January 1, 2001

In anticipation of a new era in education, research, and patient care, the UNM Health Sciences Center (HSC) has been involved in a strategic, programmatic, and facilities planning process. The purpose of this endeavor is to determine the direction of the HSC and identify the resulting infrastructure needs. We have completed a framework for a basic strategic plan, identified programmatic goals, and worked with Fanning Bard Tatum/NBBJ to translate those goals into a master facilities plan for the HSC.

After extensive research into program direction, existing space needs and facility conditions, alternate building development strategies were explored within the context of the HSC strategic directions. Access, entry, a sense of place, transportation and parking, sensitivity to the neighborhoods and integration with main campus emerged as key attributes which were blended into the twenty-year plan contained in the following pages.

Our faculty, staff, and students can be proud of the visionary plan that resulted from countless hours of effort. As we enthusiastically greet the future of the UNM HSC, we look forward to working with our local, state, federal and private partners to create an environment where students pursue excellence, where innovative research is unrivaled, and where patients will feel welcome and are assured of receiving the finest treatment possible.

The UNM Health Sciences Center will ask the most important questions in human health and deliver the answers to New Mexico.

Sincerely,

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Interim Vice President for Health Sciences
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1.1 BACKGROUND
The University of New Mexico Health Sciences Center Master Plan is a description of the HSC’s future vision and planned development to the year 2020. The Plan defines and describes a blueprint of the most appropriate long-range development for the HSC along with near-term capital improvements. Health Sciences Center facilities, including University Hospital, comprise much of North Campus with 1,900,000 gross square feet of building area. Over the next 20 years, space demand identified by this Plan is projected to require an additional 1,300,000 gross square feet.

Fanning Bard Tatum Architects, Albuquerque and NBBJ, Seattle, were retained by University Hospital in early 1997 to prepare a Master Plan for the Hospital. That document was subsequently augmented to include a Facility Action Plan that detailed a series of short-term projects identified during work on the larger Plan. In a similar fashion, the scope of the Hospital Master Plan was expanded in June 1999 to include the remainder of the Health Sciences Center.

Several years ago, the University began a major planning effort that culminated in a campus-wide master plan also referred to after its author as the Barton Myers Plan. At the outset, the planning team was asked to build on this previous effort, effectively expanding upon general planning concepts for the North Campus developed in the Barton Myers Plan.

1.2 PROCESS
The planning process was highly interactive. The design team worked with the HSC Leadership Council along with staff of the HSC and University Facility Planning offices during a series of workshops and retreats. This effort dovetailed with simultaneous development by the Health Sciences Center of its Strategic Plan making the planning process that much more productive since faculty and staff were already sensitized by this important visioning exercise.

The Planning effort was structured around ten tasks. Initial stages focused on developing a variety of background information while latter steps involved planning of alternative concepts leading to a composite master plan. The process concluded with review and comment by the Leadership Council, adjustments to the Plan, and preparation of the document. A critical element in reaching the Plan’s objective was determining functional and space needs of the HSC. Demand forecasts for patient services, teaching and research were developed through interviews with staff and faculty. Existing facilities were analyzed to determine capacity, condition, and potential for retrofit. This effort resulted in an awareness of the physical potentials and constraints of the campus and along with space forecasts, led to an array of program driven, development concepts. Alternate planning schemes were prepared and evaluated using criteria that bridged between concepts in the HSC Strategic Plan and this Master Plan. The best elements of each scheme were then incorporated into a composite plan.
1.3 DEVELOPMENT PLAN

Several precepts emerged in the early stages of planning that were instrumental in development of the Master Plan. These include:

- Develop a major, image-setting entry to the North Campus.
- Recognize issues with inadequate existing utilities and accommodate proposed new facilities.
- Improve linkages with Main Campus.
- Maintain the open space concept developed in the Barton Myers Plan. The proposed open space extends from the Duck Pond on Main Campus northward across Lomas Boulevard to the North Campus golf course.
- Complete a secondary circulation system around the campus with a new roadway along its west edge. Develop active pedestrian “streets” through and between buildings.
- Respect existing residential scale and character of neighborhoods to the north and east.
- Maintain the Hospital Master Plan’s “Go West” expansion concept.
- Recognize time-phased relocation of several facilities. These include the North Campus chiller plant, Astronomy and Physics Building, Office of Medical Investigator, Novitski Hall, and parts of the Mental Health Center.

