A. Overview

William Paterson University in Wayne, New Jersey has engaged its campus community in a comprehensive Campus Facilities Master Plan process. The year-long planning process spanned the summer of 2002 to the summer of 2003.

The University concluded that having already grown beyond the previously planned target and with the addition of the Valley Road property, William Paterson University had become a multi-site institution and the growth horizons had changed. To embark upon the plan there was a need for a computerized database of University facilities.

The WPU Facilities Master Plan (July 2003) provides a strategic direction for physical development and growth. The two volume report and electronic data base sets forth a strategic vision for phased physical development and provides WPU with a decision making tool to assist in capital planning at macro and micro levels.

B. Planning Process

The campus master planning process consisted of three major phases: 1) Assessment of Existing Facilities and Space Needs, 2) Concept Development, and 3) Implementation Planning. Dialog was a key component creating a critical link between the Assessment and Concept Development Phases. The discussion period bridged the user interviews with the climax of an on campus design 'charrette' that engaged the entire campus community and recognized emerging master plan concepts.

Volume I – Facilities Assessment

Volume I of this report contains the 'facilities assessment' portion of the report. There are four primary objectives identified for the assessment of existing facilities and space needs: 1) updating existing facility documentation, 2) identifying and prioritizing existing deferred maintenance needs and associated costs, 3) providing a planning tool to identify opportunities & constraints, and 4) integrating facility and program needs.

Volume II – Concept/Implementation Plan

Volume II includes three elements: 1) An assessment of the current academic and non-academic space programming needs and an analysis of projected growth and subsequent space need for each category of University function. 2) A comprehensive vision for future improvements and development of the campus for the short and long term. 3) A flexible implementation plan that considers the financial ramifications of each proposed improvement and/or development in conjunction with the programmatic needs of the University, and allows the University administration to effectively move forward with their Master Plan as determined by changes in available funding, priority, and/or growth rate.

C. Facilities Assessment Process

C.1 Site Assessment

The site assessment involved the assessment of the regional context and land use, environmental factors, campus zones, open space, spatial qualities, vehicular circulation, parking, pedestrian circulation and athletics. A composite analysis was developed to summarize key components of the assessment and identify opportunities and constraints for future campus development. Additionally, the site infrastructure was analyzed to identify deferred maintenance needs. Costs estimates were then developed for infrastructure projects categorized by roads, parking, walkways, curbs, stairways, ADA compliance, lighting and outdoor athletics/recreation areas.

Campus Environs

The University is located within three local municipalities, Wayne Township, the Borough of North Haledon, and the Borough of Haledon. The majority of the University's property exists in Wayne Township. The total university landholdings are approximately 485 acres with 370 acres at the 'main campus'. The area surrounding the University provides varying densities of suburban residential development, convenience to retail shopping centers, museums, office and research parks, schools, libraries, natural open space and recreation facilities.

Environmental Factors

Environmental factors including soils, topography, wetlands, and scarce suitable recreation open space presents potential constraints for future development on campus. The result is a campus with significant land resources but precious few sites suitable for additional development

Potential Future Land Acquisition

William Paterson University will continue to strategically acquire additional land adjacent to the main campus to meet future land use demands.

Campus Open Space

The campus has a variety of open space categories that are an integral part of the campus framework. The forested open spaces are considered a valued asset to the University and continually need to be evaluated carefully prior to future development.

Spatial Qualities

The assessment of spatial qualities involves the identification of elements that shape the visual character of the campus. These elements include notable building character, building defined space, formal open space, forested open space, primary and secondary visual axes, positive and negative edge conditions and significant campus views.

Vehicular Circulation

The assessment includes assessment of vehicular circulation on state and public roads, primary and secondary campus roads, as well as primary and secondary entries, traffic signals patterns, vehicular conflict areas, and campus security control check points.

Parking

There are 3,876 parking spaces on the Main Campus, 97 parking spaces at Power Arts Building and 683 parking spaces at Valley Road for a combined total of 4,656 spaces. This is deemed sufficient quantity for all but peak registration periods. However, the current allocation and location of parking areas are not convenient to many users. A campus wide parking management plan is recommended.

