A New Strategic Plan: Into the 21st Century
2009–2015
Table of Contents

Foreword ................................................................. 1

Introduction and Acknowledgments ................................ 3

The New York Botanical Garden Board of Managers ............ 5

The New York Botanical Garden Staff Policy Group ............. 7

Book One: Program Plan .............................................. 9
  Executive Summary ................................................. 11
  International Plant Science Center ................................. 19
  Horticulture and Living Collections ............................... 33
  Public Education for Children and Adults ....................... 53
  LuEsther T. Mertz Library ......................................... 65
  Marketing, Business Development, and the Visitor Experience .... 73
  Management and Infrastructure ................................... 87

Book Two: Landscape and Architecture Plan ..................... 97

Book Three: Financial Plan .......................................... 113

Appendices ............................................................ 141
  Expanded Planning Group .......................................... 141
  Consultants to Strategic Planning ................................ 145
  Facts about the Garden in 2008 ................................... 147
  Operating Revenue Projections – Fiscal 2008 ................. 154
  Operating Expense Projections – Fiscal 2008 .................. 155
  The New York Botanical Garden Senior Management .......... 156
Over the past generation The New York Botanical Garden has grown into a mature organization, programmatically far reaching, intellectually authoritative, and discerning about the course of future development. Always true to its historical mission and in keeping with recent achievements, the institution will focus on core competencies in horticulture, science, and education in the next seven years. It has examined how those core competencies will best be shaped to serve in the world today, and it will carry out A New Strategic Plan: Into the 21st Century, 2009–2015 with passionate commitment to excellence in program and management.

The Botanical Garden has attained its preeminent position among horticultural, scientific, and educational organizations in part due to a highly committed and visionary Board of Managers, who have over many years continuously supported and promoted the programs of the institution. The tasks of both Board and staff at this juncture are to deliver the highest quality intellectual and educational services while building the endowment and earned revenue. Accomplishing the goals embedded in the plan will ensure that the Garden maintains the highest standards and achieves a secure future.

Envisioning and planning the future of The New York Botanical Garden is an exciting and ongoing endeavor. What past generations of Board and staff began, we are privileged to continue today. With the Garden’s landscape and architecture continually being restored and updated, its programs developed and refined, and its staff enhanced to more fully achieve the mission, the glorious past of the institution will be reflected in its future as we proceed Into the 21st Century.

Wilson Nolen
Chairman of the Board

Lionel Goldfrank III
Chairman of the Executive Committee

Julie Sakellariadis
Chairman, Strategic Planning
An institution with the complexity, stature, and responsibilities of The New York Botanical Garden requires an approach to planning that is comprehensive and long-term. The Botanical Garden has been well served by the process that it created fifteen years ago, having experienced a period of unparalleled growth as a result. The previous two plans, The New York Botanical Garden Plan for 1993–1999 and Plan for a New Era: 2001–2007, enabled the Garden to expand significantly its influence and scope. These plans allowed the Garden to respond to the demands of its constituencies both near and far, advancing the role of science and educating and inspiring the general public. As the Garden looks ahead to the next seven years, it can plan with confidence to be both self-sustaining financially and further development.

The planning process for A New Strategic Plan: Into the 21st Century, 2009–2015, began in earnest in January 2006. Commencing with a six-month-long strategic competitive analysis, planning progressed through a year and a half of presentations from the Expanded Planning Group, comprising nearly 150 managers with program responsibility. The planning proceeded up through five levels of management with ideas being discussed, analyzed, and refined along the way. The entire organization was involved, from representatives of program and support areas to Board Members who participated in planning sessions, received regular updates, and came together for detailed discussion in a retreat in November 2007. This collaborative process resulted in a tripartite plan with programmatic, capital, and financial components.

The new plan presented here reflects the sum of these efforts. It includes major initiatives such as the restoration of the “Heart of the Garden” in Horticulture; the reinvigoration of science research, including the creation of a new Conservation Office; enhancing programs and facilities in Public Education for Children and Adults; and the modernization of the Library. Acknowledging the important role of earned income in the coming plan, strategic investments will be made in building brand identity and awareness, presenting large-scale exhibitions, and developing new businesses. The administrative departments have outlined ways in which they will work in partnership with the program departments to ensure their initiatives are realized.

These initiatives and many more are laid out in detail in this document, A New Strategic Plan: Into the 21st Century, 2009–2015, in three parts: Program Plan, Landscape and Architecture Plan, and Financial Plan. To continue this forward momentum of the Garden, the funding required totals $479 million. It will be an investment well spent, as the future of The New York Botanical Garden has never been more promising and its role in the world more critical.
The New York Botanical Garden Mission Statement
The New York Botanical Garden is an advocate for the plant kingdom. The Garden pursues its mission through its role as a museum of living plant collections arranged in gardens and landscapes across its National Historic Landmark site; through its comprehensive education programs in horticulture and plant science; and through the wide-ranging research programs of the International Plant Science Center.

Gregory Long
President and Chief Executive Officer
March 2008
**Ex Officio**
Hon. Adrian Benepe, Commissioner, Department of Parks and Recreation
Hon. Michael R. Bloomberg, Mayor of the City of New York
Hon. Adolfo Carrin, Jr., Borough President of the Bronx
Hon. Joel A. Klein, Chancellor, New York City Department of Education
Hon. Kate D. Levin, Ph.D., Commissioner, Department of Cultural Affairs
Hon. Christine C. Quinn, Speaker, The New York City Council
Hon. William C. Thompson, Jr., Comptroller of the City of New York

**Managers Emeriti**
- William S. Beinecke
- Roscoe C. Brown, Jr., Ph.D.
- Mrs. Thomas H. Choate
- Mrs. Thomas M. Evans
- Hon. Peter H.B. Frelinghuysen
- Mrs. Grayson M.P. Murphy
- Mrs. Donald B. Straus

**Board of Advisors**
- Mrs. John C. Novogrod, Chairman
- R. Ellen Avellino
- Mrs. Mortimer Berkowitz III
- Cynthia D. Brodsky
- Gilbert Butler
- Susan Cohen
- Mrs. James B. Fairchild
- Mrs. Eric C. Fast
- James L. Ferguson
- Aramina Ferrer
- Mrs. Robert C. Graham, Jr.
- Mai Hallingby Harrison
- Mrs. David L. Hopkins, Jr.
- Mrs. William H. Janeway
- Mrs. Wm. Mitchell Jennings, Jr.
- Mrs. Carlisle Jones
- Jill Joyce
- James W. Kinnear
- Lawrence Lederman
- Mrs. Philip B. Miller
- Gene A. Norman
- Mrs. Andrew Safran
- Nicholas J. Sakellariadis
- Mrs. Arnold Schwartz
- Howard S. Larkin
- Mish Tworowski
- Karen Washington

**Distinguished Counsellors to the Board**
- Francis H. Cabot
- Helen Dillon
- Gerald M. Edelman, Ph.D.
- Vartan Gregorian, Ph.D.
- Penelope Hobhouse
- Jessye Norman
- Professor Sir Ghillean Prance, CBE, FRCS
- The Dowager Marchioness of Salisbury
- Harold Varmus, M.D.
- Edward O. Wilson, Ph.D.

---

**The New York Botanical Garden Staff Policy Group**

- Gregory Long, President and Chief Executive Officer
- Michael J. Balick, Ph.D., Vice President for Botanical Science Research and Director and Phylecotomy Curator, Institute of Economic Botany
- Marisa Biehl, Associate Vice President for Marketing
- AnneMarie Blancato, Associate Vice President for Budget and Financial Planning
- Brian M. Boom, Ph.D., Special Assistant to the President, and Director, Caribbean Biodiversity Program
- Franciska Coelho, Associate Vice President for Glasshouses and Exhibitions
- J.V. Cossaboom, Chief Operating Officer
- Mark Cupkovic, Associate Vice President for Operations
- Jeffrey Downing, Vice President for Education
- Margaret Falk, Associate Vice President for Landscape, Gardens, and Living Collections
- Todd Forrest, Vice President for Horticulture and Living Collections
- Susan Fraser, Director of the Library
- Sally Gavin, Vice President for Administration
- Frank Genese, Vice President for Capital Projects
- Rosemary Ginzy, Vice President for Government and Community Relations
- Robert Heinisch, Vice President for Site Operations
- Catherine Hipp, Vice President for Garden Retail and Business Development
- Claudia Keanan Hough, Vice President for Marketing, Business Development, and the Visitor Experience
- Karl Lauby, Vice President for Communications
- Susan Maier, Vice President for Finance and Planning
- James S. Miller, Ph.D., Dean and Vice President for Science and Rupert Barnaby Curator
- Frank Morris, Associate Vice President for Security
- Kristine A. Pottinger, Associate Vice President for Visitor Experience and Earned Income
- Jennifer Rominiecki, Vice President for Individual Giving and Special Events
- Jennifer Rothman, Associate Vice President for Children's and Public Education
- Terry Skoda, Associate Vice President for Creative Services
- Dennis Wm. Stevenson, Ph.D., Vice President for Botanical Science Research and Phylecotomy Curator
- Catherine Sumner, Associate Vice President for Corporate and Foundation Relations
- Mericia Weyand, Vice President for Corporate and Foundation Relations
- Karen Yesnick, Associate Vice President for Human Resources

---

As of 12/31/07
The New York Botanical Garden is a much different place today than it was in fiscal 1993 at the outset of the first strategic plan, both in terms of magnitude and ambition. Always a venerable institution and reflecting more than a century of tradition, the Garden is increasingly pointed toward the future, actively honing its programs to increase impact and relevance in a changing world. The investments made in the two prior plans position the Garden ideally to accomplish this. Major landscape and infrastructure improvements have provided the foundation on which to build at a time when the need and interest has never been greater. That success illustrates as well that strategic planning is a multi-dimensional undertaking—involving synergistic efforts, equally engaging the public and academic worlds, and leveraging the Garden’s rich scientific and horticultural assets to educate diverse constituencies and effect change.

Certain themes have echoed continually throughout the planning process: 1.) the importance of sustainability as an institution and in the world and 2.) strengthening the Garden’s leadership position by increasing the impact of all of its resources and programs. Sustainability took on two meanings. Extensive competitive strategic analysis pointed out the breadth and scope of the Garden’s programs and focused the plan to build on the achievements of the past in a sustainable way. Ensuring that the Garden can continue to maintain excellence in its core programs and facilities is the top funding priority. The Garden’s essential role in sustaining the environment also emerged as an important theme; conservation through excellent science and public education concerning climate change were cited as priorities across the institution, with almost every department identifying ways in which its program could contribute.

There was general recognition as well that the wealth of resources at the Garden could be better leveraged for increased impact. This sense is stimulated in part by the desire to take advantage of the growing public interest in the environment and the role that plants play in it. It is also the reflection of an institution with renewed focus on its mission that has evolved to make program excellence and effectiveness paramount. Development of these themes of sustainability and impact was given a greater sense of urgency by awareness of the broad scientific consensus about the serious threats to the global environment.

A solid track record of realization of past ambitious plans generates confidence that this time will be no different. The Garden’s financial base is strong, and its prospects for future support are promising. A superb team comprising nearly 150 management and research staff, the Board of Managers, and outside consultants has worked for two years to propose and refine a set of initiatives for the forthcoming plan period, charting the Garden’s progress over the next seven years.

The strategic vision that was created for 2009–2015 is ambitious yet achievable. The Program Plan as envisioned will be supported by the Financial Plan in which earned income and endowment will play an increasingly important role. The seven-year plan initiatives total $479 million, of which $150 million is required for capital improvements and new construction and $132 million will be raised to bolster the endowment. Significant investment will also be
made in personnel to accomplish the objectives set out in the Program Plan. In making these investments, the Garden will advance substantially its position and project its great traditions into the 21st Century.

**International Plant Science Center**

Build on the historic reputation of botanical science research at The New York Botanical Garden by expanding and focusing its curatorial staff and positioning its efforts to play a leading role preserving our biological heritage and moving our world towards sustainability.

As one of the leading institutions of botanical science research in the world, the Garden plays a vital role in the discovery, documentation, and protection of plants near and far. For more than a century, Garden scientists have traveled to the field, researched plant life, identified new species, brought back specimens, and published their work, making a substantial contribution to the understanding and preservation of plant life on Earth. With the addition and development of the Lewis B. and Dorothy Cullman Program for Molecular Systematics Studies in the 1990s, the Garden was able to utilize emerging molecular and genomics techniques and analysis to expand its research capability even further. Marshaling these resources as well as those in the Garden’s unparalleled collections: 7.3 million specimens in the William and Lynda Steere Herbarium (1 million of which are digitized), 1 million books and materials in the LuEsther T. Mertz Library, and 1 million plants in the living collections, the International Plant Science Center will advance its role in the discovery, documentation, and especially protection of plants in the coming plan.

The Garden will continue the work begun in the plans of 1993–2007 but will re-focus on promoting its leading role in preservation and sustainability by coordinated efforts, both internally and externally, to yield greater results. The Garden will contribute to the global inventory of plants by maintaining excellence in its core programs, centering its international programs in five areas, and utilizing its molecular and genomics programs as sources of knowledge to assemble the Tree of Life.

Plants that have not been discovered and documented cannot be protected, and much of the Garden’s existing research lends itself to protection uses already. However, it will be much better utilized through the creation of a dedicated Conservation Office at the Garden. New research with explicit conservation and climate change goals will also be initiated. Likewise, the Garden’s collections will be made even more useful for research and conservation purposes during the plan as they are increasingly digitized and made available worldwide.

None of this will be possible without sufficient human resources, and the Garden will be adding to its curatorial staff to reach critical mass. It will also ramp up its training program both on site and abroad. A scientific staff headquarters is being created on the fourth floor of the Library building to accommodate the entire science staff, except for those housed in the Pfizer Plant Research Laboratory.

**Horticulture and Living Collections**

Strengthen our position as “America’s Garden” by expanding the horticultural impact of our unique landscape and living collections and connecting people to plants and the environment through engaging interpretation and public education programs.

As a National Historic Landmark, the 250-acre landscape of the Garden is revered and distinguished. Not surprisingly, it is considered to be one of the most important and beautiful botanical gardens in the world. Utilized in a variety of ways from recreation to research, education to enrichment, the Garden’s living collections and landscape project and fulfill its mission in a way nothing else can.

As steward of such an invaluable resource, the Garden made numerous physical improvements in the last decade, most notably the restoration of the Enid A. Haupt Conservatory. New horticultural and educational features have been added such as the Everett Children’s Adventure Garden, Benenson Ornamental Conifers, and Home Gardening Center. A program of major horticultural exhibitions, including The Orchid Show and Kiku: The Art of the Japanese Chrysanthemum, was created and succeeded in attracting a greatly increased number of visitors. Horticultural operations were advanced significantly with the construction of the Nolen Greenhouses for Living Collections and the installation of a state-of-the-art Garden-wide irrigation system.

In the upcoming plan, the Garden will continue to restore its historic landscape and living collections to attract and educate visitors and to serve as a best-practices model for public horticulture. The first step is the transformation of the “Heart of the Garden,” the historic gardens, collections, and landscapes in the center of the Garden. This massive and ambitious ecological and horticultural restoration project across 85 acres will include creation of new gardens and renewal of historic gardens and landscapes. Two new gardens will be created: an Azalea Garden along Azalea Way and a new Native Plant Garden to be developed adjacent to the Native Forest. Twin Lakes will be transformed into a beautiful Water Garden. The Rock Garden, Native Forest, and Daffodil Valley will be restored and enhanced. All of these major, interconnected improvements will be guided by the Landscape Master Plan, an ongoing study that will result in a 50- to 100-year, long-term plan for the growth and development of the Garden.

Vibrant horticultural activities will complement the landscape enhancements over the plan period. Identified as the central element in the Garden’s plan, sustainability programs will be developed in Horticulture as well. These will include the construction of a Green Materials Recycling Center and other new “green” horticulture initiatives, institutional sustainability, climate change research and outreach, and “citizen science” initiatives.

To support the accelerating earned income objectives over the plan period, Horticulture will create new exhibitions (including art exhibitions) designed to
educate, enlighten, inspire, and draw an increased number of visitors. The Garden's living collections will be augmented to supply these exhibitions and to support the Garden's role as a museum of plants.

Already an authoritative source for information on gardening, the Garden will expand its purview by providing intensive new interpretation and programming related to some of its most visible and successful gardens, displays, and collections: Seasonal Walk, Daylily/Daffodil Walk, Orchid Collection, and Home Gardening Center. Increased and improved interpretation Garden-wide will further the educational experience that the Garden offers.

Lastly Bronx Green-Up, the Garden's horticultural outreach program, will enhance programming and develop new services and activities in its 120 gardens across the borough.

Public Education for Children and Adults

Build on Educational programming that has developed to become the largest and most diverse of any botanical garden in the world, and among the finest museum-based education programs anywhere.

The Garden's Education programs for children and adults are unparalleled among botanical gardens in terms of breadth of course offerings and numbers of students, teachers, and families served. Programs for teachers were expanded during the recent planning periods, the Explainer program was developed, and plant science curricula were created and published. Most significantly, the Everett Children's Adventure Garden was constructed, a model for children's teaching gardens. Five new Continuing Education classrooms were added to accommodate continued registration growth. Facilities now, however, are aging and not adequate to handle the volume of visitors.

Children's Education has identified facilities renovations and additions as a priority for the coming plan. Two classrooms and an indoor lunchroom will be added to the Everett Children's Adventure Garden and the outdoor, interactive exhibits will be upgraded. The Ruth Rea Howell Family Garden will be restored and a new year-round greenhouse classroom will be built. Classrooms in the GreenSchool of the Enid A. Haupt Conservatory will either be renovated or replaced.

In addition, programs will be enhanced. A high school professional development program will be created. New pre-K and biodiversity curricula will be added to existing offerings. The Explainer program will be supported with additional staff. Lastly an Outreach program will enable the Garden to bring its outstanding educational programs to students who otherwise would not be able to participate in them.

Facilities are the focus of Continuing Education over the plan period as well. Onsite classrooms will be upgraded, and a computer lab will be added. Addi-

tional classroom space is being sought in Manhattan where growth potential is high and visibility for the Garden could be enhanced. Another opportunity to increase awareness of the Garden will be with the launch of a biennial international juried art exhibition which will highlight both the quality of its botanical illustration teaching program and promote an interest in the beauty of the plant world itself.

LuEsther T. Mertz Library

Modernize the Library to increase impact of our research materials and services by increasing access to electronic resources, digitizing collections, improving our electronic delivery capabilities, and creating an integrated research environment as well as by upgrading conservation facilities and enhancing exhibitions.

The world's most important library for information about the plant world, the LuEsther T. Mertz Library contains over 1 million items, including 80% of the world's published literature on plant systematics and floristics. It provides a range of reference and research services and is housed in state-of-the-art facilities created in the recently completed strategic plan. The explosion of technology, particularly the ever-increasing use of the Internet as a tool for research, is changing the ways that libraries acquire and disseminate information. As the world becomes more digitized, the Mertz Library will need to expand its ability to accommodate these new technologies to maintain its leadership role.

Although some technical advances were made in the last decade with additional staffing and the development of an online library catalog, there is much that needs to be done in this area in the next seven years. Modernization is the top priority for the Library. Building technical infrastructure and electronic management tools are of vital importance to keep the Library's assets relevant in an Internet age. This will involve a major digitization effort both in conjunction with the Biodiversity Heritage Library (a consortium of major botanical and natural history libraries that are jointly digitizing their collections) and on its own. Priority literature for digitization will include items unique to the collection and material that supports the work of scientists at the Garden. A unified, online presence for all Library resources accessed through a single point of entry (enabled by a re-built Library Web site) will make the information more usable. Continued acquisitions of both electronic and print material will ensure that the Library will maintain its stellar reputation. Electronic access to information and collections will be expanded by adding records to the Library's online catalog.

Maintaining and displaying the collection are also important priorities over the plan period. The conservation lab will be renovated, and new state-of-the-art equipment will be added to insure the continued preservation of the Library's rich assortment of historical documents and art. Launched in the last phase of the plan, the Library exhibition program will be enhanced: coordinating and marketing Library exhibitions in conjunction with the others at the Garden when appropriate, fostering collaborations with other institutions, and improv-
ing interpretation. Lastly all Library operations will be consolidated on the sixth floor of the Library building in newly renovated space with proper environmental conditions.

**Marketing, Business Development, and the Visitor Experience**

Establish and promote the position of the Garden, increase earned income as a source of revenue, and provide the best quality experience for visitors.

Much hinges on the initiatives planned in Marketing, Business Development, and the Visitor Experience as earned income is projected to shoulder an increasing portion of the total budget during the plan. Significant progress has been made in establishing and communicating the Garden’s importance in horticulture and plant science, attracting dramatically increased numbers of visitors to the Garden, and developing the Garden’s retail business. Continuing the momentum will be the challenge, made somewhat easier by the growing interest on the part of the public, both adults and young people, in environmental issues.

