I—EXECUTIVE SUMMARY

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February 2007
SECTION I EXECUTIVE SUMMARY

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INTRODUCTION

CONTEXT

Wellesley College has a campus that today reflects major investments made, during more than a century, in grand and diverse architecture and in an historically significant landscape. The campus is exceptionally beautiful and it is a significant component of the Wellesley College student experience.

However, Wellesley’s capital assets, like those of many of its peers, also exhibit qualitative deficiencies, resulting from a consistent pattern of relative underinvestment in renewal. Some buildings with exterior envelope deterioration will be increasingly at risk of sustaining damage. Numerous major building systems now require, or soon will require, replacement. Many interior spaces are tired or functionally obsolete.

GOALS

At the outset of the present planning effort, Wellesley had a Master Plan (landscape), building condition studies, various other data on its facilities, and a current understanding of its next capital priorities.

The College wished to create a Comprehensive Facilities Plan—a statement of all capital needs presently identifiable in buildings and infrastructure—that would enable Wellesley to plan and execute an orderly capital improvement plan over the period of a decade or more. A second, and perhaps more important, goal was to establish a better base of information that could be maintained permanently and that would inform and facilitate the College leadership’s discussions of priorities.

OUTCOMES

Accordingly, outcomes of this planning activity provide the College:

- A current snapshot of needs with estimated costs
- A policy framework and analytical tools and processes for periodic updates of needs assessments
- A database tool that can be maintained.

This work materially advances Wellesley’s internal capacities for stewardship of its extensive physical plant assets, but it is useful to understand what these outcomes do and do not provide:

- This assessment was comprehensive because it incorporated both quantitative and qualitative aspects of building needs and a full evaluation of infrastructure needs.
- Projects are defined to both correct accumulated deficiencies and to prepare facilities to meet anticipated future needs. By this perspective—looking to the future—this work differs materially from typical asset preservation studies. Along with elements to correct accumulated condition deficiencies, projects are defined to include work to upgrade, modernize, and, in some cases, to change use of space.
- Although the concept was to anticipate future needs, the work did not include detailed programming studies. Thus, for some buildings, an estimated allowance is provided for programmatic or functional changes that Wellesley will define in the future.
- Total Project Cost estimates are not intended to be sufficiently accurate or detailed to permit Wellesley to execute projects based on them. This would not be helpful, and is not necessary, for a series of projects that may be executed during more than a decade. Rather, costs are order-of-magnitude estimates, expressed in 2007 dollars, and intended to support College leadership in planning and prioritization.
- Needs are not expressed as a ranked list and the outcome is not a cookbook. Nor is the total estimate figure intended to be an invoice. Rather, the intent is that Wellesley leadership will use these data in continuous capital investment decision processes.
THE STUDY

WORK PROGRAM

In brief, after organization of the project, early work focused dually on establishment of principles and tools for capital planning and on organization of existing facilities data into the first database format. Following these preparation tasks, the needs assessments—quantitative and qualitative—were undertaken. Then, important final tasks—capital project development, cost estimating, and prioritization—were completed and recommendations contained herein were developed. In parallel, with B.V.H. Integrated Services, Inc., Wellesley developed infrastructure needs and cost estimates.

Major task elements of the EKA-HHK-SMMA Work Program were as follows:

- **Task 1—Project Initiation.** Initial activities to organize and launch the project, including establishment of contractual details, initial meetings and presentations, organization of project assignments, schedule, and communications plan.

- **Task 2—Strategic Facilities Planning Principles.** Establishment of policy and analytical framework principles for capital planning, including details of tools for the Space Capacity Analysis; Facility Condition and Quality Evaluation (criteria); and Project Prioritization methodologies.

- **Task 3—Consolidation of Existing Capital Projects Data and Preparation for Updates and New Assessments.** Review and consolidation of available facilities data; initial preparation of a new database format; Space Inventory coding; development of Current Replacement Values; and planning for field work (qualitative evaluations of buildings).

- **Task 4—Needs Assessments.** Space Capacity Analysis, including acquisition of demand and use data/metrics; verification of space coding; and special analyses of Science Center space. Facility Condition and Quality Evaluation, including field evaluations of building condition and quality; building user group interviews; special review of selected roofs/exteriors; and ongoing database development.

- **Task 5—Capital Project Plan Development and Initial Prioritization.** Formulation of projects; cost estimates; calculation of FCQI (relative urgency) indices; and initial prioritization sorts.

- **Final Report and Database.** Preparation of the Capital Projects Plan Database for transmission to Wellesley and preparation of this Final Report.

SCHEDULE

Wellesley College and its consultant team undertook this work during a 12-month period from March 2006 through February 2007. Figure 1 summarizes the Work Program and Schedule.

