:S</td>
<td>Lot 52 at University Apts.</td>
<td>22</td>
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</tr>
<tr>
<td>62:S</td>
<td>Behind Morrill complex</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>62:S</td>
<td>Between Morrill and Skinner</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>62:2</td>
<td>Shade Tree labs</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Other service spaces of less than 5 slots:</td>
<td></td>
<td></td>
<td><strong>18</strong></td>
</tr>
<tr>
<td><strong>Total service spaces:</strong></td>
<td></td>
<td></td>
<td><strong>84</strong></td>
</tr>
</tbody>
</table>
Handicapped spaces:  

Total handicapped spaces: 40

Motorcycle:

<table>
<thead>
<tr>
<th>Location</th>
<th>Spaces</th>
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</thead>
<tbody>
<tr>
<td>63:M East Experiment Station</td>
<td>25</td>
</tr>
<tr>
<td>46:1 Behind Gorman</td>
<td>4</td>
</tr>
</tbody>
</table>

Total motorcycle spaces: 29

Summary: Total existing East Area parking, by above categories:

<table>
<thead>
<tr>
<th>Category</th>
<th>Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>University permit</td>
<td>572</td>
</tr>
<tr>
<td>Health Services lot</td>
<td>29</td>
</tr>
<tr>
<td>Meter and 15 min</td>
<td>142</td>
</tr>
<tr>
<td>Service</td>
<td>84</td>
</tr>
<tr>
<td>Handicapped</td>
<td>40</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>29</td>
</tr>
</tbody>
</table>

Total: 896 spaces

Projected parking requirements for the East Area, calculated by building area:

Existing spaces: 896 spaces
Existing assignable square feet: 632,181 sq ft
Existing parking ratio: 1 space per 685 a.s.f
Costs for Relocating Utility Lines

In general, infrastructure installation costs consist of trenching, labor, material and equipment. Hence the costs of different projects vary according to different conditions. Some very general rules of thumb are:

- Try to avoid moving manholes, as they frequently mark the convergence of many lines that would in turn have to be moved. Steam and sanitary manholes are especially expensive to move.
- Since sewer, condensate and storm drainage lines are based on gravity, they may require deep trenching to uncover and re-install. They often run deeper than other kinds of lines and may be very expensive.
- Most lines (except for electricity) are placed 6-10 ft deep to prevent freezing. The depth of gas lines varies, however, since they require distributors to be placed close to the surface.
- The removal of older asbestos concrete pipes requires special handling, and is more expensive.

Characteristics of Utility Line Types

Each system of utility lines found in the East Area has its own set of characteristics and constraints. Some lines are fairly easy to move, while the relocation of others would involve great expenditures of time and money. Proposed changes to lines must take these specific factors into account.

1. GAS LINES. Depth varies. The gas lines on campus are owned by the Berkshire Gas Company, which has to be indemnified when lines are moved.
2. ELECTRICITY. Lines are conduits placed in reinforced concrete, in depths of 3-6 ft.
3. SEWER LINES. New lines now installed on campus are made from P.C., and their depth varies.
4. WATER LINES. Water pipes used on campus are made of ductile iron, and the depth of pipes is 6-10 ft.
5. STEAM LINES. Steam lines are either buried directly underground, or pass through a tunnel. Most tunnels on campus are walking tunnels, with an inner cross-section circumference of 6 - 8 ft and an outer section of 8 - 10 ft. The tunnel walls are made from reinforced concrete. Demolition of these tunnels, if required, is expensive ($180 per lf). Avoid disturbing tunnels when possible.
6. TELECOMMUNICATIONS. New telcom lines were installed 6 years ago, and there is no anticipated need for repairs. Relocation is often necessary when a new building is to be built.
7. STORM DRAINAGE. Water flow is based on gravity, so moving these lines may require very deep digging. Alterations of these lines may be expensive.
8. S.D.S. The supervisory data system is used for fire alarms, clocks, and bells.

Infrastructure Costs Calculation

There are 3 kinds of works:

1. **Installation.** Cost of installation consists of:
   a. Materials
   b. Labor
   c. Equipment

2. **Replacement.** Replacement costs the same as installation, with additional labor and equipment costs for digging out, removing and transporting old pipes.
3. **Moving.** When old pipes can be re-used, moving costs involve digging out pipes, backfilling the old trench, moving the pipes, digging the new line and installing the pipes. When the old pipes cannot be used, moving involves installing new pipes, and removing the old ones. Since most of the existing pipes in the Stockbridge Road area are old and worn, replacement or installation of entirely new lines is a more likely alternative.

Moving costs in this area thus mirror replacement costs, discussed above; and include both installing new pipes (materials + labor + equipment) and removing old pipes (labor + equipment).

The cost for a project can be expressed in a formula: cost of new materials + 2(labor + equipment costs).