The Garden must first solidify its institutional position by conducting market research to better understand how it is perceived in the marketplace. Then it must shape its position and implement a strategy to communicate it. A strong brand backed by outstanding programs is the best way to continue to draw record numbers of visitors to the Garden.

Exhibitions draw the vast majority of the Garden’s visitors. Long-range planning of exhibitions will ensure that they are compelling, popular, and financially successful. In particular, summer art exhibitions will be developed to attract a new audience to the Garden. Supported by significant increases in marketing and advertising, exhibitions will be the main driver of visitation.

New markets will be tapped more aggressively in the coming plan. The potential of group sales and tourism is considerable and has just begun to be explored. The visitor experience will be enhanced with new initiatives in public programming, signage, and interpretation. Conversion of an existing structure at the Leon Levy Visitor Center into a Public Programs Facility will make these possible. A new off-site parking garage will be constructed to better accommodate the increased number of visitors. Interpretation will be enhanced throughout the Garden during the plan.

The Garden’s existing businesses—admissions and parking, retail, membership, and food service—will provide the main portion of earned income over the plan period. However, it is the off-site, non-visitation related businesses that will experience the most dramatic growth. The Garden will invest in licensing and E-retail to leverage its brand, collections, and experience. Gross revenue from these two sources will more than quadruple over the life of the plan.

**Management and Infrastructure**

Provide the managerial staff, technical support, and physical infrastructure necessary to advance our programmatic mission.

It is the responsibility of the departments comprising the Management and Infrastructure area to provide support and resources to enable the Program departments to achieve the initiatives laid out in this plan. In concert, they determine efficient, effective solutions to advance the Garden’s mission. This plan envisions a considerable increase in programmatic activity. Generating contributed revenue, creating information systems, monitoring the allocation of resources, and managing a growing number of facilities, personnel, and visitors are just some of the challenges that the Management and Infrastructure departments will face.

Planned initiatives in each of the departments—Government and Community Relations, Information Technology, Development, Operations, Security, Administration, and Finance—address these challenges making use of innovations and process improvements. Information Technology will require substantial funding to remain current and support robust and evolving programs. Development will add staff and Government and Community Relations will strategically promote the Garden’s programs to ensure that the necessary funding is in place to carry out the plan initiatives. Operations and Security will ramp up to accommodate increased visitation and facilities, especially the new parking garage. The Garden’s sustainability imperative will be advanced with leadership from Horticulture and Operations, which have already begun making the Garden much more energy efficient and which will continue throughout the plan. Administration will assist in recruiting, training, and retaining the additional staff needed and find the space to house them, and Finance will track and monitor resources to enable the initiatives to be realized while ensuring that the budget remains in balance.
International Plant Science Center

Priorities and Strategic Investments 2009–2015

Priority 1: Contribute to a Global Inventory of Plants

Priority 2: Create a Conservation Office

Priority 3: Maintain Collections and Databases as a Global Research Resource

Priority 4: Train the Next Generation of Environmental Leaders

Priority 5: Build the Science Faculty to Achieve These Goals

Build Endowment

Summary Statement
The New York Botanical Garden’s plant science research programs are more relevant to pressing societal needs now, at the outset of the third strategic plan, than ever before. Plants have always been essential for nearly every aspect of human existence, including food, medicine, clothing, shelter, and the oxygen we breathe. Forests and other natural biomes form the matrix in which all other terrestrial life exists. They help mediate our climate and protect watersheds that provide us with clean water. Biodiversity, the sum total of Earth’s species, is the critical resource that comprises our library of food plants, which inspired many of today’s synthesized medicines, and that supply the compounds in herbal medicines used by a majority of the developing world’s population.

In a world of rapid global change, the pressure of a burgeoning human population is driving development, deforestation, and degradation of natural habitats. Many habitats are threatened by both invasive plant species and changing climate. Base-line information about plants is essential to address and resolve these problems. Governments and private entities cannot make rational environmental decisions in the absence of the requisite scientific information. Over the next seven years the Garden will build its scientific resources to address the crucial societal questions in plant science and apply this information to protect and improve the quality of human life.

Few institutions are so positioned to contribute to this effort as the Garden. Its unique combination of strengths includes a long-standing research tradition in the field and the laboratory and the peerless resources of the William and Lynda Steere Herbarium, C. V. Starr Virtual Herbarium, international programs, the Lewis B. and Dorothy Cullman Program for Molecular Systematics Studies, and the Genomics Program. The Steere Herbarium, containing 7.3 million specimens, is the richest source of information about plants in the New World. Conservation organizations and policy makers not only need this data to inform their work, they often need the data interpreted to understand its relevance. Through the Starr Virtual Herbarium, the Garden is able to disseminate the data to a global audience unreachable a few years ago.

Garden scientists have been conducting international research for more than a century, and the relationships and partnerships they have developed establish the Garden as a nexus in the international research and conservation community. The Cullman Program for Molecular Systematics Studies and the Genomics Program enhance the Garden’s ability to document and understand the plant world, a fundamental requirement for conservation and climate change analysis. Together these resources support a wide range of research and conservation efforts, provide the Garden with unparalleled ability to address broad questions about botanical diversity, and enable it to contribute to the worldwide effort to address environmental change.

Previous strategic plans have built the infrastructure of a leading botanical science institution of the 21st century: the construction of the Steere Herbarium and the Pfizer Plant Research Laboratory; the renovation of the LuEsther T.
Relevance and impact will also be enhanced through a sharper focus for the Garden’s programs, specifically on the priorities identified for this plan:

- **Priority 1: Contribute to a Global Inventory of Plants**
- **Priority 2: Create a Conservation Office**
- **Priority 3: Maintain the Garden’s Collections and Databases as a Global Research Resource**
- **Priority 4: Train the Next Generation of Environmental Leaders**
- **Priority 5: Build the Science Faculty to Achieve These Goals**

Additionally, efforts will be coordinated and partnerships explored within the institution and outside. The ultimate aim is to fill out the structure that was built in recent years, fulfilling the potential suggested by the distinguished tradition of science research at the Garden and satisfying the pressing need for scientific expertise at a crucial time.

**Priority 1: Contribute to a Global Inventory of Plants**

It is easy to understand that wild species cannot be conserved effectively unless they have first been discovered, named, and then classified. In a world where growing economies and evolving political systems are driving environmental change often leading to destruction and degradation of natural areas, to be effective stewards of Earth’s plants governments and private entities need basic knowledge about them. About 250,000 species of plants have been discovered and classified with an additional perhaps 25% or more still to be discovered.

The communities of biologists who study mammals, birds, reptiles, and amphibians have completed at least first drafts of comprehensive classifications that can serve as roadmaps to define future research and conservation priorities. The botanical community needs further work to achieve a similar level of knowledge and complete a first draft of a comprehensive inventory of all plant and fungal species. This is an urgent task for botanical science in the 21st century, and one needed to meet the basic targets of the Global Strategy for Plant Conservation adopted by the United Nations. The Garden will contribute to this effort by: maintaining excellence in core competencies of field biology, economic botany, molecular systematics, and plant genomics; intensifying and expanding field work in targeted, high-priority areas; and doing our part in realizing the assembly of the full Tree of Life.

The present level of knowledge of plant groups is not even. Many large families and genera remain taxonomically confusing, and their size makes them difficult research projects. In addition, many places in the tropics remain essentially unexplored. Building on the Garden’s strength in fieldwork and traditional systematics will position the science programs to explore the last frontiers of the natural world and to tackle the systematics of the most complex plant groups. This will ultimately lead to an effort to create a stable classification of plants that can improve mankind’s understanding of the botanical world and help guide collective efforts to conserve the full range of plant diversity.

Five geographic areas have been chosen for focus by the Garden during the plan: the Caribbean; Amazon Basin; Atlantic Forests of Brazil, Micronesia; and North America. These locations were chosen because of the Garden’s experience in the regions, strength in its collections, deep staff expertise, and strong collaborative connections. The program emphasis in each geographic area has been tailored to the needs of that location.

In the Caribbean the Garden will undertake a broad, regional overview that will result in a synthesis of the flora for the entire West Indies—across many islands—producing information needed to advise and direct conservation in an area where only a small percentage of original forest cover remains.

The Atlantic Forests of Brazil have exceptionally high diversity and endemism but also face exceptional threat and only about 6% of the original forest cover remains, making them one of the New World’s most critical hotspots. The Garden will study those forests that remain unexplored, identify the most important for conservation of the region’s biodiversity, and build arguments for their protection and sustainable management.

The Amazon Basin is also an area of high plant diversity and development across the region. It spans nine countries and threatens the fabric of an ecosystem upon which all of South America depends for its climatic stability. The Garden will work with partners to reduce the rate of deforestation in order to protect the delicate balance of this critical ecosystem.

Like most island archipelagos, the islands of the Pacific have been thoroughly studied one at a time so the Garden is working with the National Tropical Botanical Garden and the Smithsonian Institution to harmonize our understanding of the plants throughout the Pacific region. Discovering new species and protecting plants will be primary aims in all these areas.

In North America, the Garden will build on its tradition of research and scholarship in the intermountain regions of the west, revise its iconic publication, Gleason and Cronquist’s *Flora of the Northeastern United States*, and compile data to inform efforts aimed at conserving endangered plant species and controlling invasive species.
A better understanding of how plants are related to one another is required for the completion of the global inventory of plants. Today, DNA sequence data enable Garden scientists to develop classifications that are robust and increasingly stable, providing the knowledge to assemble the Tree of Life. The Cullman Program for Molecular Systematics Studies is using DNA barcodes as species-specific labels that may revolutionize how plants are identified. The Garden will identify the appropriate genes for barcoding and significantly build the database of DNA barcodes in the next seven years. One of the “Leading Laboratories” in the Plant’s Initiative of the Consortium for the Barcode of Life, the Garden has been invited to play the coordinating role in the next phase of the plants initiative. The addition of a bioinformatics-focused molecular biologist will enable the Garden to identify incomplete plant materials, facilitate identification by non-specialists, and result in practical applications in environmental assessment and product verification.

Evolutionary genomics, functional genomics, and gene discovery provide powerful tools to resolve the remaining questions about plant relationships. For example, research into whether the development of a plant’s resistance to insects is genetic or environmental can contribute to an increased understanding of how plants will adapt to a rapidly changing climate. The Garden will build its strength in all these genomics areas during the plan and make its programs increasingly relevant to pressing environmental issues.

**Priority 2: Create a Conservation Office**

The Science programs generate information that is critical to informing efforts to conserve the world’s biodiversity. The Herbarium and Virtual Herbarium contain the information to identify plants at risk of extinction and places critical for their continued preservation. The Garden’s international relationships with collaborating institutions and local communities provide the connections needed to implement an effective program that aims to protect the full range of biodiversity and the traditional ecological knowledge associated with the use and management. Benchmarking revealed that most natural history institutions are developing conservation programs to extend the impact of their research efforts. These programs address the important issues cultures face such as deforestation, species at risk of extinction, and sustainable use of natural resources. A new Conservation Office will collect, analyze, and use information about the world’s plants and build partnerships with governments, local communities, and other conservation organizations to ensure for future generations the preservation of plant diversity, ecosystems, and traditional knowledge of the uses of plants. The impact will be measured by the creation of new protected areas, in threatened plant diversity, ecosystems, and traditional knowledge of the uses of plants. The Garden will identify the appropriate genes for barcoding and significantly build the database of DNA barcodes in the next seven years. One of the “Leading Laboratories” in the Plant’s Initiative of the Consortium for the Barcode of Life, the Garden has been invited to play the coordinating role in the next phase of the plants initiative. The addition of a bioinformatics-focused molecular biologist will enable the Garden to identify incomplete plant materials, facilitate identification by non-specialists, and result in practical applications in environmental assessment and product verification.

Conservation is not a new effort at the Garden. The majority of its scientists are involved in conservation. They collect data that inform the conservation process and play advisory roles in conservation efforts. Some actively implement conservation initiatives by building on their relationships with local communities in many parts of the world. The Garden’s contribution to assembling the global inventory of plants is one of the foundations of this conservation work. As one of the world’s leading centers for botanical fieldwork and repository for the specimens collected, Garden research identifies new species, defines plant distributions, and analyzes how they are likely to change. Recent Garden research informed management of natural resources in the forests of Atlantic Brazil, resulted in expansion of protected areas in the Bolivian Amazon, and produced a comprehensive checklist of threatened plants for the Brazilian state of Acre. Garden curators are active members of the World Conservation Union’s working groups involved in the study of particular groups of plants or geographical regions. The Garden is also a partner of the Center for Plant Conservation which studies the endangered species of plants in the United States.

The conservation program will comprise a combination of dedicated staff working full-time on Conservation Office activities, associated Garden faculty from other parts of Science already involved with conservation efforts, and research associates from partner institutions. Building on the ongoing efforts in the Institutes for Systematic and Economic Botany, the primary programmatic areas of the Conservation Office will be:

1. Conservation Field Studies
2. Data Analysis/Plants and Places at Risk Program
3. Community-Based Conservation

The goal of the Conservation Field Studies program will be to inventory environments of high conservation priority, including:

1. rapid field assessments of habitats that contain high diversity or endemism, have high concentrations of threatened species, are the last remaining parcels of their type, face imminent threat and/or for which there is not enough baseline data to support conservation assessments, and
2. discovery and/or relocation of populations of extremely rare or threatened species.

The Data Analysis/Plants and Places at Risk Program will make the prodigious amounts of research currently generated by Garden scientists many times more useful. A strategic way to focus the Garden’s conservation efforts, the program will identify plants that have the greatest risk of extinction and the places that have most of these plants. The locality information associated with specimen data can be used to estimate the conservation status of plant species, and the size of the Garden’s collections make the Herbarium an invaluable resource to support these efforts. The Garden’s Geographic Information Service (GIS) lab is critical as well and will be expanded during the plan.
Data that inform research and conservation efforts can only be effective if used to impact activities on a local level working in close association with local communities. The Garden will target community-based conservation programs for those habitats that are deemed critical for the conservation of threatened species and at great risk for further degradation or destruction. Efforts will be made to work with local communities to develop plans by which they will become stewards for their natural resources, using them in sustainable ways that both improve the quality of their lives and preserve the biological diversity in the region.

Implementing an effective conservation program will rely heavily upon developing the correct strategic alliances with appropriate partners at the international, national, and local levels. Efforts will be coordinated with appropriate partners to analyze data and implement conservation efforts in the Garden’s priority regions. The program will address issues relevant to a number of important international agendas:

The Global Strategy for Plant Conservation (GSPC) was outlined by the Conference of the Parties to the Convention on Biological Diversity in fiscal 2002 and it aims to identify the primary data needed to understand biodiversity and develop the infrastructure critical for its conservation. The existing and planned activities of the Garden are aimed at all of the GSPC primary objectives including understanding, documenting, conserving, and promoting plant diversity and using plant diversity sustainably.

The World Conservation Union (IUCN), through its Species Survival Commission (SSC), has assessed the conservation status of species for more than four decades, producing the IUCN Red Data Book, a point of reference for making informed conservation decisions. The Herbarium and the Virtual Herbarium contain the basic data that are needed to complete the Red List assignments. Additionally, the Garden's state-of-the-art GIS lab will support geographic analysis of data from floristic and monographic research projects and will offer training in methodology for analysis of spatial data. The global database of Red Listed species is a powerful tool for identifying areas with the greatest priority for protection, and the data from the science programs at the Garden will significantly contribute to this effort.

The Alliance for Zero Extinction (AZE) is a global initiative of biodiversity conservation organizations that aims to prevent extinctions by identifying and safeguarding key sites where species are in imminent danger of disappearing. In the plant world only conifers have been included in their assessments so far. The Garden will help expand their coverage to include more taxa in peril.

Identification of priority conservation areas is a primary goal of the Critical Ecosystem Partnership Fund, a consortium managed by Conservation International. The Garden is well positioned to provide them plant data from several regions of the world.

Conservation advocacy organizations such as the World Wildlife Fund, Conservation International, World Conservation Union, and the Wildlife Conservation Society need authoritative information on the geographical occurrence of plant species yet do not maintain or have direct access to herbaria or faculties of plant scientists. The Garden will play an important role, analyzing plant distribution data to determine which species are at greatest risk of extinction, to identify those regions where the greatest concentrations of threatened species occur. Using this information to identify conservation priorities and inform governments and other implementing agencies will be an important contribution the Garden can make to meet the challenge of declining biodiversity.

Plants sustain all life, including human life. Plant information is critical to conservation. The scientific expertise of the Garden’s research staff and the resources of the Herbarium, Library, and Virtual Herbarium uniquely position the Garden to identify plants at greatest risk, design programs to prevent their extinction, and otherwise play an important role in the implementation of GSPC goals.

Priority 3: Maintain the Garden’s Collections and Databases as a Global Research Resource

The Garden’s collections, both specimens and electronic data, will be more widely consulted and have greater impact in the world if they 1.) continue to grow and maintain the position of one of the largest in the world; and 2.) are made more accessible and useful. The Herbarium is a collection of 7.3 million specimens of dried plants and fungi. It is among the four largest herbaria in the world, and among the most heavily used herbaria for scientific research. Increasingly these vast resources are being made available to a wider audience through the creation of the Virtual Herbarium, which to date contains information from 1 million specimens. This specimen data is the primary source of information about the world’s vegetation, past and present, making the Herbarium crucial to the research and training needed to document and protect the world’s biodiversity. Good scholarship in biodiversity research, as in any field of study, requires continual reference to primary data sources.

The field research that enabled the growth of the Herbarium is a cornerstone of the next seven-year plan. This is increasingly important in a time of rapid global change. With perhaps as many as a quarter of the world’s plant species undiscovered, they cannot be conserved if they are not known to exist, or if they have not been named and studied. Knowledge of the world’s plants is very uneven, and the majority of those that remain to be discovered are concentrated in a modest number of places, mostly in the tropics, and often in regions that are threatened with deforestation. In many of these places, plant species are being lost before they can be discovered. The Garden’s targeted five high-
priority areas, the Caribbean, Amazon Basin, Atlantic Forests of Brazil, Micronesia, and North America, and the international field offices that are established in these places will enable it to improve the productivity of the fieldwork, hiring local staff as needed. The Garden will create a Plant Explorer’s Fund that will 1.) complete botanical inventories of the most poorly known parts of the world that are priority areas for the completion of a global plant checklist; 2.) inventory those regions that face imminent threat of destruction or degradation; 3.) provide contract inventory services for those organizations that need information on natural resources, but do not have the capacity to generate it for themselves; and 4.) build the Herbarium as a resource for scientific research. In addition, geographic coordination of acquisition in the Garden’s specimen exchange program will be important to growing a collection that is truly representative of the world’s plant diversity.

In the midst of a global renaissance of information sharing, conversion of all research and collections at the Garden to electronic format is a top priority. The nature of research is changing from a focus on the individual scientist working alone, to teams of scientists working on major projects to networked individual scientists collaborating on efforts to address particular research problems. As cyber-infrastructure enables researchers to work collectively and efficiently in a distributed environment, they will seek the raw data for their work electronically as well. Such availability of digital resources has begun and will continue to multiply research productivity many times over in terms of time, accuracy, and innovative approaches to problem solving.

Review of the technology initiatives undertaken by sister institutions in this area, has shown that although the Garden has made tremendous strides, it must accelerate its development efforts or it will fall behind in a rapidly evolving informatics world. Most important natural history collections and libraries have already implemented or are planning digitization efforts. Many university and public libraries have developed electronic initiatives far beyond the current scope of the Garden’s. While the Garden is a leader in the amount of Herbarium information it has digitized, it risks falling behind if it does not adapt to a system that facilitates seamless navigation among disparate types of information about plants, especially research literature and new publications, allowing its wealth of resources to be accessible for research and analysis digitally.

Further building on the investment in the Virtual Herbarium, the Digital Plant Research Center will be created. As envisioned, the Digital Plant Research Center is a system of interconnected digital resources to include the wide range of research endeavors of the Garden. It will be chiefly made up of the collections of the Virtual Herbarium and the Mertz Library augmented by other resources throughout Science and Horticulture. The components will include digitized collections (herbarium, library, laboratory, and living) that will be linked to relevant literature, the Garden’s scientists’ research, gene sequences, images, and ethnobotanical information. The goal of the Digital Plant Research Center is to present information about plant and fungal diversity to a wide audience for the purpose of furthering research and increasing biodiversity literacy among students and the general public. The vehicle for disseminating this research will be Internet based.

Current users of the Garden’s online science information cover a broad swath, from traditional systematists to conservation biologists to homeland security officials here and abroad to international agencies and high school students. The addition of an interpretive layer will enable a broader circle of users to make use of the raw data, expanding research possibilities still further. Analytical and presentation tools will render the data more useful and make possible effective communication of the results.