**Figure 1—Summary of Major Tasks and Schedule**

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<th>Task 1—Project Initiation</th>
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PARTICIPANTS

A Project Team chaired by Assistant Vice President Peter Zuraw led this effort. Additional Project Team members included Patricia Byrne, Michael Dawley, Traci Robie, and Patrick Willoughby. Ms. Byrne also chaired an Oversight Committee, comprised of College leadership representatives, which provided guidance and review. Review sessions with Wellesley’s Project Team and Oversight Committee occurred throughout performance of the Work Program.

In addition, in a series of interviews, many Wellesley faculty and staff members provided input and information—primarily about functionality needs.

The consultant team included Eva Klein & Associates (EKA), Harvey H. Kaiser Associates (HHK), and Symmes Maini McKee & Associates (SMMA). Dr. Harvey H. Kaiser was Project Director; Ms. Eva Klein was Project Manager; and Mr. Mark Zarrillo led the technical team.

Exhibit 1 provides a list of College participants and consultants.

DELIVERABLES

Deliverables included interim work papers, spreadsheet reports, and database materials, organized for this Final Report into four sections:

- **Section I—Executive Summary.** Brief summary of study outcomes and recommendations relating to next steps in further elaboration and ongoing implementation of the Plan
- **Section II—Space Capacity.** Findings of the Space Capacity Analysis with supporting exhibits of data on space coding, a Space Inventory summary, details of Office space, and use/demand data used
- **Section III—Methods.** Update of an earlier work paper that provides methods and tools for the Space Capacity Analysis, Facility Condition and Quality Assessment, and Project Prioritization, with exhibits
- **Section IV—Building and Capital Project Data.** Compilation of selected information about buildings and capital projects, some of which are printed reports from the Capital Projects Plan Database and some of which are ancillary materials. Materials included in Section IV are:
  - Building List
  - Gross Square Feet
  - Current Replacement Values
  - Capital Projects Summary by Direct Costs (and Type of Work Required)
  - Capital Projects Summary by Total Project Costs (with CRVs and FCQIs)
- **Capital Projects Plan Database.** Detailed facility evaluations, project statements, cost estimates and initial prioritization sorts are provided electronically, and not part of this printed report. Reports generated from the Database are:
  - Asset Preservation Report
  - Building Dossier Template
  - Building Profiles
  - Capital Projects Details Summary
  - Capital Projects Prioritization Sorts
  - Quality Evaluation (by Building)
  - Roof and Shell Evaluation
  - Space Inventory (details by Room)

To facilitate interpretation of this report, Exhibit 2 provides abbreviations and acronyms used in report deliverables.
BASELINE DATA, POLICY, AND TOOLS

BUILDINGS INCLUDED IN THE STUDY

Of 105 buildings, 60 were included in the qualitative evaluation. Certain others were included or listed in other sub-elements of the study. Certain new buildings, like the Wang Campus Center, certain auxiliaries, like the Davis Parking Garage, and many small structures that serve as faculty housing were excluded from the evaluation work. A list of buildings, with details about which are included in various study elements, is provided in Section IV.1

GROSS AREA

When some anomalies were found in gross square feet (GSF) of buildings as shown in Wellesley’s earlier records, the consultants were asked to update these data for buildings included in the study and some others. New measured GSF figures for those Wellesley buildings are provided in Section IV. The revised measured total is slightly more than 2.5 million GSF, of which about 2.2 million GSF of space was studied.

CURRENT REPLACEMENT VALUES

The prioritization process involves, among other things, calculation of a Facility Condition and Quality Index (FCQI), as defined in Section III. The denominator for this index is Current Replacement Value (CRV) of a facility. Thus, early work included creation of a new set of estimated CRVs for each Wellesley building studied. For the buildings included in the study, total CRV is about $1.27 billion. CRVs are provided, building by building, in Section IV.

Even without certain additional buildings not included in the above figure, it is apparent that the built assets of Wellesley are of a total value that approaches that of the College’s endowment. Wellesley’s physical plant represents an asset base of significant magnitude that merits methodical care in preservation, maintenance, and modernization.

1 Variations in building counts arise from different sets of buildings being included in various aspects of the study. Similarly, there are slight variations in sub-reports for GSF, CRV, or NASF figures (depending on which buildings were included.)
CONDITION DATA
Wellesley’s prior data on building condition and related cost estimates for repairs, replacements, and upgrades were reviewed, updated, and incorporated into the new condition/quality assessments described below. The condition data from previous studies are provided separately as an Asset Preservation summary, among materials delivered in electronic format.

SPACE INVENTORY
Classification of higher education facilities for purposes of a Space Inventory is based on a national standard taxonomy, published by the US Department of Education in the Postsecondary Education Facilities Inventory Classification Manual, and thus often referred to as PEFIC Codes. (PEFIC Codes are provided in as exhibits in both Section II—Space Capacity and Section III—Methods.)