C.2 Building Assessment

Combining campuses, the University owns a total of 41 structures containing 1.72 million gsf, of which almost one quarter are student residential in nature. The Project Team documented and assessed approximately 1 million gross square feet (gsf,), contained in the primary buildings and extrapolated the data to cover the remaining buildings. The facilities assessment inventoried the existing mechanical, electrical, and plumbing systems, building infrastructure, ADA compliance, deferred maintenance concerns, and other deficiencies.

Assessment Scope

The assessment identified deferred maintenance priorities, building utility capacities and conditions, and considered both expected life spans and operational costs. Each proposed project was then categorized in relation to its importance, impact, and scope, and assigned an estimated cost. As an integral component of the Campus Master Plan, an assessment of the University's facilities financial exposure was undertaken. This assessment had three primary objectives: 1) identify projects, or areas of need, on a relative priority basis, 2) provide an operational tool to assist in the allocation of finite operating resources and enhanced planning for future capital requirements, and 3) integrate the facilities needs with programmatic needs to develop an affordable, achievable, realistic strategy for the phased reduction of campus-wide deficiencies.

Aging Buildings

Over 69 percent of the existing campus buildings are comprised of structures 25 to 50 years of age. The significant number of older buildings indicates that resources will be necessary to prevent deterioration of these assets and to upgrade obsolete mechanical, electrical, and plumbing systems, which have been extended beyond their useful lives.

C.3 Facilities Renewal Summary Costs

William Paterson University's accumulated campus facilities maintenance, general repair and replacement needs for existing site and buildings is approximately $63.0 million of estimated construction 'hard' cost, or the cost of construction labor, materials & general conditions. A little over three quarters, of $48.8 million, of this amount is related to buildings with site renewal projects accounting for $14.1 million. Approximately $10.7 million of the total hard costs, or 17 percent, is designated for student housing improvements.

To the hard costs are added an additional 25 percent, or approximately $15.7 million to cover estimated related project 'soft costs'. The resultant 'project costs' of $ 78.7 million related to facilities renewal comprises more than 1,100 specific renewal projects. Of the project cost, $21.0 million, or 27 percent, is designated as Priority 1 or 2A items in need of attention within the next five years.[1]

Table 1.1 – Facilities Renewal Estimated 'Hard & Soft Costs' by Priority

Project Priority	'Hard Costs'	'Project Costs'	% of Total
1	$ 6.342 M	$ 7.928	10 %
2A	$ 10.497 M	$ 13.121	17 %
2B	$ 35.673 M	$ 44.591	56 %
3	$ 10.455 M	$ 13.069	17 %
Total	**$ 62.967 M**	**$ 78.709**	**100%**

The proportion of high priority maintenance needs to the total inventory of needs demonstrates a major facilities renewal & deferred maintenance accumulation. Maintenance needs identified within heating, ventilation, cooling and other mechanical systems represent the largest area of total need at $15.5 million 'hard costs', of which $15.1 million is designated for high priority items. An additional $23.7 million hard costs have been identified by the University's formulas to estimate similar costs deficiencies noted in six additional buildings recently surveyed. In addition, WPU has designated $500,000 for asbestos abatement items identified in an earlier study.

[1] Priority 1 items refer to life safety, code and statutory compliance. Priority 2 items are asset preservation issues which, if not addressed, could cause significant damage to other infrastructure components. Due to the recently announced decrease of statewide higher education capital funding, Priority 2 site and building improvement projects are further divided into '2A' and '2B' based on relative priorities. Priority 2A are recommended to be addressed within 1-3 years. Priority 2B items should be addressed within 3-5 years. Priority 3 items related to projects to upgrade existing components after reaching their normal life expectancy, or in cases of extensive wear and tear.

Link to University Mission

Evaluated in terms of the University's mission, approximately 73 percent of the total $62.9 million hard costs is allocated for asset preservation, approximately 17 percent is for recommended improvements, and 10 percent is for life safety and code issues

Benchmarking Facilities Renewal Costs

William Paterson University needs to expend approximately $28.51 per gsf campus-wide for priority 1-3 building renewal construction 'hard costs'.[2] This equates to approximately $10/gsf expenditure on Priority 1 & 2A renewal projects over the next five years. The data places the University facilities renewal $/gsf in the mid range of some twenty higher education institutions previously assessed in a similar manner.