Developing the Digital Plant Research Center is a Herculean task given the 7.3 million specimens, over 1 million cataloged items in the Mertz Library, and the amount of research created by the institution’s scientists going back many years. The Garden’s view of the task by necessity must be long term. Development will be pursued on two tracks simultaneously: 1.) prioritized data entry; geo-referencing of specimen data, and digitization of specimens and literature; and 2.) the development of access and integration protocols that strengthen the interrelationships among the Garden’s rich sources of data.

The Garden has identified particular databasing and digitization projects that can be undertaken in this plan period. Priorities include projects supporting the Garden’s current research such as in the Caribbean, and advancing the Garden’s conservation emphasis such as geo-referencing all the specimens in the database. The investment in KE EMu, a commercial software product purchased in the last plan, is a solid platform upon which the Virtual Herbarium can grow. The Mertz Library will need to procure Electronic Resource Management Systems (ERMS), to link and manage its resources. However, with the exception of adding significantly to the Garden’s storage capacity, the major portion of the investment throughout the plan will not be in hardware, but rather in software tools, information architecture, and the personnel to digitize huge amounts of data.

Priority 4: Train the Next Generation of Environmental Leaders

The world’s need for biodiversity specialists has become increasingly urgent for the future of our program in many ways. The need is especially acute in the developing world with fewer than 10% of the world’s scientists, a force inadequate to provide advice on sustainable use and management of natural resources. Training graduate students is one of the most important investments the Garden can make. The Garden’s Graduate Studies Program is one of the few that provides training across the full spectrum from specimen and field-based research to modern molecular biology to meet this need. Through the formal graduate training program, the postdoctoral program, student exchange with other universities, and the training that Garden scientists conduct in the countries where they work, the Garden helps to grow the next generation of environmental leaders. Maintaining a strong graduate program is also a key component of sustained scientific excellence at the Garden because students
provide its scientists with a constant infusion of new ideas and help them stay current with new methods.

The Graduate Studies Program has been an important part of the Garden's scientific programs since 1896, when an agreement was established between the Garden and Columbia University to provide joint training for Ph.D. students in botany. Last year 40 students conducted their graduate research at the Garden. The Garden's list of alumni includes many influential botanists over the last century, and its graduates serve many roles in the global scientific community.

Formal partnerships with five universities in the New York region provide a variety of very different experiences, each relevant to different subjects in plant science. Of the 40 students that are enrolled in these programs, the Garden has direct fellowship support for just four of them. Fellowship support will be increased over the plan for existing fellowships, and two fellowships from new universities will be added. Competitive graduate stipends, tuition support, and a complete financial package are necessary to attract the best and the brightest. The Garden will also expand student exchange opportunities with universities and collaborating institutions in countries where its scientists work. Fewer than 10% of the world's scientists work in tropical countries that have 75% of the world's biodiversity. They cannot be expected to do a better job managing their natural resources without an adequate number of scientists to advise the decision makers who need to balance the need for economic growth with environmental protection. Lastly, working with Education, the Garden will develop better ways to include high school students and undergraduate interns in its research programs.

Priority 5: Build the Science Faculty to Achieve These Goals

The competitive strategic analysis revealed that although the Garden has greater breadth in its range of science programs than any other botanical garden, it has fewer scientists that the other two to three top institutions in the world. While the tradition of scientific research is strong at the Garden, there has been much development of new areas such as molecular studies in recent years. A foothold has been established in these areas and considerable progress made. In the coming plan period, consolidation of efforts will be possible with strategic additions to science staff. The core systematic research program will be strengthened with the addition of six curators and a post-doc during the plan, two curators will be added in the Pfizer Laboratory, and the Conservation Office will be established with four new staff members. The addition of the Dean of Science and an administrative assistant brings the total new staff adds in Science to 15. The Digital Plant Research Center will be created with the help of eight project-based staff. This investment will enable the Garden to build on its history and resources and to continue its current momentum at a time when it is most needed.

To accommodate these increases to staff as well as to more efficiently utilize existing space, a scientific staff headquarters will be created on the fourth floor of the Library building. An important part of the Garden's designation as a National Historic Landmark, the 1901 Library building was originally used for public education and botanical science research. In the beginning of the last plan, the herbarium specimens, which originally occupied much of the space, were moved to the newly created International Plant Science Center, and a first phase of renovations took place. In this first phase, the Library public and administrative space was beautifully renovated; a new Digital Imaging Center was created; and two public exhibition spaces were added, one featuring the Garden's scientific research and the other for Library exhibitions.

Phase two envisions the creation of a Scientific staff headquarters where all science personnel (except those housed in the Pfizer Laboratory) will be grouped together, facilitating collaborative work to advance the science research program of the institution. The fourth floor will house the Institute of Systematic Botany, Institute of Economic Botany, and Conservation Office. Many of the Herbarium staff will be located here as well. A new cold room will be built to better enable the Herbarium to efficiently manage and traffic the enormous amount of specimens coming in and going out of the facility.

Build Endowment

With the support of endowment funding, implementation of the operating initiatives of the plan can be assured. Much important research in Science has been accomplished with such resources. In particular, endowed curatorialships are prestigious and useful in attracting and retaining outstanding staff. This will be especially important in this plan given the large number of curatorial staff to be added. Endowment support is also sought in Science for the following:

- Institute of Systematic Botany
- Institute of Economic Botany
- Institute of Molecular Plant Studies
- Graduate Studies Program
- Conservation Office
- Digital Plant Research Center

Summary Statement

The longstanding tradition and heritage of scientific research at The New York Botanical Garden provides a solid foundation from which to advance in the next seven years. The combination of vast institutional resources and the infrastructure that has been developed in Science over the last two plans ensures the Garden's success in this endeavor. This plan will mark the Garden as a catalyst for change in a world much in need of such committed actors. By contributing to a global inventory of plants, creating a Conservation Office, maintaining the Garden's collections and databases as a global resource, and training the next generation of environmental leaders, the Garden will demonstrate its commitment and live up to its tradition.
Horticulture and Living Collections

Priorities and Strategic Investments 2009–2015

<table>
<thead>
<tr>
<th>Priority</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Transform Azalea Way into an Azalea Garden</td>
</tr>
<tr>
<td>2</td>
<td>Create a New Native Plant Garden</td>
</tr>
<tr>
<td>3</td>
<td>Develop a New View of the Rock Garden</td>
</tr>
<tr>
<td>4</td>
<td>Link Daffodil Valley to the &quot;Heart of the Garden&quot;</td>
</tr>
<tr>
<td>5</td>
<td>Create a Water Garden at Twin Lakes</td>
</tr>
<tr>
<td>6</td>
<td>Restore the Forest and Incorporate it into the Visitor Experience</td>
</tr>
<tr>
<td>7</td>
<td>Improve the Mosholu Gate District</td>
</tr>
<tr>
<td>8</td>
<td>Create a Long-term Landscape Master Plan for the Garden</td>
</tr>
</tbody>
</table>

Build Public Education, Display, and Outreach Programs

<table>
<thead>
<tr>
<th>Priority</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Develop “Green Horticulture” and Climate Change Initiatives</td>
</tr>
<tr>
<td>2</td>
<td>Create Captivating Exhibitions</td>
</tr>
<tr>
<td>3</td>
<td>Enhance Living Collections Garden Wide</td>
</tr>
<tr>
<td>4</td>
<td>Build Public Education Programs in Collections and Displays</td>
</tr>
<tr>
<td>5</td>
<td>Expand Signage and Interpretation</td>
</tr>
<tr>
<td>6</td>
<td>Build Bronx Green-Up</td>
</tr>
</tbody>
</table>

Build Endowment

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summary Statement</td>
<td></td>
</tr>
</tbody>
</table>

Carlo A. Balistrieri
Characterized as “America’s Garden” by noted plantsman Dan Hinkley, The New York Botanical Garden delights and educates its visitors through the beauty of its landscape and the diversity and richness of its horticultural and educational programs. Over more than a century, the Garden has built a mosaic of curated living collections, glorious gardens, and great architecture across its singularly beautiful 250-acre National Historic Landmark landscape. The natural landscape and designed features serve broad scientific and educational programs, from DNA barcoding research to home gardening demonstrations, which connect people to plants and the environment. Increasingly the public has come to appreciate the Garden for the outstanding quality of its seasonal exhibitions, which draw more and more visitors each year. All of these assets and accomplishments render The New York Botanical Garden not just “America’s Garden,” but one of the leading botanical gardens in the world.

Over the course of the past decade the Garden has experienced a renaissance, reaping the benefits of 14 years of strategic planning. Most visibly and importantly the Enid A. Haupt Conservatory was completely restored in 1997, a four-year, $25 million project. The Everett Children’s Adventure Garden opened in 1998, the largest project of its kind in a botanical garden. With hundreds of rare and unusual conifer varieties planted throughout a 15-acre landscape of exposed rock and mature trees, the opening of the Benenson Ornamental Conifers in 2004 set a new standard for hardy tree collections. In 2005 the Garden made significant strides in its capacity to care for its greenhouse collections through the addition of the Nolen Greenhouses for Living Collections, the most advanced production greenhouse in any botanical garden in the world. The Garden’s stewardship of its outdoor collections and landscape improved significantly with the completion of the state-of-the-art, Garden-wide irrigation system in 2007. Increases to the Horticulture staff, including managers, curators, and hands-on horticulturists, made in the last two plans, enabled the Garden to improve the quality of care for the landscape and enhance public programming.

The competitive strategic analysis conducted at the outset of the planning process revealed that the character of the Garden’s landscape, diversity of its collections, and breadth of its programs are unparalleled. The site for the Garden was chosen in 1895 because of the richness of the natural landscape, including the Forest and the Bronx River. No other large botanical garden can claim such natural wealth. The Garden’s singular mix of designed gardens, curated living collections, and compelling horticultural displays set the Garden apart from its sister institutions. With five exhibitions each year, the Garden’s program of horticultural displays is more ambitious than that of any other botanical garden. However in other areas the Garden lags behind its peers. A significant percentage of the Garden’s historic landscape remains unrestored and does not currently serve the institution’s mission as well as it could. The landscape, gardens, and living collections could be better utilized to serve the Garden’s public education goals. The level of hands-on staff per acre is the lowest of all peer institutions benchmarked.
After months of planning across the entire division, the Garden has arrived at two fundamental goals for Horticulture for 2009–2015:

1. Reinvigorate the “Heart of the Garden” by expanding the impact of the Garden’s historic landscape, gardens, and living collections and creating a long-term landscape master plan; and

2. Build innovative public education, display, and outreach programs that showcase the beauty and wonder of plants and educate a broad audience about the essential importance of plants to life on Earth.

Accomplishing these goals will enable the Garden to build on past investments, address issues raised in benchmarking, and continually seek excellence in horticultural display and education. The Garden of the future will echo the rich tradition of the past while setting forth new and enhanced ways of creating beautiful gardens in a sustainable way and engaging the public in the appreciation of plants.

During previous plans, the Garden repaired its infrastructure, added new programs and facilities, and restored large swaths of the landscape around the Enid A. Haupt Conservatory and in the southeastern portion of the Garden. However, the historic gardens, collections, and landscapes in the center of the Garden remained unrestored. Restoration and enhancement of the “Heart of the Garden” is the major goal of this plan.

A variety of natural landscapes and naturalistic gardens form the “Heart of the Garden,” including some of the most important and historic elements of the Garden’s National Historic Landmark landscape. Together these gardens and landscapes cover approximately 85 acres and include a mix of designed gardens, diverse living collections, and stunning natural features. Restored and reinvigorated, the “Heart of the Garden” will be a horticultural showcase with diverse living collections and designed features that appeal to new audiences and provide new opportunities for public education programs that underscore the Garden’s commitment to conservation of plants and the environment. To inform this process, Olin Partnership will develop a Landscape Master Plan that integrates the diverse gardens and landscapes that form the “Heart of the Garden” and provides a framework for their ongoing stewardship and programmatic development.

Eight priorities have emerged that when achieved will together transform the “Heart of the Garden”:

Priority 1: Transform Azalea Way into an Azalea Garden
Priority 2: Create a New Native Plant Garden
Priority 3: Develop a New View of the Rock Garden
Priority 4: Link Daffodil Valley to the “Heart of the Garden”
Priority 5: Create a Water Garden at Twin Lakes
Priority 6: Restore the Forest and Incorporate it into the Visitor Experience
Priority 7: Improve the Mosholu Gate District
Priority 8: Create a Long-term Landscape Master Plan for the Garden

Priority 1: Transform Azalea Way into an Azalea Garden

For nearly a century Azalea Way has connected the Conservatory precinct to the rest of the Garden. As the primary link between the Leon Levy Visitor Center and the Peggy Rockefeller Rose Garden and the Benenson Ornamental Conifers, Azalea Way is traveled by hundreds of thousands of visitors each year. However, as its name implies, Azalea Way is a road, not a destination. A primary goal of this plan is to transform Azalea Way into an Azalea Garden that showcases the beauty and diversity of azaleas, adds a sense of intimacy and human scale to the Garden, and celebrates the unique character of the Garden’s National Historic Landmark landscape.

The 10-acre Azalea Garden will feature an encyclopedic collection of the world’s azaleas planted along a broad hillside punctuated by rock outcrops and shaded by mature native trees. Paths will meander along rocky ridges and through broad sweeps of azaleas leading to overlooks that take advantage of the long vistas across the site—a true rarity in the well-forested Garden. New seating areas and signage will provide opportunities for visitors to linger among the azaleas and learn about these fascinating and beautiful plants. New interpretation will introduce visitors to the biology and ecology of this important plant group while providing information about how to grow azaleas and rhododendrons in home gardens.

Given the diversity of growing conditions across the site, the Azalea Garden will be a reference collection of azaleas and rhododendrons that thrive everywhere from low wet areas to dry ridge tops. Thousands of plants will be arranged both in large drifts across the broad hillside and as single specimens along paths and in display beds near overlooks and gathering places. The new collection will showcase more than 300 different species and horticultural varieties that will provide significant color from early spring through late summer. While the Azalea Garden will be a four-season destination, the combination of mass plantings and individual specimens will be especially appealing at the height of the azalea season in May.

Two new horticulturists and an intern will be added to the team of people who plant and maintain this stunning collection. No longer just a way of getting from here to there, the Azalea Garden will be a horticultural spectacle in the “Heart of the Garden,” a beautiful new garden that both complements and celebrates the larger landscape.
Priority 2: Create a New Native Plant Garden

The New York Botanical Garden has a long history of the study and display of plants native to northeastern North America. In 1896 founding director Nathaniel Lord Britton and board member Addison Brown published the Illustrated Flora of the Northern United States. In 1963 Garden scientists Henry Gleason and Arthur Cronquist published their Manual of Vascular Plants of Northeastern North America and Adjacent Canada, which is still the most widely used flora of the northeastern United States.

In the late 1940s a three-acre native plant garden was created to support the Garden’s ongoing research and to serve as an outdoor classroom for those interested in the study of native plants. This garden was expanded in the late 1960s and early 1970s with the addition of natural habitat vignettes designed to showcase a diversity of native plants in natural associations. Unfortunately, this design was horticulturally unsustainable and did not take full advantage of the site’s two greatest assets: the beauty of the natural landscape and the connection to the native Forest. Over time, the Native Plant Garden declined and by 2007 little remained of earlier plantings.

As a main element of Into the 21st Century, the Garden will create a new Native Plant Garden, one that celebrates the beauty and diversity of native plants. The new Native Plant Garden will allow the Garden to better serve the growing interest in native plants and conservation inspired by concerns about invasive species and climate change and to teach visitors how to use native plants in their own gardens. It will emphasize the connection to the Forest and highlight the Garden’s long tradition of studying and conserving native flora. This new garden will also provide the opportunity to teach people the role that native plants and ecosystems play in supporting birds and other wildlife.

The new Native Plant Garden will take advantage of diverse growing conditions, which range from sunny, wet meadow to dry, deep shade, to display a diversity of native plants combined beautifully through an integrated and holistic design. A low ridge that connects the new Native Plant Garden to the Forest provides the shady conditions necessary for the display of trillium, bloodroot, bluebells, and other spring ephemerals, producing a spectacle in early spring. This ridge opens up into a wet, sunny valley—perfect for moisture-loving summer stars such as Jerusalem artichoke, New York ironweed, and swamp mallow. The plantings will be designed with a contemporary flair that underscores the tremendous beauty of native American plants and creates a truly modern horticultural showcase.

A new entrance will provide a fitting introduction to this centrally located feature. New paths, stone walls, seating areas, and gathering places will create a unique sense of place that is both intimate and accommodating. Paths will lead visitors through the landscape and engage them with an array of native plants. New opportunities for education will be provided through interpretive signage and teaching areas. A new horticulturist and intern will assist in the stewardship of the new Native Plant Garden. Most importantly, the new Native Plant Garden will be stunningly beautiful: a true celebration of the allure of our native flora.

Priority 3: Develop a New View of the Rock Garden

The Rock Garden stands at the apogee of horticultural excellence at the Garden and is considered one of its greatest jewels. It is quite simply the Garden’s most sophisticated garden. Created in the early 1930s by the legendary T. H. Everett, the Rock Garden showcases thousands of meticulously maintained alpine, dry land, and woodland plants set amongst carefully placed rocks and soothing water features. The Rock Garden is the most diverse of all the outdoor gardens and displays at The New York Botanical Garden, with nearly 2,500 different varieties of plants in a 3.5-acre landscape.

For all its beauty, the Rock Garden does suffer from inadequacies. It has no signage or interpretation. Its gravel paths, while charming, cannot accommodate large groups, are not accessible to wheelchairs and are inaccessible to all during the winter months. Nearly half of the acreage allocated to the garden is unused. Some of the older tree and shrub plantings are out of scale with the landscape and need replacement or rejuvenation. The gardener’s shed, pump house, and other infrastructure are aging and need updating. After 75 years, it is time to restore this precious garden.

A new entrance, new paths, new gathering places, updated infrastructure, and expanded plantings that honor Everett’s original design will make the Rock Garden feel both venerable and brand new at the same time. The entrance will be relocated to provide a more inspiring and welcoming introduction. The gravel paths will be regraded, expanded, and resurfaced so that the garden can accommodate more visitors and remain open year-round. The gardener’s shed and pump house will be replaced and relocated. Abandoned irrigation lines will be removed. The cascade, a centerpiece of T. H. Everett’s design, will be upgraded to be more water and energy efficient.

Planted in the Rock Garden will be updated. Rare and unusual woodland plants will be added to shady portions of the garden that are currently inaccessible and unplanted. New plantings will be designed to increase both the appeal of the garden in all seasons and increase its overall diversity.

New signage and interpretation will allow visitors to better understand the intricacies of alpine and woodland plants. A full-time horticulturist and an intern will be added to the team of people who carefully tend the Rock Garden’s diverse plantings. Restored, the Rock Garden will be a year-round destination that highlights the beauty and diversity of rare alpine and woodland plants and celebrates the rich history and traditions of rock gardens.
Between Twin Lakes and the Rock Garden lies Daffodil Valley, a green glade shaded by towering trees and bordered by the native Forest. Daffodil Valley features one of the Garden's most fully realized educational displays: a systematic planting of the genus Narcissus with large drifts of daffodils planted according to the American Daffodil Society Horticultural Classification system that distinguishes among 13 divisions within the genus. Together these drifts include over 30,000 plants representing more than 250 varieties.

While the plantings are well developed, Daffodil Valley has a variety of shortcomings. The site is drained by ancient clay pipes that are prone to failure. There is little room along the path for both pedestrians and the tram, which regularly passes through the valley. While there are a few benches, there are no gathering places where groups of students can assemble to learn about daffodils. There is no permanent signage or interpretation, only the plant labels, which are placed in spring and removed after the daffodils have stopped flowering. The impenetrable rubble of an old road bed runs through the middle of the site and takes up invaluable planting space.

The Garden will repair infrastructure, add seating and gathering places, and create interpretive signage that will teach visitors about the biology of daffodils and the history of their cultivation. These new amenities will accommodate students and tour groups and reduce tram pedestrian conflicts. Drainage will be repaired and the old road bed will be removed, creating significant new areas for the planting of an expanded display of daffodils. Interpretation that describes the biology and ecology of daffodils and explains the layout of the plantings will be added. A new intern will assist Garden staff in their stewardship of this site. These improvements will make Daffodil Valley both an integral part of the “Heart of the Garden” and a wonderful destination itself.

Priority 5: Create a Water Garden at Twin Lakes

In 1905 the Garden created Twin Lakes by expanding a natural water feature adjacent to the Bronx River. For a few decades, Twin Lakes was an important destination for visitors. The uplands surrounding the lakes were planted with hundreds of rhododendrons. Pickerel weed, iris, and other native wetland plants flourished along the lake shores. A gazebo and rustic benches welcomed visitors throughout the year. Twin Lakes was an important educational and aesthetic feature of the Garden.