Wellesley now has an updated and corrected Space Inventory of Net Assignable Square Feet (NASF) of most campus space, coded by functional space type (in accordance with PEFIC Codes), and also coded by assigned department/user. (Department codes appear as Exhibit 2 of Section II—Space Capacity.)

The Inventory includes 1,921,141 square feet of coded space, of which 612,866 is Non-Assignable. By PEFIC space type, Wellesley’s distribution of 1,308,275 NASF (Assignable) is shown in Figure 2.

![Figure 2—Distribution of Wellesley Campus Space by Standard PEFIC Codes](image)

Normally, institutions are surprised to see how little campus square footage actually is devoted to instructional space uses. In this case, Classrooms and Teaching Laboratories comprise 4% and 7%, respectively, of total campus square footage. Residential Facilities constitute 33% of Wellesley’s space. Student housing always represents a major portion of campus space, especially so in the case of residential colleges. Office Facilities, in this case 14%, and General Use Facilities (those that support campus life), in this case 15%, typically are major consumers of space.

Given the fact that Wellesley College places great emphasis on the comprehensive student experience, it is logical that facilities that support campus life represent about half the College’s assignable space—including Residential at 33%; General Use at 15%; Health Care (less than 1%); and portions of Special Use relating to Athletics.
DEMAND AND USER DATA
For the Space Capacity Analysis, the model (space allowances) is applied to metrics of demand or use. Data for this analysis were supplied to the consultants by various offices at Wellesley, including:

- Student enrollment, student contact hours, and class schedule data (Office of the Registrar)
- Library collection volumes (Office of the College Librarian)
- Personnel counts (Office of Human Resources and Office of the Dean)

The SCA for Wellesley was based on the following metrics of demand or use, as of Spring 2006:

- 2,300 full-time equivalent (FTE) students, slightly higher than actual recent trends
- More than 25,000 student contact hours (SCH) for Classroom utilization
- Nearly 6,000 SCH for Teaching Laboratories utilization, of which about 3,600 SCH is in the Science Center
- Personnel FTEs of slightly more than 1,000
- More than 900,000 volume equivalents of Library collection.

METHODS FOR PROJECT FORMATION AND PRIORITIZATION
In addition to assembly and verification of data noted above, other early work was aimed at creating the framework and tools with which to carry out this study. These policy and analytical tools included:

- Framework Principles
- Space Planning Standards (Space Capacity Model)
- Facility Quality Criteria
- Building Essentiality Categories
- Project Urgency “Bands” (FCQIs)
- Prioritization Factors.

Please refer to Section III—Methods for these materials.
NEEDS ASSESSMENTS

SPACE CAPACITY ANALYSIS

Methods
In this methodology, one develops a model (consisting of Space Allowances or Space Planning Standards) that predicts the amount of space required, by space type, and one then compares the predicted space requirement with actual space in the Inventory. The Space Capacity Model developed for Wellesley was based, in part, on typical ones in use in higher education, but adjusted to reflect the space utilization patterns that are characteristic of small liberal arts colleges.

Using the Model developed for Wellesley, the SCA was performed for selected space types. Excluded space types were:

- **Research Laboratories.** This space was not included in the SCA, as the only plausible planning standards for research space are based on dollars of externally funded research—not a meaningful measure for a liberal arts college. Research space for Wellesley must be determined based on programmatic justification.

- **Residential Facilities.** This space type also was excluded, as space allowances based on square footage are not meaningful for student housing. Usually, the need for residential space is expressed in terms of the number of beds required. For example, a college with 5,000 students that, by policy, wishes to house half its student cohort, requires 2,500 beds. The actual square footage required for 2,500 beds can vary considerably with the type of housing in place or desired.

- **Special Use and General Use Facilities.** There are a number of categories of General Use and Special Use space that also were excluded, as these are facilities that must be planned based on programmatic considerations and for which quantification of demand or use is not informative. From the standard categories of Special Use, only Physical Education/Athletics/Recreation space was included. Within the General Use categories, only Food Service and Recreation Facilities are included.

- **Health Care Facilities.** The SCA methodology is rarely applied to infirmaries and health care space. Some additional, special analysis was done for the Science Center, as its space is complicated and, more importantly, because current capital project planning for the Science Center could benefit from the SCA information. See Section III—Methods for more detailed information about the SCA methodology and refer to PEPIC Codes in exhibits of Section II or III, for a quick reference on functional classifications of space.

Findings
Overall, Wellesley has more than adequate amounts of space in nearly all space types. The College’s facility deficiencies are not of a quantitative nature. As an exception, there is some evidence that Office Facilities are in shorter supply than other space types, with some units having a calculated deficit of office space, based on personnel counts and the model. As the calculated surplus in Office Facilities is less than 5% (within a range of variance not normally considered significant), the SCA results support the general sense that offices are not in general oversupply and are, in some cases, scarce.