Facilities Maintenance Budget

Capital allocations to address the accumulation of facilities renewal needs must be balanced with annual maintenance allocations to determine any potential maintenance funding gaps. An review of the University's Operations and Maintenance fiscal year 2003 budget indicates a budget around $4.5 million allocated for campus-wide 'maintenance' excluding custodial services. Of this, approximately 85 percent, or $ 3.8 million, is allocated to building versus site maintenance.

Deferred Maintenance Gap

This roughly translates to $ 2.17 per gsf for annual maintenance spread out over the entire 1.748 million gsf owned by WPU. This can benchmark against a typical range for an annual institutional maintenance budget of between 3-4 percent of the building asset value, excluding the land value. Assuming a typical institutional asset value of $125/gsf and a 3.5 percent of value (1.748 million/gsf x $125/gsf x.035) this translates to a benchmark of $ 7.65 million for the University's annual building maintenance budget. At the University's current rate of $ 3.8 million annual building maintenance there is deferred maintenance gap of approximately $ 2.85 million or $2.20/gsf.

D. Space Program

William Paterson University, similar to other colleges and universities today, faces the challenge of how best to budget and plan for growth and improvement. To do this a Master Plan must meet three main objectives with regard to space programming: 1) Assess the existing space program; including the space resources currently assigned to academic and non-academic functions, to identify current space shortages and surpluses. 2) Determine how to most efficiently utilize the space resources which the University currently possesses based on projected needs and peer benchmarking; and 3) Provide an

[2] Historically, William Paterson 'project costs' represents approximately 88-95 percent of the' final cost' with the difference related to potential WPU project administration, relocation, temporary storage and overtime costs depending of the nature, timeframe and complexity of the project.

effective tool for forecasting where they will most likely need to apply funding in the future for program based space needs.

Current Space Needs

The space program is based on benchmarking the University against other comparable institutions within the region and where applicable a detailed evaluation based on the Student Full Time Equivalency Student (FTE's), staffing, and other relevant data. The evaluation compares the current inventory inclusive of Valley Road and the new Student Center addition against the estimated need for Fall 2001. It was determined that the University currently maintains a ratio of approximately 38.6sf of academic space per FTE's. This is lower than other similar universities similar to William Paterson, and closer in comparison to Community Colleges.

One critical reason this master planning effort was deemed necessary was the need to assess how the recent acquisition and activation of the campus at Valley Road would affect the University growth in the future. Assessment of the existing space program reveals that at present there is a deficit of almost 6,000 net assignable square feet (nasf) of classroom space on the Main Campus today.

Projected Space Needs

In addition to the base assessment for Fall 2001, two projections are made. The first is for Fall 2006, totals 8,855 Student FTE's and reflects the University's overall enrollment goals. Overall, by projecting FTE's growth in three of the five University Colleges, and the subsequent space needs, the deficit of academic space is projected to reach 65,000nasf by 2006.

The second projection for Fall 2011 reflects the University's goal to expand its residential population. The result will be a larger percentage of full-time students resulting in a constant headcount, but with an underlying growth in Student FTE's. The target for the second projection is 9,681 Student FTE's.

To summarize the programmatic space program assessment at William Paterson, the evaluation needs to be broken into short- and long-term efforts.

Short-Term

Short-term, the University needs to make better use of the 1600 Valley Road Campus. Concurrent with this effort the University needs to address the classroom space on the Main Campus. This component of the inventory requires re-invention resulting in a new mix of sizes and the integration of technology that has already been implemented at the 1600 Valley Road Campus.

Along with the classroom issues, the University will require substantive investments in both academic and support space. Specific areas of focus for support functions are

Assembly Space, the Library, Athletic & Physical Education including Recreation, and Technology.

Long-Term
In the future the University will have to expand its non-residential facilities by an additional 200,000 NASF or 330,000 gsf of new buildings. This new space is required to support the student FTE expansion resulting from a higher percentage of residential students that is projected.

E. Concept Development Process

A comprehensive concept plan provides the University with a framework to facilitate future growth. On-going and potential new projects are identified and sequenced into phases.

E.1 Short & Mid-Term Concepts

Phases 1-5 represent Short / Mid-Term planning, and Phase 6 and beyond represent the long-term plan. This type of phased planning allows the University flexibility to move forward with the Master Plan at a rate dependant on available funding and enrollment growth, without setting an unrealistic or arbitrary timeline. The majority of the concepts concentrate on the Main Campus, which represents the majority of the Universities resources and has been identified as the most logical location for growth in keeping with the University's stated objectives.