A century later, the lakes have become severely degraded. The gazebo and rustic benches are gone, and the service paths around the lakes are not suitable for pedestrians, making the lakes inaccessible to visitors. Runoff from nearby city streets has nearly filled the lakes with silt, creating the perfect environment for algal blooms and populations of lesser duckweed that obscure the lakes by early summer each year. Once teeming with native wetland plants that provided food and shelter for a diversity of fish, aquatic invertebrates, mammals, and aquatic birds, the lakes have become less hospitable for all life.

The Garden will transform Twin Lakes into a Water Garden that features native aquatic and upland plants, new paths and seating areas, and a rich educational program that teaches visitors about the role wetlands play in sustaining life. The creation of a Water Garden at the site of Twin Lakes will involve an integrated effort between restoration ecologists, engineers, and governmental agencies that control the adjacent roadways. The first phase of the restoration will include improvements to infrastructure with the goal of reducing the sediment and runoff that reaches the lakes. The second phase will involve dredging decades worth of muck from the lake bottoms. The final phase will include implementing a new design that highlights the great beauty and vibrant ecology of the lakes while improving access for all visitors and creating new opportunities for public education. A new path system will be installed, gathering places and seating areas will be created, aquatic plants will be added to the lakes, and the adjacent uplands will be restored and replanted. The Water Garden will include new interpretation that describes both the ecological services the lakes provide and the array of wildlife they support. Two new horticulturists and an intern will tend the Water Garden throughout the year. When complete, the Water Garden will be a highlight for all visitors to The New York Botanical Garden.

Priority 6: Restore the Forest and Incorporate it into the Visitor Experience

At the heart of The New York Botanical Garden lies the 50-acre, first-growth native Forest, the largest remnant of the mixed hardwood forest that once covered much of New York City. With its stands of centuries-old trees, the rapids of the Bronx River Gorge, and the diversity of wild plants and animals it sustains, the Forest was the primary reason the Garden was established on its current site in 1893. Today, the Forest is one of New York City's most important natural areas and a worldwide resource for those interested in studying the impacts of an urban environment and changing climate on forested ecosystems.

Over the past century, the Forest has served as a living laboratory and an outdoor classroom for generations of New Yorkers. Over that same time, significant anthropogenic disturbances, including invasive exotic plant and insect species, soil compaction, and air pollution, have seriously impacted the health of the Forest. In 2001 the Garden created the Forest Management Plan with the goal of preserving Forest health by mitigating these and other disturbances, reforesting with native species, maintaining trails, and facilitating educational and research programs. While the plan has been partially implemented using existing staff and volunteer groups, the Garden must significantly intensify its work in the Forest over the next seven years.

Over the course of the plan, the Garden will re-engineer and rebuild the Forest trails so that they provide safe access and are easier to maintain. The custom-built post and rail fence along the trails will be replaced with an off-the-shelf
product that will be more cost effective to maintain. Invasive species such as Amur corktree, Japanese knotweed, and garlic mustard will be removed and native species will be planted in their places. Many of these native species such as red, white, and black oak, pignut and mockernut hickory, silver maple, and hemlock will be propagated from seed collected in the Forest and grown to planting size in a new woody plant nursery established on site.

In addition to stepping up the management activities in the Forest, the Garden will also develop new programs for the Forest that incorporate the strengths of its Science and Education Divisions and make the Forest a center for education and research. New signage and interpretation will be created and installed to educate visitors about the essential importance of forests to life on Earth, and new programs for children, teachers, and adults will be established. Visitors and students will learn about the role forests play in mitigating the effects of climate change through flood control, temperature moderation, and carbon sequestration. Information will also be provided about individual species, informing visitors about the trees, understory plants, and animal life native to this area, the relationships between plants and animals that make an ecosystem work, and the threats to this delicate balance. Garden scientists will participate in new research in the Forest, including the creation of a natural history of the Forest that highlights the ecology of the plants, lichens, fungi, and animals that call the Forest home.

These initiatives require additional staff. A new Natural Resources Manager trained in ecological restoration and forest ecology will work with consultants, Garden staff, and volunteers to update and implement the Forest Management Plan. An urban forest research fellowship will provide funding for post docs or recent graduates of forestry schools to perform research in the Forest. Seasonal work crews will be hired to remove invasive species and do trail maintenance.

By intensifying its management of the Forest and building new research and educational programs, the Garden will take full advantage of the unique value of the Forest and fulfill its most fundamental stewardship responsibility. A restored and reinvigorated Forest will be more than just a miraculous natural area in the heart of New York City: it will be a local example of the Garden’s international commitment to the study and conservation of plants.

Priority 7: Improve the Mosholu Gate District

The Mosholu Gate is a major entrance to the Garden that serves an ever growing number of visitors who arrive by train, students in Continuing Education programs, staff, and service vehicles. When the new parking garage opens in 2009, the Mosholu Gate will be even more heavily used.

Unfortunately, the Mosholu Gate was not designed to accommodate all of its various uses and does not provide a fitting introduction to the Garden for visitors. To resolve the conflicts inherent in the site, the Garden will redesign the Mosholu Gate to better serve the Garden and its visitors. It will be reconfigured to create a clear separation between pedestrian and vehicle circulation, to better orient visitors when they arrive, and to create a clear connection to the Leon Levy Visitor Center. The Harding Laboratory, first seen when arriving at the Mosholu Gate, will be removed. At the same time, the Garden will work with the New York City Department of Parks and Recreation and other government agencies to make improvements to Kazimiroff Boulevard and the small park between the Botanical Garden station and the Mosholu Gate. This work will be done within the context of the Landscape Master Plan being developed by Olin Partnership to ensure incorporation of a long-term vision for the area.

Priority 8: Create a Long-term Landscape Master Plan for the Garden

Seven major landscape and garden restoration projects within seven years will demand careful coordination and oversight. To ensure that the Garden’s unique sense of place is preserved and expressed through all of these projects, the Garden will continue to work with Olin Partnership to create and refine a Landscape Master Plan that establishes a unified framework and defines the connections within the “Heart of the Garden.”

The landscape master planning process began in 2007 with an in-depth analysis of the Garden’s hydrology, ecology, infrastructure, maintenance schedules, and circulation patterns. Over the next seven years, the landscape master planning team will establish boundary lines, propose circulation patterns, and define a vocabulary of materials that will create a sense of unity between the diverse yet intimately related projects in the “Heart of the Garden.”

The Landscape Master Plan will also include a long-term plan for the growth and development of the Garden. It will define areas that can accommodate future programmatic growth but will also identify “sacred spaces” within the Garden to ensure that future growth does not endanger the essence of the Garden’s National Historic Landmark landscape. For the first time since Calvert Vaux, Nathaniel Britton, and John Brinley created the original plan for the Garden, there will be a long-term plan that highlights the natural landscape and balances infrastructure needs, current programs, and future growth.

The living collections, gardens, and displays of The New York Botanical Garden are the foundation of a wide variety of educational programs that serve students of all ages. Instructors in the Teacher Training program in the Everett Children’s Adventure Garden use plants to train New York City schoolteachers to teach children about science and the environment. Visitors to Kiku: The Art of the Japanese Chrysanthemum learn about the long tradition of training and displaying chrysanthemums through interpretive signs in the Enid A. Haupt Conservatory. Home gardening demonstrations in the Kenneth Roman Gazebo teach gardeners about plants and techniques they can use to create beautiful and sustainable home gardens.
The Horticulture staff of The New York Botanical Garden currently recycles all the green waste it generates during its stewardship of the Garden. The green waste is transformed into mulch, leaf mold, and compost. Unfortunately, due to significant problems with the infrastructure of the existing compost area, the Garden cannot produce the highest quality compost, topsoil, and other materials. A Compost Manager will be hired to develop and implement green materials recycling programs to promote plant health and reduce the use of chemical fertilizers and pesticides. The compost will be used in the production of compost tea, which has proven to be an effective alterna-

tive to chemical fertilizers. The use of compost and compost tea instead of inorganic fertilizers will translate into a significant reduction of greenhouse gas emissions each year. It will also provide a cost savings for the Garden.

The state-of-the-art Green Materials Recycling Center will allow the Garden to improve the quality of the mulch and topsoil it produces, thus reducing weed populations Garden wide. The reduction in weed populations will translate into a reduction in the use of herbicides in the Garden. The Green Materials Recycling Center will also be a center for public education about composting and sustainable horticulture. By creating such a facility, the Garden will both significantly reduce its own carbon footprint and establish a leadership position for sustainable horticulture among public gardens in North America.

Developing and Implementing “Green” Horticulture Initiatives
In addition to the creation of the new Green Materials Recycling Center, the Garden will pursue a number of other “green” horticulture initiatives. The installation of a sand filter and recycled water washdown pad in the Horticulture Operations Center will significantly reduce runoff of pollutants from the cleaning of the Garden’s horticulture equipment. The purchase of equipment that uses renewable or low carbon emissions power sources such as bio-diesel and electricity will reduce the carbon footprint of the Garden’s horticulture operations. The installation of a living machine in the Nolen Greenhouses will allow Garden horticulturists to recycle the nearly 2,000 gallons of water used in the Nolen Greenhouses each day. Together these initiatives will make the Garden a significantly greener place.

Achieving Institutional Sustainability
The Garden’s “Green” horticulture initiatives will be part of a larger institutional effort to become more sustainable in all of its operations and programs. The Garden will add a Sustainability and Climate Change Program Manager and a part-time research assistant to its staff to take the lead on introducing sustainable practices and protocols in all aspects of our lives is quite clear and individuals, organizations, and governments are moving quickly to reorganize and retool themselves for survival in a rapidly changing environment.

To address this issue, the Garden will work to become a more sustainable institution and to better use its landscape and living collections to inspire its visitors to become better stewards of the environment. A variety of new programs will be developed jointly by the Garden’s Science, Education, and Horticulture Divisions and will draw on all of the institution’s strengths.

The following priorities have been identified for public education in Horticulture over the plan period:

Priority 1: Develop “Green Horticulture” and Climate Change Initiatives
Priority 2: Create Captivating Exhibitions
Priority 3: Enhance Living Collections Garden Wide
Priority 4: Build Public Education Programs in Collections and Displays
Priority 5: Expand Signage and Interpretation
Priority 6: Build Bronx Green-Up

Priority 1: Develop “Green Horticulture” and Climate Change Initiatives

Sustainability, especially in light of current thinking on global climate change, is the central element in The New York Botanical Garden’s strategic plan for 2009–2015. Today the necessity of creating environmentally sustainable practices and protocols in all aspects of our lives is quite clear and individuals, organizations, and governments are moving quickly to reorganize and retool themselves for survival in a rapidly changing environment.

To address this issue, the Garden will work to become a more sustainable institution and to better use its landscape and living collections to inspire its visitors to become better stewards of the environment. A variety of new programs will be developed jointly by the Garden’s Science, Education, and Horticulture Divisions and will draw on all of the institution’s strengths.

The following priorities have been identified for public education in Horticulture over the plan period:

Priority 1: Develop “Green Horticulture” and Climate Change Initiatives
Priority 2: Create Captivating Exhibitions
Priority 3: Enhance Living Collections Garden Wide
Priority 4: Build Public Education Programs in Collections and Displays
Priority 5: Expand Signage and Interpretation
Priority 6: Build Bronx Green-Up

Creating a Green Materials Recycling Center
The Horticulture staff of The New York Botanical Garden currently recycles all the green waste it generates during its stewardship of the Garden. The green waste is transformed into mulch, leaf mold, and compost. Unfortunately, due to significant problems with the infrastructure of the existing compost area, the Garden cannot produce the highest quality compost, topsoil, or mulch.

To improve its stewardship of its landscape, gardens, and living collections and the larger environment, the Garden will build and staff a state-of-the-art Green Materials Recycling Center for the production of high-quality compost, mulch, topsoil, and other materials. A Compost Manager will be hired to develop and implement green materials recycling programs to promote plant health and reduce the use of chemical fertilizers and pesticides. The compost will be used in the production of compost tea, which has proven to be an effective alterna-

tive to chemical fertilizers. The use of compost and compost tea instead of inorganic fertilizers will translate into a significant reduction of greenhouse gas emissions each year. It will also provide a cost savings for the Garden.

The state-of-the-art Green Materials Recycling Center will allow the Garden to improve the quality of the mulch and topsoil it produces, thus reducing weed populations Garden wide. The reduction in weed populations will translate into a reduction in the use of herbicides in the Garden. The Green Materials Recycling Center will also be a center for public education about composting and sustainable horticulture. By creating such a facility, the Garden will both significantly reduce its own carbon footprint and establish a leadership position for sustainable horticulture among public gardens in North America.

Developing and Implementing “Green” Horticulture Initiatives
In addition to the creation of the new Green Materials Recycling Center, the Garden will pursue a number of other “green” horticulture initiatives. The installation of a sand filter and recycled water washdown pad in the Horticulture Operations Center will significantly reduce runoff of pollutants from the cleaning of the Garden’s horticulture equipment. The purchase of equipment that uses renewable or low carbon emissions power sources such as bio-diesel and electricity will reduce the carbon footprint of the Garden’s horticulture operations. The installation of a living machine in the Nolen Greenhouses will allow Garden horticulturists to recycle the nearly 2,000 gallons of water used in the Nolen Greenhouses each day. Together these initiatives will make the Garden a significantly greener place.

Achieving Institutional Sustainability
The Garden’s “Green” horticulture initiatives will be part of a larger institutional effort to become more sustainable in all of its operations and programs. The Garden will add a Sustainability and Climate Change Program Manager and a part-time research assistant to its staff to take the lead on introducing sustainable practices and protocols to the institution. In late 2007, the Garden partnered with Cool Planet to perform a carbon audit, an inventory of all the carbon emissions generated from the Garden’s operations. This carbon audit is the first step in the creation of a plan to limit the Garden’s greenhouse gas emissions with the long-term goal of becoming the first carbon neutral cultural institution in New York and the first carbon neutral botanical garden in the world.

Expanding Climate Change Research and Outreach
In 2007 the Garden developed a Gardening in a Changing Climate symposium series designed to introduce professional horticulturists and home gardeners to the tools and techniques they can use to adapt to the changing climate and mitigate future change. At the same time, the Garden is investigating how its research collections can contribute to the study of climate change locally, nationally, and internationally. These programs will firmly establish the Garden as a leader in the study of the impacts of climate change on the world’s plants.

Whether they register for a class or just read a plant label, visitors to the Garden come to learn as well as to be delighted. The Garden celebrates its role as an educational institution and is committed to better using its gardens, collections, and displays to educate the public. Over the next seven years, new facilities and programs will be developed that highlight the Garden’s expertise and take better advantage of the landscape, gardens, and living collections to teach people about plants and the environment. In many cases, these new programs will be developed jointly by the Garden’s Science, Education, and Horticulture Divisions and will draw on all of the institution’s strengths.

The following priorities have been identified for public education in Horticulture over the plan period:

Priority 1: Develop “Green Horticulture” and Climate Change Initiatives
Priority 2: Create Captivating Exhibitions
Priority 3: Enhance Living Collections Garden Wide
Priority 4: Build Public Education Programs in Collections and Displays
Priority 5: Expand Signage and Interpretation
Priority 6: Build Bronx Green-Up
Developing Citizen Science Programs
The Garden's living collections and natural landscape are prime resources for the creation of citizen science programs such as phenology monitoring. The Garden will establish such a program in partnership with the National Phenology Network and other organizations interested in using citizen science observations to train people how to observe and record natural phenomena. These programs will involve a partnership among the Garden's Science, Education, and Horticulture staffs and will draw on the Garden's world-class living and herbarium collections, bibliographic resources, state-of-the-art laboratory facilities, and considerable intellectual capital and professional networks.

Priority 2: Create Captivating Exhibitions
The Garden's exhibition program is the centerpiece of its earned income operations (which sustain the Garden's programs in horticulture, science, and education) as well as an opportunity to teach people about plants. Its current exhibition calendar offers a full and rich horticultural experience for the visitor. Five exhibitions are held each year: Holiday Train Show, The Orchid Show, a Spring Show, a Summer Art Exhibition and Kiku: The Art of the Japanese Chrysanthemum. While benchmarking indicated that the Garden is a leader in the area of horticultural exhibitions, the exhibition program must evolve if the Garden is to draw new audiences. The creation of a five-year exhibition calendar with input from various departments in the institution and the hiring of a Director of Exhibitions are important first steps. Coordination of exhibitions in various venues around the Garden will add to the overall impact.

Garden-wide Art Exhibitions
In this plan period, the tradition of rich and complex horticulture exhibitions will continue to be augmented by the addition of art exhibitions. Art exhibitions are an important way of attracting people to the Garden from throughout the region even if they are not plant people themselves. And even though they may come to see the art, they leave in love with the Garden, perhaps understanding how the Garden is a work of art in and of itself. Art exhibitions have the additional benefit of getting people out into areas of the Garden that they might not otherwise visit.

The enormous success of the Chihuly exhibition is the inspiration for this program. A groundbreaking exhibition of Henry Moore sculpture is planned for fiscal 2009, the largest single-venue assemblage of his work outdoors ever in America. A consultant has been retained to help the Garden identify further possibilities for the plan period. Significant investment for production and marketing is required for these exhibitions and has been included in the plan.

Horticulture Exhibitions
The Garden will also develop its plant-based exhibition program, creating compelling shows for a public that is increasingly aware of the importance of plants. Where possible, exhibitions will capitalize on market interest in themes and horticulture personalities. Ideas that are being considered include inviting celebrity designers to create gardens for the Conservatory or on the grounds, and exhibitions highlighting the “last great places on Earth” such as the Atlantic Coastal forests of Brazil or the dry forests of Madagascar.

Conservatory Enhancements
As the Conservatory will remain at the heart of the Garden’s exhibition program, enhancements will be made during the plan period to provide an optimal visitor experience. These include installing permanent show lighting in the exhibition houses and wayfinding lighting in the rest of the Conservatory that is energy efficient, flexible, and complements the beauty of the plants without comprising their health. At the same time the Garden will evaluate the damage to permanent collections during exhibitions and explore the reorganization and/or modifications of the path that visitors take through the Conservatory.

Priority 3: Enhance Living Collections Garden Wide
The Garden’s living collections are at the core of its role as a museum of plants. Although benchmarking revealed that the Garden has great strength in its living collections, the Collections Master Plan shows that the depth and diversity of its collections could be improved. The Garden will work to enhance its permanent living collections by expanding its seasonal planting budgets, making modifications to the Nolen Greenhouses for Living Collections, and building a woody plant nursery. More diverse living collections will serve as the foundation for truly unique exhibitions, gardens, and displays that will better serve the Garden’s public education initiatives.

Build a Seasonal Planting Budget
The Garden currently grows nearly 80,000 plants each year for seasonal display and exhibitions. Many of these plants could be contract-grown, freeing up labor and space in the Nolen Greenhouses to grow the plants that nobody else can, including special plants for the Garden’s exhibitions, research programs, and garden displays. A moderate increase in the budget for seasonal plantings will produce a significant return in the diversity and quality of the living collections.

Make Modifications to the Nolen Greenhouses for Living Collections
Slight modifications to the Nolen Greenhouses, including the addition of an evaporative cooler and cooled plunge beds, will allow the Garden to grow an increased diversity of special plants for its restored gardens and landscapes and new exhibitions.

Create a Woody Plant Nursery
As a public garden, the Garden must plant the largest specimens possible in its tree collections. Rare trees and shrubs are seldom available in commercial nurseries and almost never available in large sizes. An in-ground nursery on site will allow the Garden to grow rare trees and shrubs to size. It will also provide a place for propagation of native plants for reforestation projects. The nursery
will be large enough to grow selected plants to planting size and will be open to the public, creating another educational feature at the Garden.

Priority 4: Build Public Education Programs in Collections and Displays

With the construction of the Home Gardening Center, the creation of The Orchid Show, and the continued refinement of the Garden's living collections and displays, the Garden has established itself as the best source of information about plants and gardening. Gardeners of all levels of experience turn to The New York Botanical Garden for the most useful, up-to-date information about plants. Now the Garden will build on that success by offering expanded programming both on site and on the Web, emphasizing the practice of sustainable horticulture, gardening in a changing climate, and other cutting edge programs. Specifically, the Garden will focus on developing public education programs within some of its most visible and most successful gardens, displays, and collections.

Seasonal Walk
This 200-foot-long border is a horticultural highlight of the Garden from late April through early November. In April and May, vast drifts of tulips come into flower and, as they fade, are replaced by fields of snapdragons and other spring-flowering plants. Lush plantings of tropical flowers and foliage fill the border in summer and are replaced in fall by chrysanthemums, grasses, and other autumn favorites.

Since its design changes each year, Seasonal Walk provides the perfect opportunity to showcase the most au courant gardening trends. Each year, a new garden designer will be invited to create a design for the border for early spring, spring, summer, and fall. Designers from around the world will thus introduce new plants and planting themes to Garden visitors.