The Master Plan reflects the broad nature of the HSC’s teaching and research programs and clinical services by grouping clusters of new buildings that integrate all three functions. Existing buildings are identified for remodeling, re-use or demolition. Structured parking is located in each cluster for convenience of users as well achieving a more desirable, higher, land-use ratio than possible with surface-only lots.

The axiom of a clearly defined and recognizable entrance to the HSC is combined with the concept of enhancing the north-south campus open space by introduction of a new “wedge” entrance providing an obvious front door to the HSC from Lomas Boulevard. A broad flight of stairs, referred to as “Spanish Steps”, is located at the apex of the wedge creating a visible connection between upper and lower levels of the campus. Finally, the Master Plan addresses circulation issues between emergency and service vehicles and cars and pedestrians by defining pedestrian paths and establishing emergency and service-only access roads.

1.4 IMPLEMENTATION

Based on future square footage projections, the proposed building area of the Health Sciences Center will almost double in the next 20 years. In addition to new construction, existing buildings require varying degrees of renovation and infrastructure needs significant expansion and overhaul. As well, several campus functions must be relocated and their structures demolished to allow future development. Recognizing that the University of New Mexico and the HSC have limited resources, prioritizing planned construction is essential.
2.1 HEALTH SCIENCES CENTER BACKGROUND
In 1994, The University of New Mexico consolidated its health care facilities and programs into a single entity known as the Health Sciences Center. As New Mexico’s largest integrated health treatment and education complex, the Center is vital to the health and well-being of the entire state. The mission of the HSC is to provide highly trained health professionals through innovative clinical education, to enhance community development through extension of health services to the state’s rural and underserved communities, to foster clinical research, and to provide a full range of patient care from preventive to highly specialized services. As well, its mission involves treatment of patients referred by other hospitals that require extensive support services, more care to Medicaid recipients and the uninsured than provided by non-teaching hospitals, and finally, comprehensive care to uninsured veterans through an affiliation with the Veteran’s Administration Hospital in Albuquerque.

The Health Sciences Center is an important economic component of both the Albuquerque metropolitan area and the entire state. In 1998, the HSC employed 6,000 faculty and staff, educated 2,200 students, served 117,000 patients, and recorded over 640,000 ambulatory care clinic visits around New Mexico. In this same year, research grants and contract awards totaled $55 million, further providing jobs and economic support for local businesses.

Academic components employing 700 faculty members are:

- College of Nursing
- College of Pharmacy
- School of Medicine
- Health Sciences Center Library

School of Medicine faculty physicians provide patient care services in all Health Sciences Center clinical facilities. These same facilities also serve as the primary teaching and research settings for its educational programs. These include:

- Children’s Hospital of New Mexico
- Children’s Psychiatric Hospital
- Cancer Research and Treatment Center
- Carrie Tingley Hospital
- Mental Health Center
- University Hospital

2.2 PLANNING HISTORY
Formal planning for the North Campus began with the 1960 General Development Plan (Warnecke Plan) which identified this 185 acre area as the logical location for the proposed Medical Center given its proximity to the Bernalillo County – Indian Hospital, now known as University Hospital and the Public Health Service Indian Hospital. Also included in the Warnecke Plan for the North Campus was the Physical Plant and married and single student housing. Later plans developed in the 70’s and early 80’s further defined the North Campus as chiefly healthcare-related, with the exception of the School of Law, the Physics and Astronomy departments and some Physical Plant facilities.
The general precepts of these early plans provided North Campus development guidelines for its early rapid growth, particularly in the 1970's. In 1990, the Board of Regents adopted UNM 2000, a long-range vision addressing strategic and programmatic goals for the entire University of New Mexico. As an outcome of this document, a number of studies were instigated, including the 1994 UNM Long Range Master Plan. The Long Range Master Plan explored planning strategies, defined the enrollment limit of UNM as 35,000 students and projected a maximum additional building area for both Main and North Campuses as approximately 4.9 million square feet.

The University of New Mexico recently adopted the 1996 Campus Development Plan (Barton Myers Plan) and its 1997 companion report, the University West Development Concept Plan. These documents address the physical consequences of the proposed additional square footage identified in the UNM Long Range Master Plan and provide a design framework and guidelines for long-term development of the Main and North Campuses. The Barton Myers Plan also looked at the distribution and location of new development and began to take into account some of the fundamental problems existing on both Campuses. Those of primary concern identified on the North Campus include pedestrian and vehicular circulation and access, the need for clear linkages between Main and North Campus, and the general lack of identity for the Health Sciences Center.