Feasibility Studies
The Master Plan identified some project concepts requiring upfront additional efforts to further refine their parameters and budgets. Conceptual and feasibility study initiatives called for include the following:

- Landscape Master Plan to develop landscape vocabulary and design guidelines including a phased main campus site improvement plan.
- New 1000-bed student residence area plan, program & type of phased development in master plan designated residential expansion area.
- Athletic field study to confirm existing conditions and determine optimum field types, configuration, and location.
- Alternative site planning and program study to identify feasibility of relocation and potential site for Physical Plant operations.
- Focused Library program study of first floor service areas to identify short-term expansion and consolidate opportunities within the existing building.
- Coach House structural and codes analysis to ascertain appropriate disposition of the structure given its history and current condition.

Major Site Concepts

The recommended site projects include the following:

- Completion of the planned College Road Connector Loop Road, including relocation or planting of approximately 300 trees in compliance with state environmental regulations.
- Development of a pedestrian spine between Morrison Hall and the east side of Wightman Gym.
- Implementation of interior and exterior signage standards to improve campus way-finding.
- Improvement of campus pedestrian and vehicular circulation through the development of drop-offs associated with primary campus penetrations and elimination of pedestrian vehicular conflicts.
- Improvement of the campus landscape framework derived from the Campus Landscape Plan study.

Major Building Concepts

The Implementation Plan represents a clear commitment to improving the facilities that William Paterson has to offer to the anticipated growing enrollment. Some of the most significant changes proposed in the Plan involve the relocation of some departments and programs to more efficiently use existing University buildings and improve program function. These moves involve space in Raubinger Hall, the Science Building, College Hall, Hunziker Wing, Morrison Hall, Student Center, Admissions, Facilities Building, and the Coach House.

- In several cases, relocating program elements involves the renovation and/or expansion of space. The most substantial building renovation/expansion involves accommodating the continued growth of the campus population.
- Completion of the $40 million renovation/addition to Wayne Hall and the Student Center,
- Renovation and expansion of the existing Recreation Center.
- Construction of Ph1 & Ph2 consisting of 600 new beds of on-campus student housing as part of a three phase 1000 bed student housing development. This facility is recommended to accommodate projected growth while maintaining a good quality of life for the Main Campus population. The project sequencing will allow phased renovation of the existing Towers Complex and increased student activity spaces.
- New 45,000 GSF Science Hall addition, and phased renovation of the existing Science Hall.
- Shea Center for the Performing Arts Phase 1 work including addition/renovation to provide approximately 107,600 gsf to accommodate the Music Program consolidation from Hunziker Hall and expansion.

E.2 Long-Term Concepts

Major Concepts

Longer-Term building projects are in several cases continuations of the earlier projects. The recommended long-term projects include the following:

- Phase 2, 54,000 gsf addition to the Shea Center for the Performing Arts to accommodate the community performing events as envisioned in the recently completed Shea Center study.[3]
- Phase 2 of the Student Housing development consisting of 400 beds and related site work.
- "Campus Gateways" associated with arrival areas, and continued improvement of the aesthetics and safety of pedestrian circulation on campus.
- Subsequent to the study of the existing Cheng Library, future improvement and possible expansion of the library facility.
- Reorganization and enhancement of the athletic/recreation fields, including possible synthetic turf field installations.
- Modifications to the main campus parking and circulation patterns such as the extension of the loop road along Lot 5, reconfigurations of Lots 1, Lot 4 and the visitor's parking lot.

Major Future Development Zones

Additional Long-Term concepts involve the identification and creation of Development and Redevelopment Zones on the Main Campus.

- The primary redevelopment zone is the proposed creation of a parking structure in the area that would result from the relocation of the existing Physical Plant Operations.
- A secondary redevelopment zone would be the Coach House and Wightman Gym area, terminating at a significant approach from the proposed parking structure.
- A primary development zone is located just to the south of Cheng Library and the Atrium celebrating the Gate 4 entry and creating valuable formal green space for the University.