Overall, the SCA provides information that can help Wellesley rightsize and balance its distribution of space—both via improved space management practices and in connection with major building renovation projects.

The detailed SCA report is provided in Section II—Space Capacity.
Facility Condition and Quality Assessment

Methods
The methodology for this work was not a physical condition audit with which many colleges are familiar. Those studies typically provide a detailed assessment of the condition deficiencies of buildings, organized around building systems and their components. A condition audit answers the question:

What will it take to bring the building back to its original condition and to meet current codes?

In this study, the Facility Condition and Quality Assessment (FCQA) was a more broadly construed evaluation, designed to capture—along with condition deficiencies—needs arising from other qualitative factors that make a building and its spaces function properly to support programs. The FCQA is organized around space types, not building systems. It is intended to answer the question:

What will it take to bring this facility to the equivalent of a modern one of its size and type and to ensure that it adequately supports present and future functional program requirements?

The methodology, developed by this consulting team, involves:

- Adoption of detailed Facility Quality Criteria (by space types)
- Walk-through inspections to evaluate buildings against the Criteria
- Incorporation of other condition data
- Development of comprehensive projects to repair, replace, renovate, modernize, change use, or otherwise prepare the buildings to serve well in the future.

Please see Section III—Methods for discussion of the methodology and the Facility Quality Criteria.

Findings
Wellesley’s primary capital investment challenges are in the domain of modernization or renovation of nearly all the College’s buildings. Exceptions are those buildings or parts of buildings that are either new (Wang Campus Center) or which were subjected to major renovations recently (Humanities Center in Green Hall and Pendleton East).

Since the SCA did not reveal a need for any new construction based on capacity expansion requirements, the entirety of building-related needs defined in this planning effort is to achieve condition deficiency corrections, functionality improvements, and overall quality standards for all campus buildings. The evaluation outcomes are contained in the Capital Projects Plan Database.

Roof and Exteriors Review
Wellesley has many buildings with complicated roofs in terms of structure and materials. Although the FCQA included all building elements, it was determined that greater attention should be given to the extremely important matter of building envelopes—including roofs and façades. To this end, a special, additional review of roofs and exteriors was conducted for selected buildings. A separate report was generated and is included in Section IV.

Infrastructure Study
This category of capital investment needs is essential to the operation and functionality of the campus—as well as to aesthetics. Infrastructure is defined as including utilities, circulation and parking, certain site-related improvements, and landscaping. Wellesley undertook a separate engineering study of infrastructure needs in parallel with this work, working with B.V.H. Integrated Services, Inc. (Connecticut). Interim infrastructure estimates (not final) are included in the Capital Projects Summaries in Section IV.
CAPITAL PROJECT PLAN SUMMARY

TOTAL ESTIMATED NEEDS

The outcome of all the above leads to comprehensively defined capital needs in the range of $369 million (in Direct Cost). When one adds Indirect Cost (modeled at 35% of Direct Cost), to arrive at fully burdened Total Project Cost, the estimated need is $498 million. This figure then will be subject to inflation. Escalations can be applied as inflation assumptions are developed and updated during the Plan implementation period.

The cost estimates are provided, building by building, in the Capital Projects Plan Database, and further divided into categories of type of work or need. It is important to note that these costs were created to provide a comprehensive sense of needs, not to price actual projects. They are order-of-magnitude estimates, in some cases based on preliminary assumptions. In the case of many Wellesley buildings, an estimate was made that provides an allowance for functional improvements, but without benefit of having an actual program. (Green Hall is a major example.) The intent is that, as each project comes up in priority considerations, a detailed functional program for renovations will be developed by Wellesley and detailed engineering studies will be undertaken. At that time, the Total Project Cost will be refined.

DISTRIBUTION BY TYPE OF FACILITY

The distribution of Total Project Cost, by type of facility, is shown in Figure 3.

Figure 3—Distribution of Total Project Cost by Facility Type

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1 Includes interim estimates for Infrastructure.
DISTRIBUTION BY TYPE OF NEED

Then, the distribution by type of capital need is shown in Figure 4, based on the following definitions:

- **Function.** Changes required for functionality, including program requirements, and reconfigurations
- **Shell.** Roofs and exteriors (*building envelope*)
- **Interiors.** Finishes, including walls, floors, lighting, etc.
- **Services.** Building systems—mechanical, electrical, HVAC, code compliance, etc.
- **Site Work.** Exterior work immediately related to specific buildings
- **Environmental.** Presumed presence of old building materials that must be removed (e.g. asbestos)
- **Infrastructure.** Non-building needs, including utilities, circulation, parking, and landscaping.