Along with general directions for improving the quality of campus life, maintaining the existing character of the campus, and developing an environmentally appropriate landscape, the Barton Myers Plan goals for the North Campus can be summarized as follows:

- Create an uninterrupted North-South open space from the Main Campus Duck Pond extending north across Lomas Blvd. to connect with the North Campus Golf Course. This open space should not only be a landscape connection, but also contain pedestrian and bicycle circulation paths that connect Main and North Campus.

- Expand the “ring road” concept established in the Warnecke Plan to a “figure 8” that engages both Main and North Campus.
II. Introduction

- Create multiple entrances from surrounding major arterials at key locations to help define University boundaries and specific areas, such as University Hospital.

- Decrease parking demand by encouraging multi-modal forms of transportation and optimizing use of current and proposed surface and structured parking.

- Formalize land acquisition and development strategies for private property in the University Boulevard area.

In 1997, the team of Fanning Bard Tatum and NBBJ was retained to develop the University Hospital Master Plan. The purpose of the plan was to serve as an organizing guide for a wide range of immediate and long-term physical needs. The intent was to insure that short-term improvements fit into a long range plan, that projects met the objective of improving patient care and teaching environments, and that cost impacts were recognized. The plan recommended a series of improvements to existing facilities as well as building additions to accommodate growing services and replace obsolete facilities.

Simultaneous with work on the Hospital Master Plan, Hospital administration engaged another consultant to prepare a strategic plan. This plan, entitled the Assessment of Clinical Services Development Opportunities (Lash Report), contained a profit-based analysis of Hospital programs that provided clearer direction for future initiatives. In order to put the recommendations of the Lash Report into practice, Hospital leadership requested expansion of the Hospital Master Plan to quantify and prioritize immediate improvements that it recommended. Thus, the Phase One Facility Action Plan was developed as a companion document to the Hospital Plan. This plan identified a total of 10 Action Items and was supported by costs estimates and schedules for each.

As an outgrowth of the Hospital Master Plan, Health Sciences Center leadership determined that the entire Health Sciences Center needed a master plan to help define its identity, propose development guidelines and suggest potential growth directions. Once again, the planning team of Fanning Bard Tatum Architects and NBBJ was asked to expand the scope of its effort. The intent of the Health Sciences Center Master Plan was to define a future vision and identify and describe planned development over a planning horizon of the next twenty years or to the year 2020. It must also review and prioritize projected near-term or five year capital improvements. It needed to adhere to the Barton Myers Plan by working within the parameters already set by that Plan.

A number of factors contributed to this Master Plan. Principal among these were:

- Roles and missions of various components of the HSC
- Projected enrollment
- Program intentions or strategic directions
- Service demands placed by the community and state
- Space program requirements
- Potentials and constraints of HSC campus as well as the surrounding area
- Alternate development concepts
- Costs of renovation vs. new construction
- Costs and benefits of all projects considered
2.3 WORK PROCESS
A ten step “Technical Approach” was devised to systematically develop the expanded Master Plan for the Health Sciences Center. This approach was tailored to specifically address each of the major components of the HSC. In addition, these ten “tasks” are intended to build on the work already completed by the University, including the Barton Myers Plan, which identifies this area as “Precinct G – East / North Campus”. The leadership of the HSC also elected to conduct an in-house strategic planning process to clarify its mission and identify priorities for programs and facilities. The results were compiled in the University of New Mexico Health Sciences Center Strategic and Facilities Planning Process – Fiscal Year 2000 (HSC Strategic Plan). A summary of this document is included in Appendix A.