F. Implementation Plan

The Implementation Plan provides the University with a flexible planning tool by which the University can address the deferred maintenance issues documented in Volume I, as well as integrate with the Master Plan concepts expressed in Volume II. The primary objectives of the Implementation Plan are: 1) identify projects on a priority basis, 2) provide an operational tool to assist in the allocation of finite operating resources and for enhanced planning related to future capital requirements, and 3) integrate the facilities requirements

[3] 'Shea Center Program Study' prepared by Pasanella + Klein Stolzman + Berg Architects, P.C., 2003.

with programmatic needs to develop an affordable, achievable and realistic strategy for the phased reduction of campus-wide deficiencies.

Phases 1-5 projects are shown in the Short / Mid-Term Implementation Plan. These include campus site projects, building space redistribution, building additions & renovations, and identification of further feasibility studies. In several cases, project proximity, phasing and purpose link the identified project sequences.

The Implementation Plan identifies an order of magnitude of $325M in total project costs based on 2003 dollars ($2003). Roughly $233.5M falls in the Short-Mid-Term Plan (Phases 1-5) and approximately $95.8M is identified in the Long Term Plan (Phase 6+). An assumed calculated rate of inflation is also provided to allow interpretation of the Implementation Plan budget in long term planning.

Project Tracks

All projects addressed in Section VII are grouped into project 'tracks' that identify the inter-relationships of associated work to facilitate efficient phasing and funding. Nine tracks defined by the primary project purpose are as follows:

Table 2 – Master Plan Project Tracks

Project Tracks	% of Total	2003 $ Millions
A - Pre-Student Center Space Distribution	2.6%	$8.6
B - Student Center	13.2%	$42.8
C - Science Building	14.1%	$46.0
D - Music + Performing Arts	25.6%	$83.3
E -Athletic / Recreation	6.0%	$19.5
F - Student Residential	35.0%	$113.7
G - Facilities Priority 1 & 2A	2.9%	$9.5
H - Campus Site Improvements	0.4%	$1.5
I - Conceptual / Feasibility Studies	0.1%	$0.2
Grand Total	**100.0%**	**$ 325.01**

Project Types

The type of work proposed according to the New Jersey's stipulated Project Categories also classifies projects. The following table is a summary of projects by area of work and cost. All costs are 2003 dollars and not adjusted for inflation

Table 3 – Master Plan Project Types

Work	% of Total	2003 $ Millions
New Building Construction Projects	36.9%	$119.93
New Site Construction Projects	0.0%	$0.05
Infrastructure Improvement Projects	8.5%	$27.52
Major Renovation Projects	30.8%	$100.26
Renovation Projects	17.6%	$57.17
Minor Renovation Projects	5.9%	$19.22
Relocation/Moving Projects	0.1%	$0.33
Conceptual/Feasibility Studies	0.2%	$0.54
Grand Total	**100.0%**	**$325.01**