Daylily/Daffodil Walk
This display of daylilies and daffodils provides an extended season of color along one of the Garden's most traveled paths. It features the latest introductions of daylilies and daylilies as well as tried-and-true favorites recommended for home gardeners by the Garden's curatorial staff. Also included is the most complete collection of daylily cultivars introduced by Arlow B. Stout, the long-time Garden plant researcher and breeder, who introduced the first red daylily into cultivation. The Stout daylilies are joined by a collection of daylilies that have been awarded the Stout Medal, the highest honor a daylily can receive.

Daylily/Daffodil Walk will be re-designed, the infrastructure will be improved, and it will become a center for education about these beloved plants, among the most widely grown of all garden plants. Hands-on demonstrations, curator-led tours, and new signage describing the plants and the collection will be added.

The success of the home gardening programs developed at the Garden has underscored the tremendous interest among the public for the best information about gardening. The Garden will leverage its established home gardening programs to expand its in-depth online Home Gardening Center. It will develop new home gardening tip sheets, books, and other publications. It will also expand the suite of home gardening demonstrations offered in the Home Gardening Center and elsewhere in the Garden. By building on the success of its home gardening programs, The New York Botanical Garden will become the primary source of good horticultural information for gardeners throughout North America.

Priority 5: Expand Signage and Interpretation

Implementation of the ideas described above will mean there will be much more to see, do, and learn at the Garden. Each new garden, restored landscape, or new exhibition will need to be interpreted so that visitors leave the Garden feeling more knowledgeable about and better connected to the world of plants. To best serve its educational mission, the Garden will create an interpretation plan. The plan will consider the visitor experience and relate what the visitor is seeing to the larger Garden message. It will familiarize visitors with the traditions of the Garden by relaying the historical importance of the various collections of rare species orchids received by the Garden in its role as a Plant Rescue Center, the orchid collection is the Garden's most diverse and dynamic living collection. The orchid collection serves as the foundation of The Orchid Show and is actively used by members of the Garden's science staff in their research.

The orchid collection will have a greater impact as a result of this plan. A virtual orchid collection will be added to the Garden's Web site, with information about orchids in nature and in cultivation. It will feature hints for home gardeners interested in growing orchids for themselves. An expanded suite of orchid-related programs will be offered during The Orchid Show with an emphasis on orchid biology and orchid conservation. Together these new programs will bring the Garden's renowned orchid collection to an international audience.

Home Gardening Center
The opening of the Home Gardening Center in 2005 raised the Garden's horticultural public education programs to a new level. The Rodney White Country Garden, Mae L. Wien Cutting Garden, Helen's Garden of Fragrant Plants, Louise Loeb Vegetable Garden, and the Compost Display are outdoor classrooms where visitors can see the best horticultural techniques put in practice. Home gardening demonstrations in the Kenneth Roman Gazebo are a highlight of the Garden's weekend public programs during the growing season. Tip sheets available in the Roman Gazebo provide information to interested gardeners throughout the year.

The opening of the Home Gardening Center in 2005 raised the Garden's horticultural public education programs to a new level. The Rodney White Country Garden, Mae L. Wien Cutting Garden, Helen's Garden of Fragrant Plants, Louise Loeb Vegetable Garden, and the Compost Display are outdoor classrooms where visitors can see the best horticultural techniques put in practice. Home gardening demonstrations in the Kenneth Roman Gazebo are a highlight of the Garden's weekend public programs during the growing season. Tip sheets available in the Roman Gazebo provide information to interested gardeners throughout the year.
collections. It will set the Forest, for example, in context to the research by
Garden scientists being done in forests around the world. And perhaps most
importantly, it will convey the significance of plants and the places that pre-
serve and promote them in a world of rapid environmental change. These
messages will be conveyed through all media, including audio tours (cell phone
and audioguide), signs, maps, guidebooks, and other techniques.

Priority 6: Build Bronx Green-Up

Through Bronx Green-Up the reach of horticulture extends beyond the Garden
itself, serving the community and making its staff beloved ambassadors for the
Garden throughout the Bronx. Bronx Green-Up provides horticultural training,
technical assistance, and plant material to over 120 gardens across the borough.
However given staffing limitations, Bronx Green-Up has not had the capacity to
respond to the regular requests it receives to work with school programs in the
Bronx or gardens in other boroughs. With the addition of a community horti-
culturist, Bronx Green-Up will significantly increase its impact and visibility
citywide by creating new programs and serving new gardens.

Build Endowment

Endowment funds serve as a valuable foundation for operating initiatives across
the Garden. Many of the accomplishments of the past would not have been
possible without such funds. In Horticulture, the highest priorities for endow-
ment are the following:

- New Native Plant Garden
- Azalea Garden
- Rock Garden
- Twin Lakes Water Garden
- Forest
- Daffodil Valley

Summary Statement

Horticulture at The New York Botanical Garden has experienced a renaissance
over the last decade. The restorations of the Enid A. Haupt Conservatory,
Arthur and Janet Ross Conifer Arboretum, Benenson Ornamental Conifers,
and Peggy Rockefeller Rose Garden have breathed new life into the Garden’s
historic landscape and living collections. The additions of the Everett Chil-
dren’s Adventure Garden and the Home Gardening Center have provided new
venues for expanded educational programs. The construction of the Nolen
Greenhouses for Living Collections and the installation of Garden-wide irrigation
have improved the stewardship of the Garden’s world-class living
collections. The expansion of the program of seasonal exhibitions has intro-
duced a new audience to the Garden.

Over the next seven years, the Garden will build on its achievements by reinvig-
orating the historic gardens and landscapes in the “Heart of the Garden” and by
creating new public education, display, and outreach programs that draw on the
diversity of its living collections and the singular beauty of its natural landscape.
The creation of new gardens and the restoration of cherished historic landscapes
will add significantly to the Garden’s appeal and draw new audiences. The
expansion of the exhibition and public education programs will introduce new
audiences and keep the institution a vital part of New York’s cultural landscape.
The development and implementation of sustainable horticulture tools and
techniques will establish the Garden as a leader in the stewardship of the envi-
ronment as well as in the stewardship of its own gardens and landscapes. The
addition of new staff and the development of a long-term Landscape Master
Plan will ensure that the Garden is able to sustain its excellence over the long
term. The realization of the ambitious goals of this plan will secure the status of
The New York Botanical Garden as “America’s Garden.”
Public Education for Children and Adults

Priorities and Strategic Investments 2009–2015 .......................... 55
Enhance the Garden’s Facilities and Programs to Maintain its
International Leadership Position in Children’s Education ............. 56
Priority 1: Enhance the Everett Children’s Adventure Garden
and Surrounding Facilities and Programs .................................. 57
Priority 2: Restore and Add to the Ruth Rea Howell Family Garden and Programs ........................................ 58
Priority 3: Renovate and Add to the GreenSchool Classrooms and Programs .................. 59
Priority 4: Create a High School Professional Development Program ........ 59
Priority 5: Expand Curricula Offerings to Include Biodiversity and Pre-K .......................... 60
Priority 6: Launch an Outreach Program ..................................... 60
Build Endowment ..................................................................... 61
Expand the Reach and Visibility of the Garden’s Unparalleled
Adult Education Programs .................................................... 61
Priority 1: Capitalize on the Potential of the Manhattan Market ......... 61
Priority 2: Upgrade On-site Classrooms ..................................... 62
Priority 3: Host an International Juried Art Exhibition .................. 62
Priority 4: Build Enrollment in the School of Professional Horticulture .................................................. 63
Summary Statement ................................................................ 63
Education is fundamental to the Garden’s mission. As one of the world’s leading botanical gardens, The New York Botanical Garden is committed to educating people about the science, function, and beauty of plants-to generate awareness, inspire appreciation, and provide an understanding of the importance of plants to all life on Earth. The Garden’s Education Division offers a wide range of structured, programmatic experiences for students of all ages and levels of learning that is unrivaled at any botanical garden in the world.

Nearly 375,000 schoolchildren, families, and teachers participate in education programs at the Garden each year, utilizing three facilities. Since 1998, the 12-acre Everett Children’s Adventure Garden has featured an array of indoor and outdoor inquiry-based learning galleries, integrating horticulture and exhibitry to convey a broad range of plant science concepts. A model for children’s teaching gardens, the Children’s Adventure Garden has been admired and imitated throughout the world. In addition, the Ruth Rea Howell Family Garden offers children and families the opportunity to learn about plants and nature through hands-on vegetable gardening. Finally, the GreenSchool offers hands-on, inquiry-based workshops for school groups enhanced by explorations in the Enid A. Haupt Conservatory, the Forest, and throughout the Garden’s grounds. Overall, on-site attendance in Children’s Education programs has increased 176% since 1998, the result of expanded programming and the success of the Adventure Garden.

At the same time, Professional Development and Curriculum Development initiatives have significantly increased Education’s impact beyond the Garden’s gate. The Professional Development program expands schoolteachers’ knowledge of plant science and ecology, exploring ways to make lessons stimulating and fun for students, while reinforcing state and federal science teaching objectives. Curriculum Development partners with academic publishers to create and distribute textbooks and interactive kits brimming with lesson materials and grade-appropriate activities.

Adult students benefit from the more than 500 courses and lectures offered each year through the Garden’s Continuing Education program. Certificate programs are offered in seven plant-related disciplines. Class offerings range from one-hour lectures to five-week intensive programs. Continuing Education increasingly generates earned income for the Garden, with net revenues growing tenfold in the past 12 years. For students seeking full-time horticultural study with a strong practical component, the Garden’s School of Professional Horticulture provides a rigorous, two-year educational experience.

Competitive strategic analysis confirmed that the education programs of The New York Botanical Garden are larger and more diverse than those offered at any other botanical garden in the world. The Everett Children’s Adventure Garden is a standard-bearer in the field of inquiry-based science education, and the variety of programs offered in the Ruth Rea Howell Family Garden is unsurpassed. Likewise, in the area of Continuing Education, the Garden’s
Enhance the Garden’s Facilities and Programs to Maintain its International Leadership Position in Children’s Education

Many of these facilities are showing the effects of the Garden’s successful programming enabled the Garden to provide exceptional learning opportunities for children and engage their teachers, parents, and families in the experience.

Most recently a new Children’s Entrance was added to accommodate school groups more expeditiously and efficiently, and improve their overall experience at the Garden. The combination of outstanding facilities and innovative programming enabled the Garden to provide exceptional learning opportunities for children and engage their teachers, parents, and families in the experience.

Now ten years old, ECAG remains a model for inquiry-based plant science education. Guided explorations for school groups and pre-school groups; 2.) Teen Explainer Program—training middle and high school students to lead educational activities for younger families; and 3.) changing seasonal programs for families.

To better accommodate the substantial growth in Education attendance and to sustain the preeminence of the programs, it is important to address the adequacy of the facilities and to develop new program initiatives to further broaden our impact. Many current facilities have not been reconditioned since their creation and additional on-site classrooms and a children’s lunch room are necessary. Off site, Continuing Education seeks a reliable, accommodating Manhattan location to facilitate increased growth; Children’s Education can expand its scope with an outreach program; new curricula for Pre-K and middle school students will be created and marketed nationwide; an interactive virtual tour of the Haupt Conservatory will provide a richer online educational presence; and Professional Development will broaden its focus to target high school teachers.

As a result of investments made in the last two plans, plant science education at the Garden has advanced considerably. Before the Everett Children’s Adventure Garden opened 10 years ago, for example, education activities for families were primarily delivered from carts around the Garden. The research and program planning that took place in those plans resulted in the expansion of the Ruth Rea Howell Family Garden, the creation of the Everett Children’s Adventure Garden and the Mitsubishi Wild Wetland Trail, the development and growth of the Explainer Program, and the creation and publication of plant science curriculum units. The last strategic plan also saw major growth and development of the Professional Development Program.

Many of these facilities are showing the effects of the Garden’s successful programs and are in need of renovation. There is the need for expansion of certain facilities to ensure the Garden can continue to offer a quality educational experience. Strategies to expand the reach of the Garden’s education programs need to be developed to further our leadership role.

To maintain excellence in the delivery of children’s education programs, to meet the growing demand for improved foundations in science that the country is demanding, and to build upon the realization on the part of a broader public of the importance of plants, the Garden has identified the following priorities over the plan period:

Priority 1: Enhance the Everett Children’s Adventure Garden and Surrounding Facilities and Programs

Priority 2: Restore and Add to the Ruth Rea Howell Family Garden and Programs

Priority 3: Renovate and Add to the Green School Classrooms and Programs

Priority 4: Create a High School Professional Development Program

Priority 5: Expand Curricula Offerings to Include Biodiversity and Pre-K

Priority 6: Launch an Outreach Program

In addition, the exhibitry in ECAG is beginning to show its age, a testament to its popularity and heavy use. Because ECAG was in many ways experimental in its design, and over the years the Garden has learned from usage patterns and evaluations of program effectiveness, the 10th anniversary of this renowned facility presents an appropriate opportunity to embark upon a thorough rethinking of the overall exhibitry, using what we have learned to make the exhibits better, more integrated to program content, and more impactful in achieving learning objectives. To accomplish this, Education staff will use accumulated experience, current science education pedagogy, and perhaps a museum education consultant, to reassess and upgrade exhibits, keeping ECAG on the cutting edge of informal science education, and assuring that it remains the premier children’s education garden in the world. Pre and post evaluation offerings dwarf those of its sister institutions in the diversity of classes offered and number of registrations.

To better accommodate the substantial growth in Education attendance and to sustain the preeminence of the programs, it is important to address the adequacy of the facilities and to develop new program initiatives to further broaden our impact. Many current facilities have not been reconditioned since their creation and additional on-site classrooms and a children’s lunch room are necessary. Off site, Continuing Education seeks a reliable, accommodating Manhattan location to facilitate increased growth; Children’s Education can expand its scope with an outreach program; new curricula for Pre-K and middle school students will be created and marketed nationwide; an interactive virtual tour of the Haupt Conservatory will provide a richer online educational presence; and Professional Development will broaden its focus to target high school teachers.

As a result of investments made in the last two plans, plant science education at the Garden has advanced considerably. Before the Everett Children’s Adventure Garden opened 10 years ago, for example, education activities for families were primarily delivered from carts around the Garden. The research and program planning that took place in those plans resulted in the expansion of the Ruth Rea Howell Family Garden, the creation of the Everett Children’s Adventure Garden and the Mitsubishi Wild Wetland Trail, the development and growth of the Explainer Program, and the creation and publication of plant science curriculum units. The last strategic plan also saw major growth and development of the Professional Development Program.

Most recently a new Children’s Entrance was added to accommodate school groups more expeditiously and efficiently, and improve their overall experience at the Garden. The combination of outstanding facilities and innovative programming enabled the Garden to provide exceptional learning opportunities for children and engage their teachers, parents, and families in the experience.

Many of these facilities are showing the effects of the Garden’s successful programs and are in need of renovation. There is the need for expansion of certain facilities to ensure the Garden can continue to offer a quality educational experience. Strategies to expand the reach of the Garden’s education programs need to be developed to further our leadership role.

To maintain excellence in the delivery of children’s education programs, to meet the growing demand for improved foundations in science that the country is demanding, and to build upon the realization on the part of a broader public of the importance of plants, the Garden has identified the following priorities over the plan period:

Priority 1: Enhance the Everett Children’s Adventure Garden and Surrounding Facilities and Programs

Priority 2: Restore and Add to the Ruth Rea Howell Family Garden and Programs

Priority 3: Renovate and Add to the Green School Classrooms and Programs

Priority 4: Create a High School Professional Development Program

Priority 5: Expand Curricula Offerings to Include Biodiversity and Pre-K

Priority 6: Launch an Outreach Program

Since it opened in 1998, the Everett Children’s Adventure Garden (ECAG) has hosted over 2 million students and families. Indoor and outdoor learning galleries focus on different aspects of plant science with interactive exhibits and colorful signs to promote active discovery; Programming in ECAG is designed to meet the needs of three audiences: 1.) guided explorations for elementary school groups and pre-school groups; 2.) Teen Explainer Program—training middle and high school students to lead educational activities for younger families; and 3.) changing seasonal programs for families.

Now ten years old, ECAG remains a model for inquiry-based plant science education. Guided explorations for school groups have become so popular that the facilities are struggling to accommodate current visitation. This is a testament to its success and the logistics of coping with inclement weather. On a typical day, 120 schoolchildren visit ECAG in three morning timeslots (in non-winter months, the number is 240), participating in guided programs that rotate through outdoor and indoor lesson areas. In nice weather, groups flow throughout the garden with tightly orchestrated coordination. However, in inclement weather ECAG program leaders scramble and make do. Marginally protected space is used such as under the eaves of the Discovery Center, or classes share space designed for only one class. The shortage of indoor teaching space compromises program delivery and leads to cancellations. To solve this problem and better accommodate school group programs, the Garden will add two classrooms.

In addition, the exhibitry in ECAG is beginning to show its age, a testament to its popularity and heavy use. Because ECAG was in many ways experimental in its design, and over the years the Garden has learned from usage patterns and evaluations of program effectiveness, the 10th anniversary of this renowned facility presents an appropriate opportunity to embark upon a thorough rethinking of the overall exhibitry, using what we have learned to make the exhibits better, more integrated to program content, and more impactful in achieving learning objectives. To accomplish this, Education staff will use accumulated experience, current science education pedagogy, and perhaps a museum education consultant, to reassess and upgrade exhibits, keeping ECAG on the cutting edge of informal science education, and assuring that it remains the premier children’s education garden in the world. Pre and post evaluation
Another extremely successful initiative, the Teen Explainer Program, targets an older audience of middle and high school students. The program trains students to be facilitators in ECAG, building not only plant-science knowledge, but also important social, career, and presentation skills. Having grown to 174 Explainers, the Garden will add a Coordinator to better manage and enhance this popular program.

Another challenge addressed in the plan related to inclement weather is where to provide lunch space for the 90,000 schoolchildren who visit each year. Virtually all school groups that visit the Garden eat lunch during their trip in an effort to extend their visit and make the most of the Garden’s many resources. The open-air Clay Family Picnic Pavilions are beautiful and accommodating in good weather; however rain and cold make them less so. In winter, schoolchildren retreat to their buses or make use of hallways and any unused corners of the Discovery Center to eat their lunches. This is insufficient, provides a less than ideal learning environment, and infringes on other ongoing programs. To address this, the Garden will build a lunchroom facility to accommodate children in inclement weather.

The Mitsubishi Wild Wetland Trail functions as both an exhibit and a thoroughfare. The quarter-mile-long trail features signage and exhibitry designed to teach students about the ecology of a wetland environment. It is used extensively by school group programs as well as Professional Development workshops for schoolteachers. Installed in 1998, it is due for refurbishment and exhibit updates. As the primary travel route from ECAG and the Clay Pavilions to the Haupt Conservatory, this is a heavily trafficked route. The exhibitry will be evaluated for its effectiveness, new technologies will be explored, and ultimately the exhibitry will be updated and refurbished and the trail reconditioned. New signage will be added to communicate the importance of the wetlands as a vital ecosystem.

Priority 2: Restore and Add to the Ruth Rea Howell Family Garden and Programs

For 20 years the Ruth Rea Howell Family Garden has, in its current location, offered children a fun, hands-on gardening experience—planting, tending, and harvesting fruits, vegetables, and herbs; composting plant material; and digging for worms. Program attendance has grown to 42,000 children, teachers, and families. It is home to three programs: the regularly sold-out, multi-session Children’s Gardening Program; School Group Workshops for Pre-K through 5th grade; and Family Garden Adventures for walk-in visitors. Heavy use, coupled with exposure, has taken a toll on the site, and renovation is much needed. While the front perimeter wall was recently installed, the remaining perimeter walls require repairs, pathways demand drainage and restoration, and raised beds need to be refurbished or replaced.

In addition, the Family Garden is currently open only during the growing season, from April to October. As a result, it is closed during a large portion of the school year. This represents a lost opportunity. The Garden will construct a greenhouse/classroom structure to offer year-round programs in propagation, vegetable gardening, and nutrition. The plant propagation component would allow children to learn about plant life cycles by practicing hands-on techniques such as dividing, reporting, and sowing seeds. Responding to the mounting body of evidence showing the connection between plants, gardening, and good nutrition, the Garden will provide fun and engaging hands-on programs in this area. Elements will include not only growing, preparing, and eating fresh vegetables and herbs, but also nutrition basics, menu planning, and food preparation techniques. To carry out this programming, the Garden will add a Family Garden Coordinator.

Priority 3: Renovate and Add to the GreenSchool Classrooms and Programs

Two GreenSchool classrooms are located in the basement of the Haupt Conservatory, offering interactive programs for elementary and middle school classes. Half of the time is spent in classroom workshops, followed by explorations in the Conservatory or out on the grounds. Serving 9,000 children each year in grades K-8, GreenSchool has seen particularly strong growth in its middle school audience, which numbered 1,400 in fiscal 2007. According to the National Assessment of Education Programs, 43% of American 8th graders do not have a basic understanding of science, and this percentage is higher in New York City. Consequently, the middle school grades are becoming a particular focus of city, state, and federal education initiatives, and GreenSchool programs are designed to meet the needs of this oft-neglected audience.