**Sources:**
1. Maintenance Cost List.
3. Information from Telecommunications Systems Office

Below, some general cost estimates for moving different utility lines are summarized in table form. These figures are subject to inflation over time and should be regarded as general guidelines only.

<table>
<thead>
<tr>
<th>Utility</th>
<th>Price range to install</th>
<th>Price range to move</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>$30-100 /l.f.</td>
<td>$60-150 /l.f.</td>
</tr>
<tr>
<td>Water</td>
<td>$40-100/l.f.</td>
<td>$80-160 /l.f.</td>
</tr>
<tr>
<td>Sewer</td>
<td>$30-40 /l.f.</td>
<td>$60-70 /l.f.</td>
</tr>
<tr>
<td>Storm drainage</td>
<td>$30-70 /l.f.</td>
<td>$60-100 /l.f.</td>
</tr>
<tr>
<td>Electricity</td>
<td>$150-170 /l.f.</td>
<td>$200-250 /l.f.</td>
</tr>
<tr>
<td>Telecom</td>
<td>$150-170 /l.f.</td>
<td>$200-250 /l.f.</td>
</tr>
<tr>
<td>Steam</td>
<td>$100-250 /l.f.</td>
<td>$180-360 /l.f.</td>
</tr>
<tr>
<td>Steam tunnel</td>
<td>$800 /l.f.</td>
<td>$1000 /l.f. (building new + demolishing old)</td>
</tr>
<tr>
<td>S.D.S.</td>
<td>$100 /l.f.</td>
<td>$150 /l.f.</td>
</tr>
<tr>
<td>Electric manhole</td>
<td>$2100-3200 ea.</td>
<td>$2300-4400 ea.</td>
</tr>
<tr>
<td>Sewer manhole</td>
<td>$1600-2900 ea.</td>
<td>$1700-3000 ea.</td>
</tr>
<tr>
<td>Asbestos removal</td>
<td>$2-3 sq. ft.</td>
<td></td>
</tr>
</tbody>
</table>

To estimate compound costs of moving lines of different systems that are running together in one trench, add up the costs of moving for each quantity and type of line that needs to be moved. To estimate costs of moving pipes in steam tunnels, add up the cost of moving pipes +cost of building a new tunnel + cost of demolition of the tunnel.

**Sources:**
Prices for gas, water, sewer, storm drainage, electricity, steam lines, sewer and electricity manholes and removal of asbestos pipes are based on the Means Facilities Construction Cost Data 1995. Cost estimates for installing the telcom system came from Mr. Randy Sailer. Estimated cost for construction and demolition of concrete steam tunnels was given by Mr. Patrick Daly.
### Utility Projects Planned in the East Area

<table>
<thead>
<tr>
<th>Project</th>
<th>Estimated cost in dollars</th>
<th>Price per linear ft</th>
<th>Status</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  East Experiment Station to Worcester DC. Replace steam &amp; condensator. 8&quot;, 3&quot;, 3&quot; return. 350 ft.</td>
<td>425,000</td>
<td>1,214</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2  New steam line 3&quot; Manhole 38A to Franklin DC to Infirmary. 950 ft.</td>
<td>300,000</td>
<td>315</td>
<td></td>
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</tr>
<tr>
<td>3  Replace condensation line. Manholes 40 to 54. 1000 ft.</td>
<td>150,000</td>
<td>150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4  Replace steam &amp; return 10&quot;, 6&quot;, 6&quot;. Manholes 34-36.</td>
<td>400,000</td>
<td>1,538</td>
<td></td>
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</tr>
<tr>
<td>5  Replace steam &amp; return 16&quot;, 6&quot;, tunnel. Manholes 34-37.</td>
<td>800,000</td>
<td>800</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6  Replace steam &amp; return 8&quot;, 3&quot;, plus tunnel. Manholes 36-43, 300 ft.</td>
<td>360,000</td>
<td>1,200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7  Replace steam &amp; return 16&quot;, 6&quot; add 8&quot; plus tunnel. Manholes 37A-38,450 ft.</td>
<td>640,000</td>
<td>1,422</td>
<td>Requisitioned for 1996</td>
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</tr>
<tr>
<td>8  Replace steam &amp; return 16&quot;, 6&quot; add 8&quot; plus tunnel. Manholes 38A-38. 300 ft.</td>
<td>1,250,000</td>
<td>4,166</td>
<td>Requisitioned for 1996</td>
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</tr>
<tr>
<td>9  Replace steam &amp; return 12&quot;, 6&quot;, 4&quot;. Manholes 40-55.</td>
<td>800,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Replace steam &amp; return 12&quot;, 6&quot;. Manholes 40-58. 260 ft. in tunnel.</td>
<td>400,000</td>
<td>1,538</td>
<td></td>
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</tr>
<tr>
<td>11 Replace steam &amp; return 12&quot;, 4&quot;. Manholes 65-71. 250 ft plus tunnel.</td>
<td>380,000</td>
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</tr>
<tr>
<td>12 Replace steam &amp; return 12&quot;, 3&quot;. Manholes 87A-85,1,200 ft of tunnel.</td>
<td>1,800,000</td>
<td>1,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 Replace steam &amp; return 16&quot;, 8&quot;, 6&quot;. Manholes F-38 plus 26 A&amp;B. 950 ft plus tunnel.</td>
<td>1,800,000</td>
<td>1,894</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 Replace water &amp; sewer lines from Hills House down length of Stockbridge Road. 2200 ft.</td>
<td>600,000</td>
<td>272</td>
<td></td>
<td>9.97</td>
</tr>
<tr>
<td>15 Replace French greenhouses</td>
<td>200,000</td>
<td></td>
<td>Requisitioned for 1996</td>
<td></td>
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</table>
## List of Stakeholders in the East Area