Projects Phasing

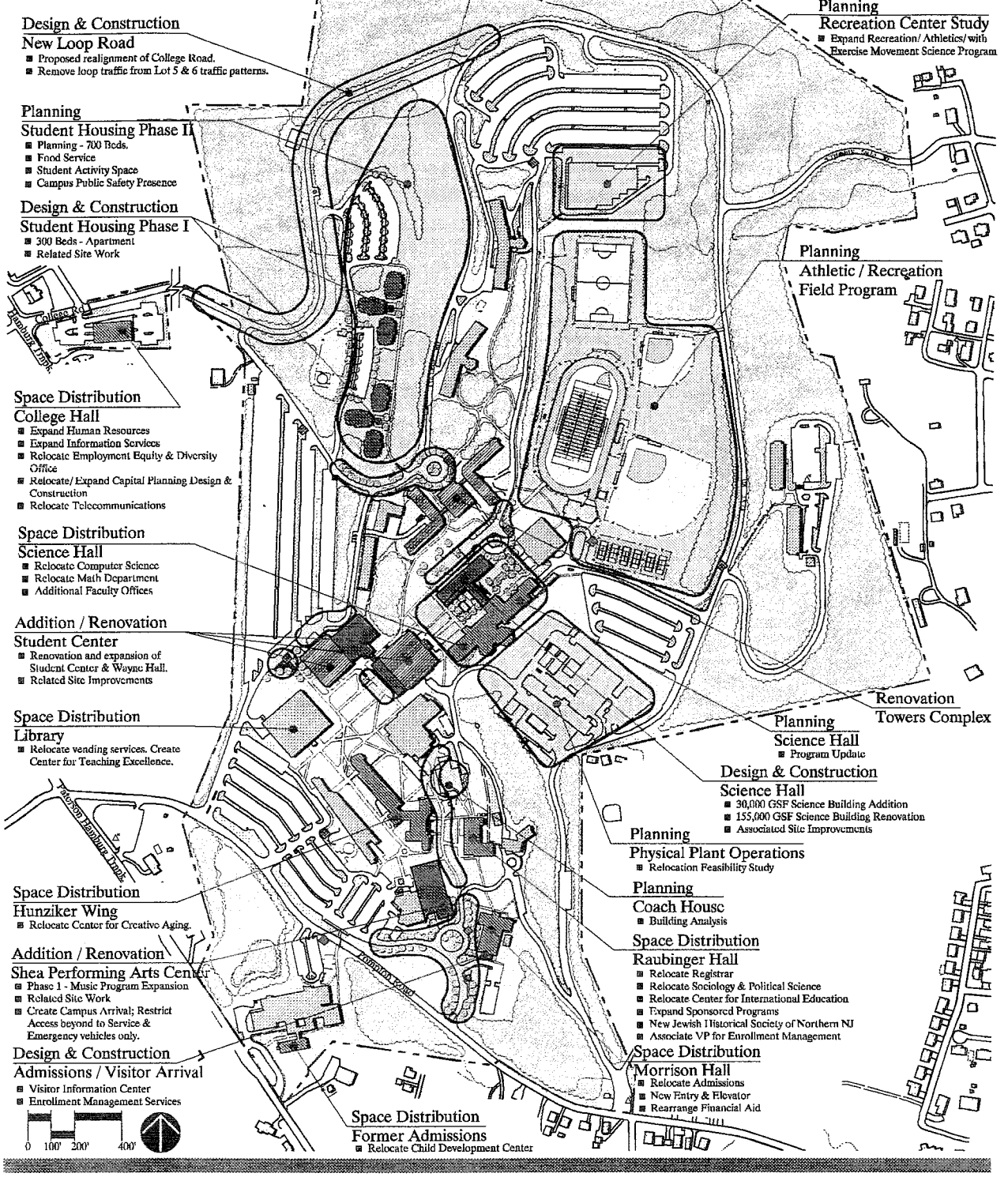
Projects are scheduled over sequential phases (Ph) that ideally represent a typical fiscal year. However, depending on available resources a phase may in reality be multiple years in duration thereby expanding the Short + Mid-Term time span. Inflation factor of 3 percent per year, or phase, is factored into the $2003 base dollars to provide projected inflated dollars per phase.

Table 4 – Master Plan Projects by Phase

		Short + Mid-Term					Long Term
All Projects	**2003 $ Millions**	**Ph 1**	**Ph 2**	**Ph 3**	**Ph 4**	**Ph 5**	**Ph 6**
Grand Totals 2003 $	$325.01	$11.79	$53.83	$29.72	$41.38	$96.75	$95.89
Estimated Inflation @ 3 % Annual Increase		$12.15	$57.06	$32.48	$46.57	$112.16	$114.50
Short + Mid-Term Escalated Totals				**$260.42**			

Updating the Implementation Plan

It is advisable to annually, or bi-annually, update the Implementation Plan to ensure accurate depiction of the University's current needs, priorities and potential resources to address them. The University's Capital Planning Design & Construction department, possibly with periodic outside assistance, has the opportunity to update and maintain the space planning and project completion data base on an on-going basis. If so maintained, the Implementation Plan's underlying database will remain a useful multi-purpose planning tool providing up-to-date information on an on-going basis. In doing so, the University may well avoid the once every 5-10 years need to expend significant cost and effort to update their Campus Facilities Master Plan.