![Figure 4—Distribution of Total Project Cost by Type of Need](image-url)
PRIORITIZATION

There is no methodology by which one can generate an automatic prioritization of capital needs. Nor would one want to do this. However, this consultant team has developed and applied a two-part approach by which Wellesley can:

- Create prioritized sorts of capital projects that are relatively objective, as a point of departure
- Then apply prioritization factors which, while subjective, can at least always be considered systematically in capital priority decisions.

The methodology for prioritization is described in detail in the Section III—Methods, including:

- Building Essentiality Categories
- Building Urgency Factor (based on calculated FCQIs)
- Prioritization Factors (subjective considerations).

The consultants have provided Wellesley some initial prioritization sorts based on the above tools.

By our methodology, the result is not a ranked list of projects. Rather, projects are sorted into priority levels. This leaves broad latitude for College leadership to make decisions about actual project sequence.

It should be noted that, even with these techniques, there is no single definitive treatment of prioritization. Rather, the tools now are in place for Wellesley to sort and re-sort projects, and to apply Prioritization Factors, as the Capital Projects Plan is carried out.
RECOMMENDATIONS

DATA AND TOOLS
While it is a major accomplishment to have, at present, a comprehensive set of identifiable capital needs of the College, this is only a snapshot. In reality, programs and the buildings that house them both are subject to dynamic processes, including program changes and building deterioration. Thus, the real strength of the methodologies used in this work is the ability to update and manage the data over time—thus creating a permanent decision support tool.

The following recommendations pertain to maintenance of the data and tools:

- **GSF and CRV Data.** Complete the process of updating measured GSF and estimating CRVs and coding space for the Inventory for those buildings that were excluded from this analysis—in order to have a complete set of baseline facilities data
- **Policy.** Periodically review the Framework Principles and the Prioritization Factors to determine if policy changes are needed
- **Student and Teaching Space Utilization Data.** Develop improved procedures for consolidating all class schedule, seat counts, and student contact hours data in the database of the Office of the Registrar—including teaching spaces that are scheduled by departments—so that the SCA may be updated periodically
- **Space Inventory.** Develop a procedure for making continuous updates and changes to the Space Inventory, to capture PEFIC Code or department/user code changes, each time a space configuration is changed or a space is reassigned
- **Cost Updating.** Develop assumptions for periodic updating of building CRVs and Total Project Cost estimates—based on CPI or other inflation assumptions
- **Management.** Consider assigning responsibilities for updating and maintenance of all or parts of the Capital Projects Plan Database and its component data to specific personnel.

SPACE CAPACITY AND SPACE MANAGEMENT
The Space Capacity Analysis leads Wellesley to opportunities for better balance in deployment of existing space. Some improvements may be achieved by reassignments; most will be achieved as part of re-programming in connection with major renovations. Section II—Space Capacity provides additional details about the following capacity-related strategies.

- **General Classrooms and Teaching Laboratories.** Improve the match of room sizes and class section sizes by studying typical section sizes and re-sizing rooms in renovation projects; consider reassignment of some instructional rooms to different uses; and recognize that most teaching space needs will be solved with qualitative improvements, including condition correction, reconfiguration, and technology upgrades
- **Office Facilities.** Evaluate opportunities for redistribution of office space in connection with major renovations and convert surplus classrooms or labs to offices, where needed
- **Athletics, Physical Education, and Recreation.** Assess alternatives for reconfiguration of Keohane space to meet current program requirements
- **Food Service Facilities.** In connection with a series of residence hall modernization projects, consider opportunities to consolidate food services.
REORGANIZATION AND RESTATEMENT OF PROJECTS

One of the art forms in capital planning is the definition of what is meant by the term project. For example, in condition audits, the term project often is used to mean each building system component requiring upgrade, repair or replacement.

In this work for Wellesley, projects are associated with buildings or they are infrastructure projects. The initial working definition of project is a defined set of requirements for a given building. Whole-building renovations are a useful initial assumption, because renovating an entire building is often efficient and provides considerable qualitative impact on a campus.

But whole-building renovations are not always feasible or optimal. Wellesley now has many opportunities to redefine projects in many ways—for example:

- **Swing Space.** As buildings or portions of buildings are taken off-line for major work, there will be a series of temporary moves of functions and programs. Some projects may be defined to meet this need cost-efficiently and with least disruption to programs and campus life.

- **Batch a Building or Buildings with Related Infrastructure.** Another step remaining to be taken is the association of infrastructure project elements with building projects. As building priorities become more definitive, those portions of infrastructure improvements required specifically to support the buildings in various parts of the campus should be staged in the prioritization scheme. In some cases, the definition of project might be revised to include both the building(s) and related required infrastructure as a single project.