<table>
<thead>
<tr>
<th>Department</th>
<th>Department Head/Contact</th>
<th>Office</th>
<th>Telephone</th>
<th>Fax</th>
<th>E-mail Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brooks/ Residential</td>
<td>Michael Gilbert</td>
<td>Director, Housing</td>
<td>545-9160</td>
<td>----</td>
<td>gilbertm@housing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Services</td>
<td></td>
<td></td>
<td>umass.edu</td>
</tr>
<tr>
<td>Art</td>
<td>Hanlyn Davies</td>
<td>Chairperson</td>
<td>545-1902</td>
<td>545-3929</td>
<td>davies@art.</td>
</tr>
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<td></td>
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<td>umass.edu</td>
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<tr>
<td>Plant Pathology</td>
<td>Mark S. Mount</td>
<td>Department Head</td>
<td>545-2280</td>
<td>545-2532</td>
<td>msmount@pltpath.</td>
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<td></td>
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<tr>
<td>Biology</td>
<td>M.S. Kaulenas</td>
<td>Department Chair</td>
<td>545-2602</td>
<td>545-3243</td>
<td>stevek@bio.</td>
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</tr>
<tr>
<td>Food Services</td>
<td>Richard Rossi</td>
<td>Director</td>
<td>545-2472</td>
<td>----</td>
<td>r <a href="mailto:Rossi@auxwor.aux">Rossi@auxwor.aux</a>.</td>
</tr>
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<td></td>
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<td>umass.edu</td>
</tr>
<tr>
<td>Plant/Soil Sciences</td>
<td>William Bramlage</td>
<td>Department Head</td>
<td>545-5225</td>
<td>545-3075</td>
<td>bramlage@pssci.</td>
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<tr>
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<td>umass.edu</td>
</tr>
<tr>
<td>Geosciences</td>
<td>Ray Bradley</td>
<td>Department Head</td>
<td>545-2120</td>
<td>545-1200</td>
<td>rbradley@climate1.</td>
</tr>
<tr>
<td></td>
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<td>geo.umass.edu</td>
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<tr>
<td>Microbiology</td>
<td>Frank Cannon</td>
<td>Department Head</td>
<td>545-2051</td>
<td>545-1578</td>
<td>fcannon@biotech.</td>
</tr>
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<td>umass.edu</td>
</tr>
<tr>
<td>Public Health</td>
<td>Stephen H. Gehlbach</td>
<td>Dean</td>
<td>545-6883</td>
<td>545-1264</td>
<td>gehlbach@schoolph.</td>
</tr>
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<td>umass.edu</td>
</tr>
<tr>
<td>Animal Care</td>
<td>Margaret Delano</td>
<td>Director</td>
<td>545-0668</td>
<td>----</td>
<td>mldelano@resgs.</td>
</tr>
<tr>
<td></td>
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<td>umass.edu</td>
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<tr>
<td>Nursing</td>
<td>Melanie Dreher</td>
<td>Dean</td>
<td>545-5092</td>
<td>545-0086</td>
<td>dreher@nursing.</td>
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<tr>
<td>Env. Health/Safety</td>
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<td>Health Services</td>
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<tr>
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<td>545-5821</td>
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<td>ewc@stuaf.</td>
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<tr>
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<td>Faculty Club</td>
<td>Dennis Scott</td>
<td>Manager</td>
<td>545-2551</td>
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<td>Parking</td>
<td>Lynn Braddock</td>
<td>Manager</td>
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<td>Robert Brooks</td>
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<td>545-3205</td>
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<td>Faculty Senate</td>
<td>John Bracey</td>
<td>Secretary</td>
<td>545-5160</td>
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<td>Auxiliary Services</td>
<td>Ashoke Ganguli</td>
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<td>Child Care Office</td>
<td>MaryAnn Gallagher</td>
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<td>545-2232</td>
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<td>Chancellors Office</td>
<td>David Scott</td>
<td>Chancellor</td>
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