KEY

- Campus Building
- Building Renovation
- Building Addition
- Space Distribution
- Planning Study
- Site Improvement
- Campus Property
- Existing Road
- Existing Water
- Existing Vegetation
- Landscape Enhancement
- Bus Stop

Figure 6.1

Short / Mid-Term Master Plan
2003-2008
MAIN CAMPUS

FACILITIES MASTER PLAN
JULY 2003

THE SARATOGA ASSOCIATES
LANDSCAPE ARCHITECTS, ARCHITECTS, ENGINEERS AND PLANNERS, P.C.
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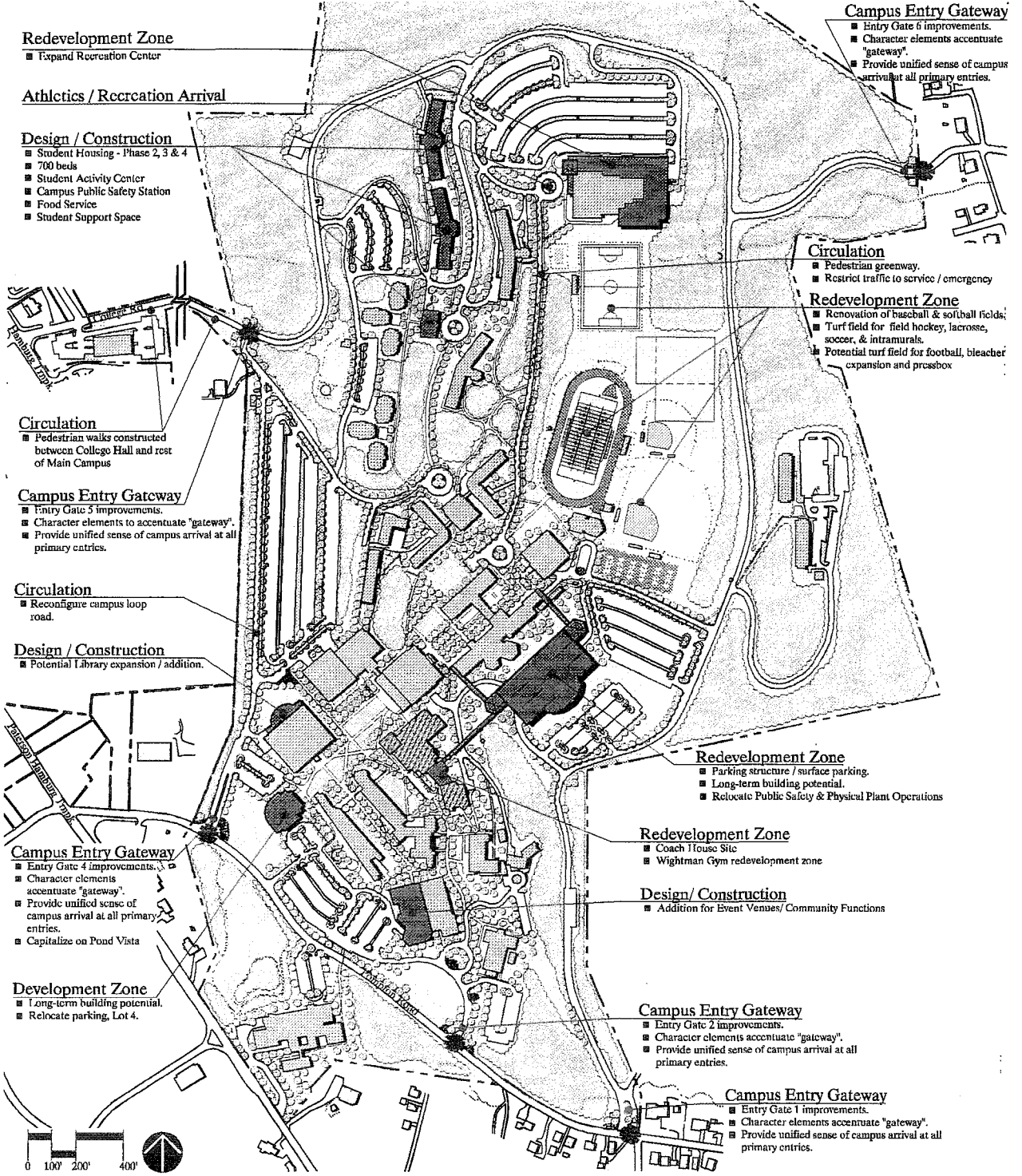

KEY

- Campus Building
- Potential Building
- Potential Building Redevelopment
- Campus Property
- Existing Roads/Walks
- Existing Vegetation
- Existing Water

Figure 6.2

Long-Term Master Plan 2009-2023 MAIN CAMPUS

FACILITIES MASTER PLAN
JULY 2003

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