- **Make One or More Shell (Roof and Exterior Façade) Projects.** Generally, building roofs and exteriors can be undertaken separately from building interiors. Wellesley has a considerable volume of work defined as shell, and this work is essential to asset preservation, with some buildings now (or soon to be) at risk of damage, if this work is not done soon. Thus, it is logical that several roofs and exterior façade projects (for buildings with similar materials and construction) could be batched together as one or more projects. In addition to asset preservation, this way of defining projects may provide some contract efficiencies. An additional advantage of batching building envelope projects is that one or more roof/exteriors projects could begin immediately, while program dialogue is undertaken that must be incorporated into plans for interior renovations.

- **Divide a Single Building into Multiple Projects.** In some cases, a single building project, as initially defined, may be impractical or disruptive. Thus, in some cases, a project may be defined as a portion of a building’s interior. As an example, Green Hall’s currently defined project ultimately might become four or five projects.

- **Batch Functionally Linked Needs into a Project.** While needs are stated initially by building, there are some common functions, like dining services, which occur in several buildings. So, hypothetically, one might define and organize changes in dining services in two or more buildings as a single linked project.

- **Initiatives.** Wellesley might consider the possibility that capital financing and fundraising might be supported by the identification of initiatives—combining a series of like projects that, together, would solve a major set of capital needs. For example, one could envision a “Wellesley College Residence and Dining Hall Modernization Initiative.” In this idea, the projects for all the residence halls and dining facilities would be subjected to further analysis to develop a strategy for sequencing or batching, or both. Solutions might be required if any space will need to be off-line during the academic year. Then, the entire Initiative could be the subject of targeted capital financing or fundraising. One might picture an Academic Quad Initiative or a Teaching Space Initiative or a Building Preservation initiative. Others are possible.
FROM CAPITAL PROJECTS TO A CAPITAL DEVELOPMENT PLAN

There is a difference between a Capital Projects Plan and a Long-Range Capital Development Plan in that the latter begins with the former, but would add more elements of prioritization; would take into account project management and staging factors; and, above all, would revise priorities and estimate expected annual capital outlays based on a comprehensive analysis of financing alternatives.

The consultant team recommends that Wellesley may consider using this body of work to develop a detailed Long-Range Capital Development Plan. Figure 5 shows the comprehensive model and Figure 6 shows where Wellesley now is in the process.

**Figure 5—Long Range Campus Development Plan**

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<td>Mission and Programs (Priorities)</td>
<td>Space Capacity Analysis</td>
<td>Capital Projects Plan (Comprehensive Needs)</td>
<td>Space Management (Assignments)</td>
<td>Long Range Campus Development Plan (Baseline)</td>
</tr>
<tr>
<td>Campus Physical Vision (Master Plan)</td>
<td>Condition and Quality Assessment</td>
<td>Programming &amp; Prioritization (Preferred Scenario)</td>
<td>Financing Plan (Debt and Philanthropy)</td>
<td>Tools in place for updating</td>
</tr>
<tr>
<td>Constituent Inputs (Oversight and Interviews)</td>
<td>Special Needs Assessments</td>
<td></td>
<td>Project Management Plan</td>
<td></td>
</tr>
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<td>Ongoing Communications to Sustain Consensus</td>
<td>Infrastructure and Landscape</td>
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</table>

**Figure 6—Wellesley College Capital Projects Plan**

<table>
<thead>
<tr>
<th>Foundation Elements</th>
<th>Needs Analyses</th>
<th>Capital Projects Plan</th>
</tr>
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Additional components would include two tiers of considerations.
Tier 1 Considerations

- **Space Management.** Undertake space management that will provide at least some improvements in space utilization (and may relieve office needs temporarily until major renovations can be done).

- **Program.** Incorporating SCA findings and possible relocations of some functions, develop the program or functional changes required in the cases of those buildings where such decisions are still needed and revise the project statements and cost estimates (if the program decisions would cause the estimates to vary considerably).

- **Preferred Prioritization Scenario.** Develop additional prioritization scenarios, including some that would make use of alternate project definitions above—until a particular prioritization scenario emerges that makes sense enough to serve as the baseline of project ordering—at least for the first priority levels.

- **Infrastructure Components.** Organize and align infrastructure projects based on the **Preferred Prioritization Scenario.**

- **Capital Finance.** Conduct a current analysis of available debt capacity and consult with financial advisors about possible debt structures for a cost-effective, multi-year financing program.

- **Fundraising.** Evaluate fundraising potential by categories of projects or for particular buildings or initiatives, and make some initial estimates of donor funding levels that might be achieved.

- **Estimated Pattern of Capital Outlays and Revised Preferred Prioritization Scenario.** Re-order the projects and modify the **Preferred Prioritization Scenario,** this time expressing planned expenditures on an annual outlay basis—with the annual outlays informed by the financial and fundraising analysis and reflecting escalations for inflation.

Tier 2 Considerations

- **Execution—Resources.** Consider project management factors, including management capacity and project delivery alternatives—for example, additional staff hires or use of outside resources.