The tasks were as follows:

**TASK ONE: STAKEHOLDER DESCRIPTIONS**
These descriptions were compiled from existing University documentation as well as from discussions with HSC leaders. The information included evaluating and reviewing:

- Mission statements and descriptions of current operations
- Major issues facing the HSC now and over the next two decades
- Planned near term improvements at the HSC or in the vicinity
- Descriptions of current planning or design efforts
- Resources that could or are being used
- Quality of life issues within the HSC and the adjoining neighborhoods

**TASK TWO: HSC-WIDE DEVELOPMENT PRECEPTS, POTENTIALS & CONSTRAINTS**
Much of this work had already been completed in the Barton Myers Plan. Accordingly, this task involved review and interpretation of that work for the HSC-specific work at hand. The following information was compiled and evaluated:

- Existing and planned land uses and development densities
- Vehicular and pedestrian access and circulation patterns
- Infrastructure
- Topography and geology conditions
- Developable and developed acreage
- Total existing development for each land use including parking
- Incremental development or holding capacity under existing policies within the HSC

**TASK THREE: HSC FACILITIES INVENTORY & ANALYSIS**
The capacity and condition of the existing Health Sciences Center’s facilities are a direct determinant of the types and amounts of incremental space and investment required to accommodate the HSC’s future facility needs. This task required an inventory and assessment of the HSC’s facilities. Each facility received an evaluation that included:

- Architectural features and general condition
- Mechanical and electrical systems
- Structural systems
- Life safety conditions and practices
The focus of the evaluation was not detailed, design-related, remedial actions and costs, but rather identifications of:

- Major obsolescence and/or conditions warranting replacement
- Conditions requiring major curative actions and investments to achieve modern functionality for academic, service or research occupancies
- Conditions requiring comparatively inconsequential improvements and investments

The functional and building systems analysis involved:

- Review of existing drawings
- A walk-through of representative spaces and visual inspection
- Application of each discipline’s best professional judgment as to existing conditions and appropriate remedial suggestions
- Summary documentation of apparent facility conditions, space utilization therein, building systems and their conditions, and curative action for each facility

**TASK FOUR: IMMEDIATE STAKEHOLDER-SPECIFIC DEVELOPMENT PROGRAMS & DESCRIPTIONS**

One of the major determinants of the HSC Master Plan, the forecast of development needs and plans for each stakeholder, were critically reviewed in this task.

Within this task we compiled workload forecasts for several HSC functions that were translated into estimates of functional and space requirements. The functions for which demand estimates were compiled are:

- Mental Health Center
- Children’s Psychiatric Hospital
- Carrie Tingley Hospital

For each of these programs we assembled:

- Descriptions of current patient care programs and services
- Historical workload data for each recognized service
- Demographic service areas and demographic projections
- Descriptions of potential future models forecast methodologies and assumptions
- Forecast workload volumes for each service

The resultant volume forecasts were applied to estimate the normative amounts of each space type for both current and future service volumes.

The space forecasts for the other HSC components were compiled from existing HSC estimates. The intent was not to necessarily “re-do” any existing plans, but rather to verify their suitability for the HSC. The effort identified already determined development needs and strategies that would cross “boundaries”, benefit multiple agendas, and cost-effectively yield an improved working environment in the Center.
**TASK FIVE: HSC URBAN DESIGN ASSESSMENT**

A perceptual recognition that one is entering or within a Health Sciences Center “neighborhood” or area populated by a family of important facilities is the design intent in most large medical-educational complexes. Several levels of identity are sought:

- An umbrella identity for the HSC at large, in the context of the UNM campus in general, and specifically within the North Campus
- Neighborhood identities and sense of arrival for each major address in that neighborhood
- Natural and built environments that communicate institutional values and embrace staff, faculty, students, and visitors

Used in this planning effort was work already completed in the *Barton Myers Plan*, including:

- Geographic area of influence for “sub-neighborhoods” in the HSC and its precinct
- Character of the area surrounding the neighborhood and the nature of the land uses within that larger precinct and beyond
- The amount of vacant and under-utilized properties in each portion of the precinct
- Current traffic capacities, current and forecast volumes, and resultant conditions on the streets leading into and within the precinct and surrounding neighborhood
- Design vocabulary for each group of facilities with their variety of perspectives, scales, massing and materials
- Existing impacts on surrounding neighborhoods and developments

The resultant assessment identified potentials and constraints for the HSC and was vital input to the identification and consideration of alternative land use and transportation concepts.

**TASK SIX: HSC “TEST-OF-FIT”**

Using the information compiled in the earlier tasks, this task involved conducting a practical test of development demand versus development capacity.

Development capacity was identified in a mapping of the HSC that subtracted-out critical/sensitive areas, major public areas and land dedicated to public right-of-ways. The resultant developable areas and acreage were used to diagrammatically consider incremental demand.