The classrooms as they exist are insufficient. The basement confines are dark and damp, and while Education staff take pains to make the space as vibrant and inviting an environment as possible, a basement it remains. In addition, to continue expanding middle school attendance and to accommodate longer program formats, one additional classroom is required. Ideally, a new, three-classroom structure will be built in close proximity to the Haupt Conservatory. Moving these classes out of the Conservatory would provide the added benefit of creating additional storage space for Horticulture, which struggles to find space for the ever increasing array of exhibition-related equipment and supplies. Alternatively, the existing space might be reconfigured to accommodate three classrooms.

Priority 4: Create a High School Professional Development Program

Professional development for teachers extends the Garden’s educational reach beyond the Garden’s gate. Professional Development programs make extensive use of ECAG, the Mitsubishi Wild Wetland Trail, and the Forest, to teach ecology and plant science with a direct correlation to state and federal standards and learning objectives. The Garden currently presents workshops, seminars, and summer intensive programs to 3,000 elementary and middle
school teachers per year, training them in plant science content and teaching methods. This represents significant growth of over 300% since fiscal 1998. Although high school science teachers generally have more substantial science backgrounds than their elementary school counterparts, they still require ongoing professional development. In fact, the New York City Department of Education provides teachers incentives to participate in these programs, in the form of salary increment credits. The Garden will expand the Professional Development program to the high school level with programs designed to instruct teachers in how to meet state and federal science learning objectives. To accomplish this, a High School Professional Development Manager will be hired and the classroom space to be created in ECAG and in the GreenSchool will be shared.

Priority 5: Expand Curricula Offerings to Include Biodiversity and Pre-K

New York Botanical Garden-published curricula support the teaching needs of educators throughout the country, while forging a tangible link between the Garden's science programs and classroom science education. Leveraging the success of the SEEDS plant science series for elementary school students and a newly published ethnobotany curriculum for middle school students, the Garden will develop for publication a new ecology curriculum focusing on biodiversity, as well as plant science basics kits aimed at the growing pre-K audience.

In addition, the Garden has undertaken a project to develop a pedagogically rich virtual tour of the Enid A. Haupt Conservatory, complete with downloadable activities that can be used at home or in the classroom. Users will be able to explore the Conservatory's desert and rain forest galleries and learn about the plants, their uses, and the scientists who study them. The virtual tour will greatly enhance the Garden's online educational resources and will serve as a cornerstone for a greater online presence.

Priority 6: Launch an Outreach Program

A local outreach program is an important addition to the Garden's educational offerings to serve the many students who are unable to take field trips. Such programs are offered by almost all of the benchmarked institutions surveyed. The program will adapt existing programs as well as design new pedagogically appropriate content into formats that can be brought to local schools and taught by Garden staff. Not only will this program enhance the learning of schoolchildren directly by delivering programs to the classroom, it will also increase public awareness of the Garden's many educational resources. An outreach effort of this kind is expected to reach 12,000 students each year, nearly all in the Bronx. It will require the addition of a staff person and a vehicle.

Build Endowment

Building an endowment to support Children's Education would considerably enhance sustainability for the department. Endowment support would be beneficial for programs and materials in the Everett Children's Adventure Garden, the Ruth Rea Howell Family Garden and the GreenSchool as well as for off-site programs such as the outreach program. This more permanent type of funding would provide a welcome floor for the annual support upon which the Children's Education programs depend.

For more than 80 years, the Garden's Continuing Education program has provided adults the opportunity to learn about plants, people-plant relationships, and the environment through high quality instruction and programming. The program currently serves over 3,500 students annually with over 500 courses and lectures taught by outstanding instructors—experienced professionals who are respected and recognized in their fields. Students benefit from the wealth of resources at the Garden, including the Enid A. Haupt Conservatory, LuEsther T. Mertz Library, William and Lynda Steere Herbarium, and the 250 acres of plant collections, display gardens, and the Forest to deepen their learning experience. These courses are offered on site and at six additional locations throughout the tri-state area. Enrollment exceeded 11,000 registrations in fiscal 2007. An earned income area of the Garden, the program generates net revenue to support other Garden initiatives in horticulture, science, and children's education.

Additionally, the School of Professional Horticulture, a competitive, two-year program, trains students in the skills and techniques necessary to pursue careers at the highest levels of public horticulture and private estate management. Many of the Garden's senior Horticulture staff graduated from the School.

These outstanding adult education programs can be enhanced to further develop growth potential. New audiences will be sought, facilities will be upgraded, and new programs will be added over the next seven years. Four priorities have been identified for Continuing Education and the School of Professional Horticulture:

Priority 1: Capitalize on the Potential of the Manhattan Market
Priority 2: Upgrade On-site Classrooms
Priority 3: Host an International Juried Art Exhibition
Priority 4: Build Enrollment in the School of Professional Horticulture

Priority 1: Capitalize on the Potential of the Manhattan Market

The Garden remains the primary venue for Continuing Education, drawing students who live and work in Westchester and upper Manhattan, Connecticut, New Jersey, and the Bronx. However, limited forays into downtown Manhattan in rented space have demonstrated large, untapped demand. The objective of these off-site offerings was to attract new students with introductory classes, and then entice them to continue Certificate study at the Garden. Instead, while classes were often full with commuters from Brooklyn, Staten Island, and New Jersey, as well as residents of downtown Manhattan, students complained that they simply could not make the trip to the Garden, and petitioned for more classes closer to home. Moreover, rented space did not offer...
the specialized equipment necessary (drafting tables, sinks, refrigerators, etc.) for more advanced classes in the profitable areas of landscape design, floral design, and botanical art.

To capitalize on this underserved demand, the Garden will create a new School of Horticulture and Landscape Design in Manhattan, featuring six classrooms with appropriate facilities and equipment. The School will ideally be located downtown, convenient to public transportation. It will be staffed with a manager and a part-time administrative employee. Course offerings will focus on Certificate programs, offering students the opportunity to complete an entire Certificate without leaving Manhattan. Operating expenses will be economized by centralizing programming and registration functions at the Garden. The space will also accommodate lectures, serving as a home for the Garden’s renowned Landscape Design Portfolio Series.

**Priority 2: Upgrade On-site Classrooms**

Additional classroom space was provided for the Continuing Education program in the last phase of the plan to accommodate the growing number of students. Five classrooms were created in the Watson, Pratt, and Library buildings, bringing the total to eleven. Classrooms are of various types, outfitted with the equipment specific to each particular subject area. Botanical art and landscape design classes require large drawing/drafting tables for example, while horticulture, botany, and floral design classes are best accommodated in a workshop environment outfitted with sinks. The need is not for additional on-site classrooms in this phase of the plan. Rather classrooms need to be upgraded and made more flexible for most efficient use. Because enrollments vary, space can be maximized if classroom assignments can be adjusted based on class size. Optimally, options would be available for each type of classroom.

Furniture and equipment will be upgraded in the older classrooms. Worn-out desks will be replaced, lighting needs will be assessed, and window shades and projection screens replaced. Technology will be integrated as needed. While some classes will be almost entirely technology-based, such as classes in digital photography and computer-aided design, others utilize technology periodically such as the small business classes that use Microsoft Office programs.

Alternatives currently being explored include the creation of a stand-alone computer lab and/or putting the lab on a cart where it could be utilized by whatever classroom needs it. Investment in this refurbishment will enable the Garden to offer its continuing education classes in space that reflects the quality of the programs.

**Priority 3: Host an International Juried Art Exhibition**

The Garden is a leader in the field of botanical art and illustration, having initiated the first formal botanical art program in the United States. Instructors in the program have been instrumental in founding and expanding the American Society of Botanical Artists, and many are award-winning artists themselves, with their work included in major collections. To leverage our tradition, reputation, and experience we will host an international, juried botanical art exhibition in the William D. Rondina and Giovanni Foroni LoFaro Gallery of the LuEsther T. Mertz Library. This exhibition will be held every two years, featuring an internationally respected jury, and a full-color catalog, and will draw submissions from botanical artists worldwide. Expenses will be offset by catalog sales and commissions from the sale of the artwork. Hosting an international juried botanical art exhibition will add to the stature and public awareness of the Garden’s prestigious tradition of botanical art instruction.

**Priority 4: Build Enrollment in the School of Professional Horticulture**

The School of Professional Horticulture is a demanding, full-time program to educate motivated adults to become horticulturists of the highest caliber. Graduates take on leadership positions in public gardens and private estates. The Garden is one of just three distinguished institutions in the world offering such a program, which operates as a joint venture between the Garden’s Continuing Education department and the Horticulture and Living Collections division. The School of Professional Horticulture achieved accreditation and certification in the last plan, allowing it to offer both visas to international students and federal financial aid loans.

The shortage of well-trained horticulturists entering the work force is lamented at the Garden and around the world of horticulture. This deficit points to the increased importance of building enrollment in the School. The Garden’s full-time, two-year program currently educates 16 students. Strategic marketing and recruitment efforts are projected to expand the school by 50%, to 24 students by fiscal 2015.

The Education programs of The New York Botanical Garden are unsurpassed. Investments made in previous phases of the plan have enabled the Garden to claim a leadership position in children’s and adult education based on depth of programming, extensive and varied facilities, and professional expertise shared with students and teachers alike. Maintaining that position requires new investment. Programming enhancements such as pre-K and biodiversity curricula, an outreach program, a virtual tour of the Conservatory, and professional development for high school teachers will keep the Garden current and enable it to expand to new audiences. Upgrading and expanding facilities will ensure a quality education experience for students and teachers, both at the Garden and off site. All these initiatives will enable the Garden to continue to be the institution that sets the standard in botanical science education for children and adults.
LuEsther T. Mertz Library

Priorities and Strategic Investments 2009–2015 .................................................. 67
Priority 1: Modernize Library Collections and Services ........................................... 68
Priority 2: Upgrade Conservation Facilities ............................................................... 70
Priority 3: Enhance Exhibition Program ................................................................. 71
Build Endowment ........................................................................................................ 71
Summary Statement ..................................................................................................... 72
The LuEsther T. Mertz Library is widely recognized as the world’s most important library for information about the plant world. For more than 100 years, it has been devoted to collecting and preserving scholarly and professional literature about plants in all formats and making these collections available to the public. The Mertz Library serves as both a research and a public library and as both a scholarly resource and a general plant information service. It offers a wide array of reference resources, print and electronic, and the help of an informed staff to anyone visiting the Library through the Internet or in person. It contains over 1 million items, dating from the 12th century and ranging from early herbals to current electronic databases. Collections of note include art and illustration, seed and nursery catalogs, architectural plans of glasshouses, scientific reprints, and a comprehensive book and journal collection.

The Library holds approximately 80% of the world’s published literature in the subjects of plant systematics and floristics. In addition to Garden staff, a broad array of users from high school students to research scientists makes use of the collections and services. Last year, librarians answered almost 12,000 inquiries by either e-mail, telephone, or on site; over 20,000 visitors came to the Mertz Library and its William D. Rondina and Giovanni Foroni LoFaro Gallery; and the Library and Plant Information Web sites had over 82,000 hits. In addition to providing reference and research services, the Library mounts two world-class exhibitions per year, providing visitors with a rich educational experience. Exhibitions presented in the Rondina and LoFaro Gallery contribute to the Garden’s museum offerings; they feature its collections, connect with its community, encourage research, and can inspire others to enrich its collections through donations. They also allow the Library staff to research and interpret the collections as curators.

The strategic competitive analysis confirmed that the Mertz Library curates more collections per staff, collects more comprehensively, and provides more public service than do its sister institutions. The Garden compared its collections size using just the ratio of book and journal volumes to staff size. The results show that it has fewer staff supporting the collection than the other libraries it measured against and covers more subject fields than other institutions. In addition to botany, horticulture, and landscape design, the Library collects genomics, molecular systematics, and climate change resources. The range of public services provided includes maintaining a public service desk staffed with a librarian, circulating library collection, weekend hours, plant information service, reference and interlibrary loan services, and a program of public exhibitions.

While the Mertz Library emerged as a strong competitor in the benchmarking analysis, the results showed that it lacked the technical infrastructure and electronic management tools to be a truly modern library. In terms of its electronic resources and the number of items digitized, it is significantly behind. The Library’s conservation facilities could also be described as sub par compared to those of the other libraries surveyed.

The Library was the first to have an online botanical library catalog, called CATALPA, fully available on the Internet as of 1994. Recently a Systems Librarian
was added in the Library to select and install new information search, access, and delivery systems. Modernization of the Library remains the top priority in the coming plan period, and many of the initiatives outlined support this goal. The Library has prioritized the following initiatives for the next seven years:

Priority 1: Modernize Library Collections and Services
Priority 2: Upgrade Conservation Facilities
Priority 3: Enhance Exhibition Program

Priority 1: Modernize Library Collections and Services

As the shift continues in library usage from on site to online, it becomes increasingly important to adapt the Garden’s collections and services accordingly, or become obsolete. The Internet continues to be the main competitor of the Library for research purposes but cannot provide the value enhancing mediation and organization of information that the Library can. The major goal for the Library in 2009–2015 is to make more of its resources available in electronic form, and to push them beyond the physical walls of the Library into the electronic universe available to the world.

Digitization

The Library will undertake a major digitization effort during the plan. In addition to providing better access to electronic journals, digital files, and commercial databases, the Library will reformat some of its printed collections to digital format. Over 80% of the world’s biodiversity occurs in Africa and South America and more than 90% of the literature documenting that diversity is found in the collections of major institutions in the developed world. By making the literature accessible online the Garden provides collections access to researchers in rural areas and developing countries that would not otherwise have it. The Library can accomplish these goals in two ways: in association with strategic partners and as part of the Digital Plant Research Center (DPRC).

The Library is a founding member of the Biodiversity Heritage Library (BHL) consortium, a group of major botanical and natural history libraries that is pooling its resources to digitize all of the world’s biodiversity literature. The project will enable each library to digitize a portion of their holdings and all will share the results. This allows for low-cost massive digitization, with the elimination of duplication, and will result in a core body of subject specific literature available worldwide.

The Library will also digitize some of its holdings, independent of larger collaborative projects. Those holdings will include material that supports the work of the Garden or that contributes to a specific project as part of the Digital Plant Research Center. The DPRC, a system of interconnected digital resources that is being developed at the Garden, proposes to link literature, specimen, and other data such as scientist’s research in a unified search tool. Digitization priorities will include the portion of the collection that supports the work of the Garden such as Brazilian and Caribbean materials and items that are unique to the Library. A preliminary collections analysis indicated that the Mertz Library holds over 60,000 unique items in the book and journal collection alone. In addition the riches in the archive, which are mostly all one-of-a-kind, make these collections exceptional. A comprehensive plan will be developed that will identify these projects along with digitization for on-demand research requests and interlibrary loans, commercial use scans for product development, projects with collaborative potential, and preservation reformattting for printed works that have become too brittle to handle.

Electronic Management Tools

The mission of libraries has evolved from one of collection management to one of knowledge management. Computer technology has allowed libraries to better manage both collections and knowledge. The Library’s goal is to create a single, unified, online presence for all its resources and provide access to them through a single point of entry. The Library Web site will be rebuilt for maximum usability and a redesign of the online catalog Web site will give it a more modern appeal and unify it with the existing Library branding. With the addition of new modules, the online catalog will continue to evolve as it increasingly becomes a central and crucial tool in an ever more digital information world. Other administrative tools will allow the staff to better manage the resources, resulting in increased and faster access. There are materials in many formats in the collection, CDs, DVDs, electronic indexes and databases, and PDFs, which will be made searchable across the spectrum. To do this the Library will acquire commercially available tools such as Serials Solutions, CASE/ERMS, WebBridge, or similar products. It will also procure Electronic Resource Management Systems (ERMS) to seamlessly link and manage its resources.

Acquisitions

The original guidelines for the development of the Library were stated by Nathaniel Lord Britton, the Garden’s first director. In his report of 1904, he noted that: “We should certainly aim to make the library as complete as possible in pure botany, and in its related sciences of horticulture, agriculture, forestry, and such portions of general biology as apply to plants, and I believe that no greater service could be rendered to these subjects in America, than by some provision by means of which our library should be perfected.” Because excellent research depends on access to the best and most current information, the Library will purchase an increasing number of electronic journals, databases and other digital information (as well as more traditional print resources) over the plan period to maintain its reputation as the leading botanical library in the world. It will seek to provide comprehensive coverage in its traditional subject areas such as botany, horticulture, and landscape design as well as grow its collection of climate change and genomics materials. As publishers are transitioning from print to electronic models and the subscription model is still in flux, the Library acquisition budget is severely impacted making this an important priority over the plan period.

Cataloging

The Cataloging Services Department provides bibliographic control and intellectual access for the Library’s collections, and maintains the content of the
Library's online catalog. Its work enables users of the Library's catalog to determine what the Library has and where to find it. Access to information will be expanded electronically by processing uncataloged collections and entering records in the database for those special collections which include art and illustrations, photographs, maps and plans, nursery catalogs, and a large portion of the archives. The Library will also catalog its special collections, including all original archival material and other unique yet unprocessed materials. Currently, access to the Library's important Nursery and Seed Trade Catalog Collection is limited. Maps, particularly older ones, can be a critical resource in determining locations cited by plant specimen collectors. The Library and Science have maps, some rare and valuable, but they have not been cataloged fully nor are they arranged in a standard format. The Library maintains a vast collection of articles in its Reprints Collection, representing approximately 20,000 authors, but the collection is inaccessible online. The Art and Illustration Collection contains approximately 25,000 items, and as with the other collections, access is limited. As these collections are not likely to be found in any other library, it is important to make them available.

Modernization of the Library will be supported by the following staff additions during the plan period: 1.) a Digital Projects Manager to oversee all the Library's digitization projects; 2.) an Institutional Repository Manager to manage the database once created; and 3.) two part-time digitization/scanning staff. These technical positions will be supported by additional personnel to work on developing the collections (acquisitions/bibliographer) and making them available (special collections cataloger/archivist).

**Priority 2: Upgrade Conservation Facilities**

The Conservation department contributes to the Garden's mission by preserving and protecting its investment in the Library collections. To assure the physical and chemical stability of these collections, the Conservation staff performs a wide range of activities: monitoring environmental conditions in the Library storage areas; collection care maintenance (cleaning, minor repair, and re-housing); conservation treatment (physical rebinding and restoration); reformatting; and the preparation and mounting of exhibitions. Ongoing projects carried out by the Conservation/Preservation staff include collection inventory, cleaning and re-housing of the Art and Illustration and the Lord & Burnham Collections, and the long-term work of repairing, restoring, and creating protective enclosures for items from the Rare Book and Folio Collection and the Pre-1850 Publication Collection.

Many of the items in the Library's collections are rare and fragile. The lack of proper infrastructure and equipment has limited the execution of simple conservation procedures and the ability to perform technically advanced treatments. The department is responsible for prolonging the useful life of the collections yet they are not currently equipped with facilities and equipment to manage the conservation and preservation needs of this superb collection.

Renovating the conservation lab is a critical first step and will include upgraded environmental conditions, new equipment and furniture such as a conservation sink with filtered water, a fume hood, and proper, safe, and secure storage of materials.

Other areas of the Library will be renovated as well. In the beginning of the last plan, the Library public and administrative space was beautifully renovated and a climate-controlled exhibition gallery was added for rotating exhibitions of botanical art and library holdings. The balance of the Library space is slated to be renovated in this plan. Currently housed on three separate floors in the Library/Pratt building, all Library materials and staff will be consolidated on the 6th floor adjacent to the public Library space, with the exception of the archives which will be housed in an annex. This will bring into proximity all the support staff—cataloging, acquisitions, library systems, and the conservation lab—greatly increasing efficiency. Environmental conditions will also be upgraded both on the 6th floor and in the archives annex. These renovations will include proper temperature and humidity control and a fire suppressant system, as exists in the renovated area of the Library.

**Priority 3: Enhance Exhibition Program**

The creation of the William D. Rondina and Giovanni Foroni LoFaro Gallery in 2002 gave the Mertz Library a unique and valuable opportunity to display Library materials, which in turn promotes the collections, encourages research, and can inspire others to enrich the collections through donations. Since that time, many excellent exhibitions have been mounted with great critical acclaim, including *Paradise in Print, Dutch Watercolors,* and *Flowers by Redouté.* The New York Sun described a recent exhibition, “…the longer that you look at these botanicals, the more enraptured you become…”, and The New York Times observed, “…almost every wall and display offers some startling revelation about how Caribbean flora affected humanity over the last 500 years.” The public is being sought to enhance the exhibitions' profiles and create broader international appeal. Online and interactive technologies will be employed to enhance the experience for the visitor.

A long range plan for Library exhibitions will be created that ties them into the exhibition planning throughout the Garden when appropriate, and actively markets them to build visitation. Collaborations with other institutions are being sought to enhance the exhibitions' profiles and create broader international appeal. Online and interactive technologies will be employed to enhance the experience for the visitor.