- **Execution—Staging.** Determine which projects may/must be completed during summers vs. which may/must take longer and determine swing space projects required, or other solutions.

All the above needs to be in the form of **iterative analyses**—depicted in Figure 7—that would lead to a single baseline scenario—here called a **Long-Range Campus Development Plan (LRCDP).**

**Figure 7—Iterations to Achieve Long-Range Campus Development Plan**

Also, the process of integrating financing and management considerations might lead to elimination, modification, or reduction of some currently-stated projects. For example, it might be found that Wellesley cannot logically complete this magnitude of capital investment and some currently defined projects might be scaled back.

At this point, actual duration in years and actual scale in dollars of the entire **Plan** will be known.

On a final note, while work defined above would lead to a baseline LRCDP—a roadmap defining details of what, how, and when, **nothing** about it would need to be inflexible. It would be subject to active management and would be modified, as needed—as program priorities, available resources, or other conditions change.
EXHIBITS

EXHIBIT 1—WELLESLEY COLLEGE PARTICIPANTS AND CONSULTANTS

Project Team
Mr. Peter Zuraw, Assistant Vice President, Facilities Management and Planning, Chair, Project Team and Project Manager
Ms. Patricia Byrne, Vice President, Administration and Planning
Mr. Michael Dawley, Assistant Director, Physical Plant
Ms. Traci Robie, Business Manager, Physical Plant Operations
Mr. Patrick Willoughby, Associate Director, Physical Plant

Oversight Committee
Ms. Patricia Byrne, Vice President, Administration and Planning, Chair, Oversight Committee
Ms. Ashley Benner, Student
Dr. Lee Cuba, Professor
Mr. Steven W. Kidder, Trustee
Dr. Andrea Levitt, Professor
Ms. Ellen Miller, Trustee
Mr. Norton Reamer, Trustee
Ms. Sandra Roberts, Director of Telecommunications
Ms. Catherine Salop, Executive Assistant to the President
Dr. Adele Wolfson, Associate Dean of the College and Professor

Interview Groups (Invited or Present)
Mary Allen                  Marion Dry                  Emily Kennedy                  John Rhodes
Kim Akins                  Peter Eastment               Sophie Lee                    Sandra Roberts
Wendy Bauer                Avery Esdaile                Erin Lehman                   Mary Ryder-Kenna
Bridget Belgiovine         Andrew Evans                 Michelle Lepore                Catherine Salop
Barbara Beltz              Anne Fahim                   David Lindauer                Andrew Shennan
Julia Bergofsky            Peter Fergusson              Kenneth Loewit                 Dennis Smith
Judith Black               Claire Fontijn               Mindy Mangels                 Filomena Steady
David Blinder             Kenneth Freundlich         Annick Mansfield              Margaret Thompson
Robert Bossange            Hana Freymiller             Clare McCurry                  Lara Tohme
Martin Brody               Barbara Geller               Eloise McGaw                  Ying Wang
Marcie Bruder             Kim Goff-Crews               Phyllis McGibbon              Dorothy Webb
Nathalie Buchet Ritchey   Alison Greer                  Panagiotis Metaxas            Eve Zimmerman
William Cain               George Hagg                 David Mickenberg
Timothy Cantin            Phil Harty                   Carolyn Morley                Elizabeth Potter
Angela Carpenter           Rosanna Hertz               Mary Morris                   Sarah Rahko
Margaret Carroll           Sylvia Hiestand              Joanne Murray                 Joy Renjilian-Burgy
Maud Chaplin               Thomas Hodge                Mary Pat Navins               
Susan Cohen                Nora Hussey                  Keri O’Meara                   
William Coleman           Jessica Hyland               Kathryn Osmond                
Martha Dietrick            Micheline Jedrey              Patricia Paul                 
Bonnie Dix                 Samantha Jones              Elizabeth Potter               
Carlos Dorrien            Thomas Kane                  Sarah Rahko                   
Carol Dougherty            Anastasia Karakasidou       Joy Renjilian-Burgy              

Consultants—Team Leaders
Dr. Harvey H. Kaiser, Harvey H. Kaiser Associates, Project Director
Ms. Eva Klein, Eva Klein & Associates, Project Manager
Mr. Mark Zarrillo, Symmes Maini McKee & Associates, Team Leader, Technical Team

Consultants—Technical Team
Mr. William D. Middleton, Eva Klein & Associates, Methodology and Criteria for Facility Condition/Quality Evaluation
Mr. Robert Hicks, Symmes Maini McKee & Associates, Consultant, Facility Condition/Quality Evaluation and Capital Projects
Mr. Peter Lofgren, Symmes Maini McKee & Associates, Consultant, Facility Condition/Quality Evaluation and Capital Projects
Ms. Nidhi Madan, Symmes Maini McKee & Associates, Consultant, Space Inventory and Facility Condition/Quality Evaluation and Capital Projects
Mr. Andrew Goetze, Symmes Maini McKee & Associates, Roof and Exteriors Evaluation
Mr. Carlos Charry, Symmes Maini McKee & Associates, IT Support and Capital Projects Plan Database
Mr. John Fortin, Bond Brothers, Cost Estimating
Mr. Steven LaJoie, Bond Brothers, Cost Estimating
## Abbreviation or Acronym Definitions and Explanations