Development demand is the incremental square feet of new space (including parking) needed by each major user together with the supportable square feet of academic, research, office and other uses derived from the demand forecast. For each land use, existing expansion plans and planned development was mapped and diagrammed. The information required for this task came largely from the *Barton Myers Plan*.

This conceptual test of fit identified:

- Areas where development pressure is greatest
- Areas that fail to meet those pressures and the amounts of any deficits
- Areas where new development strategies are clearly needed, such as joint-development/joint operations
- Design options and strategies for the HSC that accommodate the development needs
The results of the test-of-fit analysis and development strategies were the focus of the Data Base Charrette conducted in December, 1999. The consultant team presented their findings to the representatives of the HSC Leadership Council to demonstrate development capacity shortfalls and provide a basis for the group to craft important development strategies for both the built environment and requisite infrastructure improvements. This session shaped the specific land use and transportation concepts defined, described, and comparatively evaluated over the remainder of the study.

**TASK SEVEN: ALTERNATIVE CENTER DEVELOPMENT & TRANSPORTATION CONCEPTS**

**and**

**TASK EIGHT: COMPARATIVE EVALUATION OF HSC CONCEPTS**

The results of the test-of-fit analyses focused the development strategies defined and comparatively evaluated in these two tasks. Logically, the concepts mapped land use organization, the built environment, and the open space areas for each strategy. Much of the information required came from the *Barton Myers Plan*. The descriptions identified:

- Access/circulation improvements including new roadways
- Conceptual descriptions of building renovations/additions, new building and parking footprints, massing, and scale and order of magnitude cost estimates
- Achievable parking quantities on and off-street, surface and structured
- Impact mitigation strategies
- Representative urban design attributes
- Order-of-magnitude costs

The development concepts were compiled at a level of detail and with supporting descriptions to enable a clear understanding of the changes from the current conditions, together with cost estimates for each improvement. As part of the discussion of the alternatives, we recommended a set of evaluative criteria that was based on the sum total of our work over the course of the project along with our experience in similar master planning efforts.

The descriptive and evaluative process identified the trade-offs among the alternatives and led to a composite alternative embodying the best attributes of the different concepts at an affordable cost. The priorities for development and the estimated capital costs of each one were identified in the documentation to allow additional discussion and refinement.

**TASK NINE: DRAFT HEALTH SCIENCE CENTER MASTER PLAN**

**and**

**TASK TEN: FINAL HEALTH SCIENCES CENTER MASTER PLAN & CAPITAL BUDGET**

The results of the comparative evaluation is the Master Plan for the Health Sciences Center. The plan was compiled in draft form for the Leadership Council’s review and comment. In similar projects, moving from draft to final documents has involved:

- Presentations of the Plan to other involved or interested parties
- Refining development mappings and narrative sections of the draft

This report is, in fact, Tasks Nine and Ten. The above-mentioned Tasks One through Eight have been completed prior to the publication of this report. It is important to understand that these tasks have acted as a guideline for acquiring and distilling the information necessary to define and recommend the most appropriate long-range development plan for the Health Sciences Center.
2.4 STAKEHOLDER DESCRIPTIONS

An integral part of the work process was developing an understanding of the user groups of the Health Sciences Center and how they relate to each other. The HSC serves as the only comprehensive healthcare training center in the state and provides a full range of patient care services, in addition to educating health professionals and conducting research. These roles, along with general HSC support facilities and auxiliary functions can all be found within the North Campus. Among the many users, some major groups surface as primary “stakeholders” in the future development of the Health Sciences Center. These stakeholders are:

Clinical
- University Hospital
- Children’s Hospital
- Carrie Tingley Hospital
- Mental Health Center
- Children’s Psychiatric Hospital
- Cancer Research and Treatment Center

Education / Research
- College of Nursing
- College of Pharmacy
- School of Medicine
- HSC Library

These stakeholders operate interdependently to provide healthcare services at the only teaching hospital system in New Mexico. Each stakeholder will play a significant role in the future of the HSC and must be evaluated for their current and future needs. Consideration of individual stakeholder missions must be reviewed in conjunction with the missions of other entities to assure a harmonious plan for future growth. The following descriptions were extracted during Task One and have been developed from personal observation, previous University master plan publications and the HSC Strategic Plan.