**Build Endowment**

Building an endowment to support the programs of the Library is an important goal for the next plan period. Endowments are needed to sustain the acquisition of new information and provide support for collection care and management. To assure that the LuEsther T. Mertz Library can continue its vital role at the center of botanical and horticultural research in a rapidly changing environment and achieve the same preeminence in a digital age it
Summary Statement

The many assets of the LuEsther T. Mertz Library, built up over a century, establish it as the leading library of its kind. Holding approximately 80% of the world’s published literature on plant systematics and floristics, its contribution to plant science research and education is of vital importance. In recent years the Library began to adapt its collections and services to online usage with the creation of an online catalog; however other libraries have made considerably more progress in this area. Modernization initiatives included in the plan will catapult the Library forward—making much more of its collections available digitally, substantially increasing access, and integrating its materials with other electronic databases at the Garden. At the same time, the collection will be strengthened, conservation efforts will be enhanced, and exhibitions will be shared with the public. The realization of these ambitious goals will solidify the Library’s position as the most important botanical research library in the world.

now enjoys in a print world, financial support of a more permanent nature is sought. Investment in the Library has never been more critical—to maintain relevance, to take advantage of technological advances to exponentially expand audience, and to assure that the contribution the Garden makes in this area reflects its historical tradition and strength.

Kengai, one of the magnificent horticultural displays created for the exhibition, Kiku: The Art of the Japanese Chrysanthemum

Marketing, Business Development, and the Visitor Experience

Priorities and Strategic Investments 2009–2015

Solidify and Promote Institutional Positioning and Branding
- Priority 1: Conduct Rigorous Market Research
- Priority 2: Develop and Implement Brand Strategy
Sustain and Increase Visitation
- Priority 1: Continue the Ambitious Exhibition Program
- Priority 2: Increase Advertising and Marketing
- Priority 3: Target New Audiences
- Priority 4: Improve the Visitor Experience
Grow New Businesses
- Priority 1: Launch an E-Retail Business
- Priority 2: Grow the Licensing Business
Summary Statement
Over the last decade, The New York Botanical Garden has undergone a dramatic transformation and achieved significant audience development results. Today’s Garden audience, compared to that of ten years ago, is not only larger and visiting longer but also younger, highly educated, wealthier, more suburban, and increasingly demanding. This audience seeks an experience synchronous with the essence of the Garden’s mission, programs, and offerings. The Garden has built this audience methodically, utilizing traditional techniques such as improving and adding physical facilities; increasing the quality of grounds, gardens, and collections; enriching programs and improving the visitor experience and communicating and marketing these improvements to ever widening and numerous existing and potential audiences. Repeat visitation and word-of-mouth references have been fundamental elements of the Garden’s success.

Building on this foundation in *A New Strategic Plan: Into the 21st Century, 2009–2015*, the Garden is poised for a dramatic breakthrough in audience growth. The Garden will harness its enhanced stature, enriched offerings, and higher visibility and combine those attributes with clear national and international trends for all things natural, green, and sustainable, to achieve previously unattainable levels of visitation and earned income. As consumer interest in the environment has grown rapidly over the last decade, so too has awareness of the Garden’s increased prominence as one of the world’s leading botanical gardens. The Garden has made significant progress in positioning, promoting, and programming for the current and sought-after Garden visitor, the visitor who is the consumer of the Garden experience. Investments in capital projects and programs such as the construction of the Leon Levy Visitor Center, Everett Children’s Adventure Garden, Shop in the Garden, William and Lynda Steere Herbarium, LuEsther T. Mertz Library, Home Gardening Center, Pfizer Plant Research Laboratory, and renovations to the Enid A. Haupt Conservatory as well as an ambitious exhibition program facilitated higher Garden visibility on the local, national, and international levels. The Garden is increasingly understood to be an important institution for botanical science research, a definitive source for information about plants, an exquisitely tended landscape, and a place to enjoy the quiet beauties of nature. Today the Garden is reaping many benefits of this transformation, including earned income growth.

By necessity cultural institutions are turning to earned income to help fund their mission-driven operations. Earned income departments are vital to realizing the mission of the Garden as net income provides support for the institution. At the Garden, revenue from business activities has grown from 24% of total annual operating revenue in fiscal 1992 to 28% in fiscal 2008. During this plan, a shift in revenue mix is expected: contributed income and government support will decline while earned income and endowment income will rise as a percent of the total. The goal for gross earned income is to provide 35% of total annual operating revenue by fiscal 2015, increasing from $17.4 million in fiscal 2008 to $34.3 million in fiscal 2015. The contribution of net income to annual operating revenue will grow from $2.8 million to $7.7 million over the same time period. This will be due in large part to a targeted growth in visitation from 775,000 in fiscal 2008 to 1.1 million in fiscal 2016.
Solidify and Promote Institutional Positioning and Branding

Considerable progress was made in growing awareness of the many facets of the Garden in recent years. The Garden’s track record in the media increased tenfold since the early 1990s, especially in the area of national print and electronic media. New facility openings, large-scale exhibitions, and comprehensive landscape and garden restoration projects provided the opportunity and evidence to promote the message of Garden-wide renaissance to the media. The Garden’s visitor Web site was rebuilt during the last plan into an exciting, dynamic, functional, and visitor-friendly tool for marketing the Garden’s programs, yielding triple the number of hits per year. Press coverage of science at the Garden has increased as well with the creation of new programs and facilities and the addition of a Communications staff person concentrating on raising the science profile. As a result, the general public now has higher awareness of the Garden and a keener understanding of its mission in horticulture, science, and education.

The focus of the Garden’s marketing efforts during this plan will be reaching new audiences while being true to the values, spirit, and beauty that make the Garden beloved by its current core audiences. In order to accomplish this goal, the Garden’s institutional identity must be solid and well communicated in a crowded marketplace. Market research, data capture and mining, and analysis are required to increase the Garden’s understanding of its audience and to determine how messages need to be created, refined, and adjusted in order to be compelling to varied audiences. Establishing and communicating a powerful brand is both an opportunity and a challenge given the Garden’s richness and complexity. That said, the Garden’s diverse programs, astonishing beauty, and commanding excellence endow the name The New York Botanical Garden with peerless credibility. This has never been more true than at this moment, since the Garden’s visibility, attendance, and stature, as well as the public’s interest in all things environmental, stand at record levels.

There are two priorities that will be pursued to strengthen the Garden’s position and branding and to help achieve this dramatic audience growth.

Priority 1: Conduct Rigorous Market Research
Priority 2: Develop and Implement Brand Strategy

Priority 1: Conduct Rigorous Market Research

With past market research, the Garden established baseline demographic information about its visitors. This is fluid research, however, and needs to be continually updated to ascertain current consumer thinking. In the new plan, research will include quantitative and qualitative studies of three different groups of individuals designed to yield actionable information: 1) current and lapsed members; 2) non-visitors, and 3) non-Member visitors. Members will be queried about their perception of the Garden—its programs, services, and amenities, what they think about their Membership benefits and communications, and where they get information about cultural activities. Non-visitors fitting the Garden’s demographic profile will be questioned about their perception of the Garden, how they spend their leisure time, and where they learn about cultural activities. Many of these same questions will also be asked of non-Member visitors. A major survey of one of these groups is planned for every year. In addition, exhibition-specific surveys and online surveys will be conducted with regularity to take the pulse of the Garden’s constituency. Competitive research will be conducted frequently to understand best practices in the marketplace and consumer expectations.

Data mining and analysis will also enable the Garden to further understand its visitors. As the Garden’s most likely prospects for continued future visits, information about them is invaluable. A new ticketing system will increase the amount of information the Garden can collect about them. Data retrieved will show who the visitors are, where they come from, how they got to the Garden, and what they saw when they were on site. Information of this nature will not only enable the Garden to target its market more efficiently, but it will also help inform future programs.

Obtaining information about current and potential visitors is critical to shaping the Garden’s programmatic offerings, constructing effective marketing plans, and ultimately generating increased earned income to support annual operations.

Priority 2: Develop and Implement Brand Strategy

The Garden will retain a brand development and marketing consultant to interpret the market research findings and, accordingly, advise the best ways to communicate the Garden’s strengths in a concise, unified, and compelling fashion. The consultant will assist in assessing the Garden’s position in the marketplace as seen by the consumer public. The Garden’s position, reputation, and appeal compared to other New York City cultural institutions and selected destinations will be evaluated. Communications about the Garden’s programs in science aimed at the lay audience will be examined. Lastly the public’s understanding of the comparative positions of all three programmatic areas—horticulture, science, and education—will be studied.
In keeping with its mission and core values, the Garden will utilize the branding study to inform its offerings in exhibitions and public programming—key audience drivers. The Garden will devise a plan to incorporate the brand—its essence in words, look, and feel.

Once the brand and strategy are defined, the Garden will execute a unified marketing and communications program that reinforces the message across all channels and media. While recent years have been characterized by greater consistency of message in marketing, utilizing the Conservatory as the Garden’s visual icon, there are still improvements to be made. Some marketing materials do not have a unified voice and may be creating mixed messages. During the plan, the Garden’s exhibitions, external communications, advertising, Web site, collateral materials, and overall visitor experience will be revised to convey a seamless whole what is best about the Garden, why its mission is important, and how the audience can engage with the Garden. Resources will be added to achieve this goal including implementation of a Digital Asset Management system (to manage the vast amount of Garden images) and personnel to oversee it and additional editorial resources for print and electronic publications. In so doing, the Garden will enhance its reputation, attract greater visitation, increase membership, increase enrollment in Continuing Education classes, sell more merchandise at Shop in the Garden and online, and generate more earned income.

The New York Botanical Garden has been making steady progress in attracting new audiences and enhancing the visitor experience. In the late 1980s, the Botanical Garden took steps to reclaim the charter “botanical garden.” The Garden was perceived by some to be a public park, not a museum of plants, or even a botanical garden in the early 1990s, when planning established the need to restore the Conservatory, build the Herbarium, enhance the Library, create the Children’s Adventure Garden, build the Visitor Center, restore the landscape, gardens, and collections, and address numerous infrastructure demands. These improvements provided the foundation for a program expansion in recent years centered around blockbuster exhibitions, which continue to attract record numbers of visitors. While the audience comes to see the exhibitions, they leave with a much greater appreciation of the Garden itself: the historic landscape and gardens, extensive architecture, and stellar collections.

Building on this foundation, the priorities to grow visitation in the coming plan are:

- Priority 1: Continue the Ambitious Exhibition Program
- Priority 2: Increase Advertising and Marketing
- Priority 3: Target New Audiences
- Priority 4: Improve the Visitor Experience

Priority 1: Continue the Ambitious Exhibition Program

The exhibition program continues to be the primary vehicle for attracting visitors to the Garden. It keeps the Garden top-of-mind for its audience, creates a sense of urgency to visit now, and fulfills both aesthetic and educational expectations. It also allows the Garden to penetrate niche markets and develop new audiences.

With Chihuly at The New York Botanical Garden, exhibition programming drew massive numbers of visitors. Visitation grew to 843,000 in fiscal 2007, with many new people introduced to the Garden. Membership swelled and retail sales hit record levels. Diverse marketing and advertising ensured the success of this large-scale undertaking. The combination of an art exhibition in a garden with the work of an exceptionally popular artist, backed by strong marketing, reaped exceptional results. The challenges in the future will be to establish the Garden’s reputation as a destination for art exhibitions and to present displays of similar appeal.

The Garden currently mounts five exhibitions annually: The Orchid Show, Spring Show (Darwin’s Garden: An Evolutionary Adventure in fiscal 2008), Summer Art Exhibition (Moore in America: Monumental Sculpture at The New York Botanical Garden in fiscal 2008), Kiku: The Art of the Japanese Chrysanthemum and the Holiday Train Show. To ensure the scale and quality of the exhibitions, the Garden has instilled long-range exhibition planning with a five-to-seven-year timeline. This cross-institutional planning coordinates exhibitions among numerous Garden venues, engenders collaborations with other institutions, reviews competitive offerings, keeps repeat exhibitions fresh and new, and promotes profitability of exhibitions. This planning also seeks longer timelines for exhibitions in order to facilitate sponsorship opportunities and explores new ideas for horticulture, science, and art exhibitions as well as for other large-scale programming such as concert series. Possible horticulture exhibitions include “Last Great Places on Earth” and exhibitions featuring superlative garden design. New science exhibitions will be considered for the Britton Science Rotunda and Gallery, Arthur and Janet Ross Gallery, and Enid A. Haupt Conservatory, perhaps emphasizing or including conservation and climate change themes. The Garden will continue to explore new themes and approaches for existing exhibitions.

Priority 2: Increase Advertising and Marketing

Enriched programming will lead to increased visitation only if the Garden makes a sufficient investment in advertising and marketing to ensure that people are aware of its exceptional offerings. Prior to the Chihuly exhibition, marketing budgets were small and restricted to a narrow range of print and radio media. Going forward media budgets will be bolstered to include a diverse mix of print, television, radio, online, direct mail, and outdoor promotion, resulting in deeper penetration and wider reach. The overall budget is important, but so, too, are the strategies used in placing the advertising dollars.
A long-term exhibition calendar will enable the Garden to buy media more efficiently and economically. Advertising will convey, to the extent possible, a dual message: promotion of the exhibitions and communication of the institutional value of the Garden. The Garden will seek value-added promotional opportunities such as media partnerships to further the Garden’s marketing dollars, increase awareness of its offerings and enhance programming possibilities. Leveraging of the Garden’s relationships with corporate and media sponsors, more likely because of long-term exhibition calendars and high-quality exhibitions, will multiply the value of media investment. Lastly as a result of a recent advertising agency review, the Garden has engaged a new strategic partner in building its audience and brand.

Priority 3: Target New Audiences

On-site demographic research reveals that the average Garden visitor is not unlike that at other cultural institutions: highly educated, middle-aged, with annual income levels of $70–$90,000. The largest portions of the Garden’s visitors hail from Manhattan, nearby northern suburbs, and the Bronx, although significant numbers also come from the surrounding tri-state area.

Two groups are expected to grow rapidly in the coming decade according to a study conducted by New York City Department of City Planning: the elderly and foreign-born residents. The increase in the elderly population is projected to be 10% by 2015 and 42% by 2030. The immigrant population grew by 47% from 1990 to 2000, compared to a 17% increase for the total population. The Garden will take advantage of these demographic shifts by targeting its media to attract them.

Visitor data obtained during the Chihuly exhibition suggest that there is some potential to develop visitation from Long Island, New Jersey, Westchester, and Connecticut. While the Garden currently advertises in local media, it will further study the potential to grow in this area during the plan. The mining of data mentioned above will be extremely helpful in this effort.

Another market for the Garden to develop further is families. The continued success of the Holiday Train Show points to the potential in this area. A Family Membership direct-mail campaign is being explored. Targeted media buys in such publications as Time Out New York Kids and Big Apple Parents as well as advertising on New York City family online sites will also be pursued.

The Garden’s exhibitions are a prime means of attracting new audiences. The five annual exhibitions cited above offer something for everyone at the Garden. The Holiday Train Show appeals to families while The Orchid Show and Kiku: The Art of the Japanese Chrysanthemum reach the core garden and flower lovers as well as allow the Garden to expand into new cultural communities. The Darwin exhibition will attract those interested in science and horticulture, and the burgeoning summer art exhibition program taps into the huge number of art lovers who come for the art and leave enriched and inspired by all the Garden has to offer.

Two markets, group sales and tourism, have been largely untapped at the Garden, but allow for growth in visitation at the Garden’s least busy times during the week. The competitive strategic analysis revealed that the Garden is experiencing less visitation in group sales and tourism compared with leading botanical gardens and museums.

Tremendous potential in group sales is centered on abundant garden clubs, horticulture societies, senior centers, and other groups looking for activities for their members. The plan to tap this potential includes increasing the Garden’s knowledge of the group tour market, attending conferences, direct mail, and outbound business-to-business calling in addition to increasing staff. The goal for group sales is to grow gross group revenue by over 300% from fiscal 2008 to 2015.

Tourism continues to blossom in New York City, and the Garden is ripe to take advantage of the boom. The New York City Department of City Planning study projected that tourists will increase from 44 million to 50 million by 2015. Intensified efforts will include working more closely with NYC & Co., destination management companies, the American Bus Association, and the National Tourism Association, among others. The Garden will cultivate concierges, especially in hotels around Grand Central Terminal, and work strategically with Metro-North Railroad on packages and marketing. Publicity opportunities will be actively sought in travel guidebooks, online travel sites, and airline publications; advertising will be placed in key travel publications; and keywords will be purchased to drive visitors to the Garden’s Web site when they look for gardens to visit in New York City. A Director of Group Sales and Tourism will be hired to develop the potential in these markets.

Lastly the Garden will continue to build on the significant success of the past few years in attracting new Members. While the Garden’s Membership is now over 30,000, up from 12,600 just over a decade ago, increasing Member ranks and visitation is key to success in earned income. The Garden needs to understand much more about existing Members—who are they, how often they visit, their overall economic impact on the Garden compared to non-Member visitors, and how best to leverage their Membership and commitment to the Garden. The research described above will help answer these questions. A Virtual Membership will be explored for people who are unable to visit the Garden but wish to enjoy some benefits of Membership. Capitalizing on increased interest in all things environmental, the Garden can, with the creation of such a Membership category, promote and fund its mission-driven programs to individuals living beyond accessible range of the Garden. Benchmarking revealed that other cultural institutions have successfully created such a classification of Membership, especially those with an environmental mission. Analysis of related benefits such as an online newsletter and access to our science resources will be the first step.
Priority 4: Improve the Visitor Experience

Recently the quality of the visitor experience has significantly improved with the construction of new amenities and the strengthening of the Visitor Services department. Significant challenges remain, however, many of which stem from increasing exhibition attendance. Assuring adequate capacity to handle the larger number of visitors is key. Two areas in particular require an investment of time and money: parking and logistical planning.

In this plan, the largest capital investment will be the construction of a parking garage to better handle growing visitor auto traffic. Onsite parking is extremely limited. Although off-site parking venues have been utilized, their availability cannot be relied upon at all times. On peak days, the Garden can park as many as 1,000 vehicles. The Garden has purchased property located across the street from its northern boundary, just outside the Mosholu Gate, less than 400 feet away. On this site it will build a 303,000-square foot facility, with eight parking levels large enough to park 825 cars at once. Designed by Polhek Partnership and Desman Associates, the facility will feature a façade covered in plant material. Although parking garages are not eligible for Leadership in Energy and Environmental Design (LEED) Green Building Rating System certification, the Garden's garage has been designed to meet as many criteria as possible.

Visitor capacity challenges are being addressed through improved logistical planning. The Garden continues to refine logistical planning to produce the best possible visitor experience. Timed ticketing, instituted with the 2008 Holiday Train Show, has improved the experience for those attending, but it will be necessary to analyze how many intended visitors could not attend and how to accommodate them in the future. One of the possibilities that will be explored is expansion of the footprint of our most popular exhibitions.

The quality of the visitor experience will be enhanced through an enriched program combining information about the Garden, exhibitions, and vibrant public programs. A Public Programs Facility will be added to the Leon Levy Visitor Center to accommodate expanded programming related to exhibitions. Signage and interpretation throughout the Garden will be upgraded over the plan. Maps will be made more functional and user-friendly, and directional signs will be made more flexible to better adapt to our programmatic offerings. One of the first advances to enrich programming was cell phone tours, already a huge success. In the first three months of fiscal 2008, over 3,500 visitors obtained insight into and knowledge of the riches in the Garden's exhibitions and landscape. The Garden will increase its interpretive signage, deepening the content to convey more information about exhibitions, the permanent collections, and the Garden itself. This will be a joint effort between Marketing and Horticulture with the help of a wayfinding consultant and the addition of an Interpretive Specialist to the staff.

Public programs will also be strengthened to augment exhibitions, creating a richer, more complete visitor experience. An already strong Visitor Services management staff will be supplemented by a customer service consultant to provide training and set up systems to ensure the highest level of customer service.

All of these improvements will be shaped and evaluated through the market research described above. Understanding what would enhance a visit the most is paramount. This research will also provide important evaluation of the improvements made to be able to determine their effectiveness.