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<tr>
<th>Abbreviation or Acronym</th>
<th>Definitions and Explanations</th>
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<tr>
<td>Building Essentiality</td>
<td>Categorization of campus buildings into three levels or tiers of their relative essentiality to College mission—Categories, A, B, and C</td>
</tr>
<tr>
<td>CEFPI</td>
<td>Council of Educational Facility Planners, Inc. Publishes standards for higher education space planning</td>
</tr>
<tr>
<td>Construction Cost or Direct Cost</td>
<td>Cost to build the project Expressed as per square foot and total</td>
</tr>
<tr>
<td>CRV</td>
<td>Current Replacement Value The cost to completely replace an existing facility, based on per square foot costs and including indirect costs (modeled at 30% for this study)</td>
</tr>
<tr>
<td>FCQI</td>
<td>Facility Condition and Quality Index A ratio of the Cost to Renovate or Modernize a Building divided by the building’s Current Replacement value. The higher the value, the more urgently the building requires work. Ratio values greater than 1.0 indicate that it would be more economical to demolish and replace the facility than to fix it.</td>
</tr>
<tr>
<td>FTE</td>
<td>Full Time Equivalent A measure of students considered to be taking a standard semester credit hour load. Also, a measure of personnel counts equated to full-time</td>
</tr>
<tr>
<td>GSF</td>
<td>Gross Square Feet The entire area of a building, based on footprint and including walls</td>
</tr>
<tr>
<td>Indirect Costs</td>
<td>Costs required to execute the project, in addition to Construction Cost or Direct Cost—expressed as per square foot and total. Also called Owner’s Costs and can be in the range of 30% to 40% of Direct Costs (modeled at 35% for this study)</td>
</tr>
<tr>
<td>LRCDP</td>
<td>Long-Range Capital Development Plan Comprehensive approach to planning long-range capital investments, integrating Capital Projects Plan with Management Plan and Financing Plan</td>
</tr>
<tr>
<td>NASF</td>
<td>Net Assignable Square Feet The area that can be assigned for functions or programs; excludes circulation, hallways, rest rooms, etc.</td>
</tr>
<tr>
<td>PEFIC, PEFIC Room Use Codes, or PEFIC Codes</td>
<td>Postsecondary Education Facilities Inventory Classification (Manual) Taxonomy of higher education space types (US Department of Education)</td>
</tr>
<tr>
<td>PHC</td>
<td>Planning Head Count The number of persons using food services (holders of meal cards)</td>
</tr>
<tr>
<td>Project Urgency</td>
<td>Categorization of degree of urgency of building repair/renovation needs, based on calculation and sorting of Facility Condition and Quality Index</td>
</tr>
<tr>
<td>SCA</td>
<td>Space Capacity Analysis Methodology to apply space planning standards to predict space requirements and then to compare required space with actual, existing space</td>
</tr>
<tr>
<td>SCH, WSCH, or WSLabCH</td>
<td>Student Contact Hours or Weekly Student Contact Hours or Weekly Student Laboratory Contact Hours The number of students (in a section) X the number of hours per week the section meets</td>
</tr>
<tr>
<td>SOR</td>
<td>Station Occupancy Ratio Percentage of available seats/stations in a Classroom or Teaching Laboratory that are occupied when the room is scheduled for sessions—a factor of utilization</td>
</tr>
<tr>
<td>Space Capacity Model or Space Planning Standards, or Space Allowances</td>
<td>Metric to predict space requirement, usually expressed as a Space Allowance per unit of use/demand. In addition, there are two measures of Space Utilization applied to Classrooms and Teaching Laboratories—WRH and SOR</td>
</tr>
<tr>
<td>Total Project Cost</td>
<td>Cost to build the project, including all indirect costs such as architecture/engineering fees, financing costs, management expenses, commissioning, etc. Expressed as per square foot and total</td>
</tr>
<tr>
<td>USF</td>
<td>Usable Square Feet Usable space within a building; includes assignable space and non-assignable space (elevators, corridors, stairwells, rest rooms, mechanical rooms, etc.)</td>
</tr>
<tr>
<td>WRH or WRUH</td>
<td>Weekly Room Hours or Weekly Room Use Hours Average number of hours per week that a specific room (or all classrooms or all labs) is/are scheduled for instructional sessions—a factor of utilization</td>
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</table>