The goals for earned income can be achieved only by generating revenue beyond admissions and parking. On-site retail, also related to visitation, will be an important factor in increasing the percent of total revenue that earned income contributes during the plan. While total gross revenue for Shop in the Garden is projected to grow by 70% from fiscal 2008 to 2015, net income from this source will double to $600,000. The Garden’s off-site businesses expect to achieve the most dramatic growth. The goal for off-site businesses is to triple their net contribution to the annual operating budget by the end of the plan, to $1.5 million. The priorities identified for the plan are:

Priority 1: Launch an E-Retail Business
Priority 2: Grow the Licensing Business

Priority 1: Launch an E-Retail Business

The Garden’s retail operation, Shop in the Garden, has benefited greatly from both its new premises, occupied during the last plan, and growing visitation. Its success has given the Garden the ability to expand its online shopping site which launched in fiscal 2008, dramatically increasing in the process both its merchandise offerings and its market. While the Shop sold merchandise previously online, the effort was hampered because it was not connected to the inventory system and it offered a small selection. Leveraging Shop in the Garden’s expertise, the new E-retail site, www.nybgshop.org, has real-time inventory capabilities and shipment tracking, dedicated customer service, and cross-selling and upselling capabilities across other areas of the institution, including Membership. The new site enables the Garden to offer an expanded range of merchandise, including large items shipped directly from manufacturers.

The target market for E-retail is principally women, ages 25–54, educated, affluent, and with an interest in garden-inspired products. In addition, the Garden will appeal to individuals who enjoy purchasing items that support cultural institutions. The audience for E-retail is national in scope. While the Shop created the Web site with Member interests in mind, the site offers an opportunity to extend the Garden brand outside its primary tri-state marketplace. An ancillary market in corporate gifts, selling to both Garden Corporate Members and other business customers will be pursued.
To build audience volume, E-retail will focus on developing online partnerships to generate traffic and syndicate the Garden’s editorial content to other Web sites in exchange for online promotion. These partnerships will be supplemented with certain targeted advertising purchases, principally using Google AdWords. Customer relationship tactics, including development of e-mail lists and programs to retain and reactivate prior customers, will grow site traffic and sales volume. In addition, E-retail will use the Garden’s online media room to generate publicity.

Principal competitors are other quality, niche, online retailers who seek similar customers. Particular attention will be paid to those retailers who demonstrate best practices in product selection, customer service, and relationship-building such as MoMA, Williams-Sonoma, and Design Within Reach.

E-retail plans to break even and become profitable during fiscal 2010. While the initial investment capital for the project has been raised, continued investment will be required for advertising and marketing and to bring on adequate staff to handle the volume of business. The projected return after the initial investment time period is similar to that for Shop in the Garden, 8 to 10% of gross revenue.

Priority 2: Grow the Licensing Business

The Garden has identified licensing as an area with significant growth potential in this plan and has begun working with an agency to build the business. With no dedicated staff to develop the business and lacking consultant support, the Garden had previously just a handful of licensees, mostly of printed product that produced nominal revenue and no significant brand visibility in the marketplace. The goal is to develop a strong image and consumer brand that will spread awareness and appreciation for the Garden nationally and internationally as well as provide a new revenue stream not dependent on visitation.

Criteria for future licensees include strength in their market sector, standards of quality similar to the Garden’s, and a slate of manufacturers who are experts in their own categories. Each licensee takes on the risk of creating, marketing, and selling the licensed product line. The agent and the Garden’s licensing staff work to coordinate these businesses so that their products, marketing, and sales efforts are all compatible. Over time, brand awareness grows and more partnerships are formed. This building block process should lead to one or two large deals that showcase the brand and become the major revenue producers.

In recent years, the retail climate has shifted. Now a brand owner often aligns him/herself with one major retail partner, such as a large or national retail chain. The brand owner offers the partner brand exclusivity in return for commitment to carry significant quantities of merchandise and to feature the brand prominently in stores and marketing efforts. This approach creates a “hub” for product, a “home” where consumers know to look for the merchandise. It also provides incentive for the retailer to promote and support the product line. The Garden is laying the foundation to partner with a large retail chain by seeking a partnership with a mid-sized retailer to establish a track record.

The goal for the plan is to have ten revenue-producing licensees, nine of which are already on board. The business plan projects that as the licensing program matures with break even in fiscal 2009, profits will grow to $1.1 million by the end of the plan, a net profit margin of 51%.

For Marketing, Business Development, and the Visitor Experience, this plan will mark an increased focus on earned income to achieve the Garden’s mission. Recently the Garden has built capacity and the visitor experience to the point where dramatic earned revenue growth is possible. The physical infrastructure is largely in place, a strong Visitor Services department ensures the quality of the visit experience, and programming has become much more robust and is communicated to the public through aggressive advertising campaigns and widespread media coverage. The Garden’s businesses such as Shop in the Garden have grown to the point of delivering substantial returns. These accomplishments augur well for the work ahead in Marketing, Business Development, and the Visitor Experience.

To build earned income during this strategic plan, the Garden must strengthen institutional positioning and branding, build visitation, and develop new businesses. Understanding the market and communicating a compelling brand identity will enable the Garden to build awareness. Visitation will increase, driven by exciting exhibitions, penetrating new markets, creating powerful advertising and marketing campaigns, and improving the visitor experience. More earned income from visitation-related activities will be supplemented by off-site revenue from new businesses, E-retail, and licensing.
Management and Infrastructure

Priorities and Strategic Investments 2009–2015

Operations .................................................. 89
Administration ........................................... 90
Security ...................................................... 91
Information Technology .............................. 92
Finance and Planning ................................. 93
Government and Community Relations ......... 94
Development ............................................. 95

Summary Statement ..................................... 96
Inextricably linked with the program areas, the several Garden departments that deal with Management and Infrastructure provide valuable support and resources. Working in partnership, these departments continually seek collaborative ways to achieve ever more ambitious goals in the most efficient way. Whether enhancing the visitor experience (Security and Operations), seeking and supporting the best possible employees (Administration), facilitating communication and developing systems (Information Technology), tracking and monitoring resources (Finance and Planning) or raising funds to make it all possible (Development and Government and Community Relations), the Garden works in unison to fully realize its mission.

Keeping pace with the planned growth of the Garden over the period 2009–2015 is a priority across all Management and Infrastructure departments. These departments consider the protection of people and the Garden’s assets—collections (living, library, herbarium, digital), intellectual, and financial—as their primary concern. They do this every day of every year. As the level of activity increases at the Garden, the responsibility of the various departments that comprise the Management and Infrastructure area also grows. As measured by growth in the budget, increases in staff and additional capital projects, fiscal 2009 through 2015 will be a period of considerable activity which must be managed and supported. This expansion requires the Garden to examine how it does business, focusing on sustainability and maximizing resources. Beyond just business as usual, innovations in many areas will enable and facilitate programmatic advancements in various ways. Process improvements and efficiencies are key. Technology is a chief factor along with taking advantage of changes in the environment—whether in employment, government, or finance.

Not surprisingly, the area needing much investment is Information Technology, a field characterized by rapid change and almost instant obsolescence. Development requires an infusion of staff to achieve the ambitious goals of this plan. Investment in Security and Operations is directly related to program goals and the commensurate increase in visitation and facilities. Operations will also make a significant contribution to an important plan goal: energy conservation and increased sustainability. Administration will provide improved services to a growing staff and seek to augment personnel needs with volunteers where possible. Government and Community Relations will take advantage of the alignment of Garden programming with growing interest on the part of the public and government in the environment and education. Lastly Finance will carry out its fiduciary responsibility, tracking and monitoring resources with the help of upgraded systems. Without implementation of these initiatives in Management and Infrastructure, the program plans outlined in previous sections will be all but impossible.
Operations

The Garden's Operations department is responsible for Maintenance, Engineering, and Custodial Services throughout the Garden. Many new facilities were added in the last two plans, significantly expanding the department's responsibilities. The buildings require broad knowledge and expertise as they range from exquisite, 19th-century landmark buildings to state-of-the-art, technologically sophisticated recent constructions. Operations staffing has not kept up with the number of new buildings and the increased square footage they manage, and this discrepancy will be addressed in the plan. Additions include both maintainers and managers to operate and oversee existing and newly planned facilities such as the parking garage.

In order to provide the best possible service, the Operations work area will be upgraded. Trade shops will be renovated and on-site storage locations for tools and equipment will be added. Efficiency will be enhanced by the creation of a computerized work-order system to process and prioritize jobs requests.

The Operations department will play a leading role in one of the most important Garden-wide initiatives of the plan: sustainability. The Garden has been involved in energy conservation programs for over 15 years, increasingly converting to more energy efficient operations. Most recently it has participated in the New York Power Authority's program, Peak Load Management, and reduced its demand by up to 15% as needed. The Garden will continue its work in energy efficiency, increasing its interval meters and installing diesel scrubbing equipment. A Compressed Natural Gas (CNG) station was built on the grounds in 1997 with the help of funding from New York City, and all seven of the Garden's trams have been converted to CNG, reducing emissions by over 40%. Three other Operations vehicles have been converted to CNG, and the Garden will continue to update its fleet over the plan period. Having already converted 75% of its heating plants to dual fuel using natural gas as the primary fuel, the Garden will convert the balance during this plan.

The Garden has completed phase one of the Garden-wide computerized Building Management System, which has enabled it to improve efficiency and emergency response. Monitoring of equipment operation and climate control of many of the Garden's buildings is now done from a central facility. The remaining buildings will be added during the plan period. The new HVAC system being installed in the Library building has been designed with a geothermal condensing unit which will allow the Garden to cool the condensing water using underground wells. This will reduce both electrical demand as well as release of heat into the atmosphere.

The biggest challenge in the upcoming plan is the design and construction of co-generation plants. Such plants would allow the Garden to manufacture its own electrical power using clean natural gas and utilizing the byproduct heat to maintain building temperature. Two energy sources are obtained from just one fuel source and the Garden could remove its electrical demand from the overburdened grid. The first step is to assess the viability of such plants for the Garden and where they would best be located on site.

Administration

Human Resources

In partnership with the program managers, Administration recruits, trains, and helps retain all Garden employees. The Garden's full-time staff, currently at 439, is planned to increase by 23% to 538 by fiscal 2015. Changes in the employment marketplace make recruitment a continuing challenge. The number and quality of skilled workers is declining and trained horticulturists are increasingly hard to find nationwide according to various industry surveys and government sources.

As the Garden is located in an expensive urban area, it is sometimes difficult to attract people to relocate from a place where the cost of living may be significantly less. Voluntary turnover has more than doubled nationally in the past ten years according to the U.S. Department of Labor, and turnover remains high at the Garden. The Society of Human Resource Management conducted a study in 2005 which concluded that lack of opportunity for career growth, learning, and development is a leading cause of turnover. Each generation has a different perspective about work, job security, benefits, and work/life balance, and during the coming plan period the generational mix will change considerably.

Administration will work with the management of the Garden to adapt pay structures, benefit plans, work rules, and staff development programs to attract, train, and retain a paid workforce that is becoming ever more diverse. A salary and benefits review will be conducted with the help of outside consultants, and the Garden will broaden and update its options to meet varying needs. A Benefits Manager has recently been hired to administer the many complex programs. Given the greater importance of work/life balance for the younger generation of workers, the Garden will review its policies and work rules such as vacation, sick and holiday time off, flexible hours, and telecommuting. To lessen turnover the Garden will work with department heads to identify and develop talented employees through staff development, mentoring, and professional and vocational training. Greater efficiencies can be gained with an Applicant Tracking System, to be implemented during this plan. This online NYBG career center will enable applicants to view and apply for open positions and allow hiring managers to review candidates' resumes efficiently.

Volunteers

Employees’ efforts can be extended through cultivation of the volunteer corps and the non-traditional worker. There are many current examples of this throughout the Garden, but there are opportunities to increase this by providing more challenging and meaningful work for volunteers. Administration will create a Volunteer Professionals in the Workplace program to capitalize on this potential. Eventually some of these volunteers may become paid employees, unpaid employees with benefits, or volunteers with a small stipend, depending on their needs. These sorts of arrangements are often of interest to older employees and enable the Garden to benefit from their expertise.
Security

The Garden’s Security department is responsible for protecting and securing property, staff, students, and the Garden’s more than 750,000 annual visitors. With only 51 full-time personnel, the Security staff accomplishes this task admirably, with no serious crimes against people in many years. It succeeds at this in part due to the instruction of an annual training program during the most recently concluded strategic plan. Now the department wishes to expand its training program to a semianual program emphasizing the “customer service” role of the Security department. Related to the increase in visitation, the Garden has seen a growing number of first aid requests (180 in the last year). A first-aid technician will be hired to provide emergency response for first aid and train the security and visitor services staffs on CPR and the latest first-aid techniques. Additional staff will be hired to accommodate the increase in visitation as well. Since the Security department’s efforts are enhanced with technology, the access control and surveillance systems will be upgraded throughout the Garden. The biggest new program initiative for the department to accommodate is the parking garage for which Security will be adding staff.

Increasingly programs are taking place at night or even at the end of the day and visitors are in the Garden after dark. While the Garden has installed lighting on Perennial Garden Way, more lighting is necessary in places such as Garden Way, Azalea Way, and the Snuff Mill Road. Additional lighting will both enhance the visitor experience and allow for better security along pathways.

Information Technology

Technology is no longer just a computerized way of doing business or supporting programs at the Garden; in some cases, technology is the program. Technology will enable the Garden to make more information available online for example and provide the tools to make the information useful to an expanded number of users in an expanded number of ways. Technology has made many things possible that could not have been imagined at the outset of the past two plans. At that time the Garden’s technology needs consisted mainly of hardware and software for basic systems. The current plan, reflecting the expanded perspective and capacity that have evolved in technology, recognizes the power of information technology to alter, accelerate, and improve the quality of the Garden’s work.

One of the main challenges in Information Technology is integration of systems. Many systems have been added to serve programmatic needs such as the Library Catalog, Virtual Herbarium, Raiser’s Edge to support fundraising and Membership efforts, Win Retail for Shop in the Garden, ticketing and registration systems, and payroll, personnel, and financial systems. Each system stores its data separately and the databases do not communicate with each other. As a result, data entry is often duplicated, the potential for error increases, and useful synergies go unexplored. A major goal for this plan in Information Technology is the integration of these systems to increase efficiency and expand the number of programmatic initiatives we can undertake.

Major Information Technology programmatic initiatives in the coming plan include creation of the Digital Plant Research Center (described in the International Plant Science Center and LuEsther T. Mertz Library sections above) and development of business systems, many of which are key to the generation of increased earned income. Technology is transforming the visitor experience. The Garden will know its visitors better, develop a variety of interpretive materials, and enhance its communications with visitors outside the gates through the Virtual Conservatory Tour for kids, E-retail for the at-home shopper, and building brand and revenue with the national member. A new comprehensive ticketing system is already in place which enables the Garden to provide advance ticketing and timed ticketing for exhibitions—a means of addressing capacity issues in the Haupt Conservatory and providing a more enjoyable experience for the visitor. To maintain current processes and service levels, let alone to keep pace with the planned growth of the Garden, will require implementation of new administrative systems such as electronic employment application processing, automated time sheets, a Digital Asset Management system (a repository for the Garden’s vast image collections), telephony, and updated financial systems software to take advantage of available cash management services.

Much progress has been made in the area of technology at the Garden over the past 15 years with a small, dedicated staff. While technology personnel have grown in various departments, increases in staff in the administrative IT area have been modest. Looking ahead, the Garden will expand beyond the support and administrative functions in Information Technology to spend much more time on systems development and integration, a necessity if plan initiatives are to be accomplished. As the number and complexity of information systems grow, technologists will be added to manage the programs, systems, and network integrity and to ensure information security. Information Technology support will also be added in program and other administrative departments: a Business Systems Manager in Finance, a Web Editorial Content Manager in Marketing, and an Assistant Curator Bioinformatics in Science.

To accomplish all of this and more, the Garden will address significant infrastructure and personnel needs over the plan period. Developing the “connec-tion” (cabling, switches, routers, network expansion, telephony), expanding information server and data storage capacity, enhancing back-up capabilities, and increasing security systems will be undertaken. Improving access to the data will be accomplished with appropriate access portals and a new web front-end to facilitate data searches.

Finance and Planning

The principle concern of Finance is to preserve the financial strength of the Garden over time. The department is responsible for investment oversight, monitoring asset allocation and assessing investment return and management in
conjunction with the Investment Committee. It also supports the work of the Garden through stringent analysis of the financial implications of all projects and new initiatives that the Garden undertakes.

During the past 15 years, the rejuvenation of the Garden was made possible by the thoughtful development of strategic plans that integrated new program initiatives with complementary capital projects, and a financial plan that kept the focus on needs. The success of the next plan will depend on the Garden's being able to balance revenue and expense, to invest in capital and endowment, and to finance new initiatives in programs and revenue producing opportunities.

Charged with budgeting, monitoring, and reporting on a rapidly increasing array of activity across a complex institution, the Finance and Planning department will add a Business Systems Manager. Integration of finance systems and adding modules to increase efficiency will enable the department to manage the new level of growth planned for the Garden in the next seven years.

**Government and Community Relations**

Public sector support will remain an important component of the Garden’s revenue during the upcoming plan period. Raising awareness and strengthening that support is the responsibility of the Government and Community Relations department. This is accomplished by promoting the Garden’s reputation for excellence in plant science, education, horticulture, and service to the community, organizing those who benefit from those programs and services, and delivering clear messages to all levels of government about the services and programs provided.

Support from government sources is declining as a percent of total Garden revenue, and its character is changing from funding for general operations to competitive and merit-based grants. There may be fewer opportunities for the Garden to apply for this type of funding. As the character of government support changes, the importance of the Garden’s efforts to secure funding will become ever more critical: informing the public and the elected officials about the Garden’s contribution to public education, the community, the New York City community gardening and urban farming movements as well as to science and discovery will be paramount to the success of this plan.

Governmental priorities have never before been more in line with the Garden’s expertise in the areas of conservation, climate change, sustainability, and education can inform and assist governments in carrying out their agendas and programs. With the development of the Conservation Office in Science, climate change and sustainability programs in Horticulture, and professional and curriculum development in Education, the Garden has numerous opportunities to reinforce issues of importance to the public and its government. Additionally the outreach and nutrition programs in Education will appeal to local elected officials, whose constituencies are concerned with these issues.

The Garden’s message will continue to be clearly communicated to governmental officials through the cultivation of strong relationships and by regular outreach to key officials and staff along with the community via special events, briefings, calls, e-mails and letters. The Garden will craft new approaches as well for making its work more visible and understandable including directly approaching agencies such as the new Climate Change office created by New York State, the Mayor’s Sustainability Office for the Year 2030, and the NYC Sustainability Advisory Board. Public outreach will be expanded through increased strategic partnerships for Bronx Green-Up and pursuit of opportunities to testify before New York State Legislative Committees at New York City Council hearings. Building on and creating new alliances and coalitions will also enhance the Garden’s reputation and promote a common agenda.

Coalitions can support a more powerful lobbying effort for funding at all levels of government than any traditional method. As a member of the Cultural Institutions Group (CIG—a coalition of city-owned cultural institutions) and the Coalition of Living Museums (a state-wide group of zoos, botanical gardens and aquaria), the Garden can advance issues of interest to itself and all members of these associations.

Lastly the Garden will explore the possibility of developing new outreach tools to form interest and support around single issues or groups of issues. Using its Web site to inform and motivate its audience communicates the Garden’s commitment to the issues and raises its visibility with government officials.

**Development**

As in past plans, the Garden’s Development department will play a key role in amassing the support required to carry out the plan initiatives. The Garden will accomplish this through raising unrestricted and restricted support for the Annual Fund, plan initiatives, capital projects, and the endowment as set out in the Financial Plan. The backbone of the fundraising effort, the Annual Fund, is projected to grow at 3.5% per year to support ongoing and new plan initiatives, a slower rate than previous plans. Growth in the endowment on the other hand, is projected at 65% over the plan period, with income from the draw funding an increasing portion of the total operating budget, 22% by fiscal 2016.

In order to achieve these ambitious goals, the Garden will seek to expand its donor pool, increasingly reaching out to the next generation while retaining its current base of very generous donors. It will tailor its approach to these individuals to attract and engage them, providing them with the opportunity to pursue their passions, not just fulfill their obligations. An emphasis on strategic philanthropy in the corporate and foundation sectors means greater involvement on the part of the donors there as well. Sponsorship dollars in particular are expected to increase during the plan with the growth in the exhibition program.

As the Garden’s national and international reputation grows, it will give the institution an expanded platform from which to raise contributed revenue.
Philanthropic interest and investment in the environment is increasing, raising funding prospects for the Garden generally and in particular for conservation and climate change initiatives. Children’s science education remains a high funding priority for many institutions and individuals, and the Garden is well positioned as a leader in informal children’s education to attract support. Funding will be sought for such new education initiatives as middle and high school education programs, new biodiversity curricula, and an outreach program.

It will be necessary to add to staff over the plan period to generate this support: to strengthen the research effort, develop new donors, secure gifts, and maintain the very important and increasingly more complex stewardship function.

The support provided by the Management and Infrastructure departments is integral to the accomplishment of A New Strategic Plan: Into the 21st Century, 2009–2015. The personnel adds, process improvements and new technology that have been identified above in Operations, Administration, Security, Finance and Planning, Information Technology, Development, and Government and Community Relations will enable the program areas to accomplish the plan initiatives with alacrity and efficiency, propelling the Garden forward in ever greater realization of its mission.