CLINICAL

UNIVERSITY HOSPITAL

University Hospital is a 384-bed acute, quaternary care facility and contains the only Level 1 trauma center in the state of New Mexico. UH’s services are available to all New Mexicans, regardless of their location or their ability to pay. University Hospital includes Children’s Hospital of New Mexico, the Family Practice Center and Senior Health Center. UH is a part of the University of New Mexico Health Sciences Center and serves as its teaching hospital. As a result, the Hospital’s patients benefit from the latest in medical technology, up-to-date knowledge and experienced practicing physicians who also teach and conduct research.

In recent years, University Hospital was selected as one of the 100 top-performing hospitals in the United States and is also considered one of the top primary care training centers in the country.
CHILDREN’S HOSPITAL
Children’s Hospital of New Mexico, located within University Hospital, is the largest pediatric facility in the state. It provides the most advanced and comprehensive neonatal and pediatric care ranging from outpatient clinics to intensive care inpatient units.

Children’s Hospital practices family-centered care that involves family members in the care of their child. The hospital offers a Child Life Program that includes a resource library, a Safe Kids program and Pete’s Playground, the only outdoor playground for hospitalized pediatric patients in New Mexico.

CARRIE TINGLEY HOSPITAL

Carrie Tingley Hospital has provided care to children with chronic neuromuscular conditions, physical impairments and developmental disabilities for over 60 years. The hospital has 24 inpatient beds and conducts 21 specialized clinics. Surgery and rehabilitation is performed in-house with a full orthotics and prosthetics lab within the hospital. Faculty and staff hold multi-disciplinary clinics around New Mexico to provide special pediatric services. Carrie Tingley Hospital is located on University Boulevard as a self-sufficient facility.

MENTAL HEALTH CENTER

The Mental Health Center provides “day hospital”, outpatient clinic and inpatient treatment for adults and geriatric patients. Its 74-bed unit provides intensive short-term inpatient care for patients in psychiatric distress.

MHC offers substance abuse treatment through the Center on Alcohol, Substance Abuse and Addictions (CASAA). Services include outpatient rehabilitation and counseling, medication management and a walk-in clinic. The Mental Health Center also provides emergency psychiatric care and a Rape Crisis Clinic.
CHILDREN’S PSYCHIATRIC HOSPITAL
The Children’s Psychiatric Hospital provides intensive treatment of seriously emotionally disturbed children and adolescents. This treatment is accomplished in residential inpatient settings or day-hospital programs.

The hospital provides an on-site school staffed by Albuquerque Public Schools and staff pediatricians for medical care.

CPH serves as a training center for child mental health professionals and is the only such facility in New Mexico.

CANCER RESEARCH & TREATMENT CENTER
The only facility in New Mexico recognized by the National Cancer Institute, the Cancer Research and Treatment Center is devoted to cancer research, diagnosis, and care. It was established in 1972 under the School of Medicine. A 16-bed oncology unit in University Hospital is dedicated to the CRTC’s inpatient and clinical research focus. Outpatient services include a variety of specialized and multidisciplinary clinics in a facility adjacent to University Hospital. Completed in 1998, the newest building on the HSC campus is the Cancer Research Facility which houses a variety of programs dedicated to cancer research.

For the last 20 years, the CRTC has been designated to compile and track data on all cancer cases in the state, an important aspect of the epidemiological study of cancer in New Mexico’s diverse population.

EDUCATION / RESEARCH
COLLEGE OF NURSING
Established in 1955, the University of New Mexico College of Nursing is fully accredited for undergraduate and graduate nursing degrees and has been recognized for the excellence of its family nurse practitioner and midwifery graduate programs. Other concentrations include nursing administration, mental health, child health, gerontology, and community health.

The College’s Educational Outreach Program offers degrees at 20 sites throughout New Mexico and the west through interactive television courses. The programs are designed to address the needs of the population and make training available to virtually anyone in the state.

The College’s research focus ranges from disease prevention and health promotion to outcomes of nursing innovations. A Center for Research on Nursing Outcomes was recently started to further facilitate the College of Nursing’s research efforts.
COLLEGE OF PHARMACY
The University of New Mexico College of Pharmacy was founded in 1945 and has been offering graduate studies since 1984, including Doctor of Pharmacy, pharmacy administration, radiopharmacy and toxicology degrees. The College works in conjunction with New Mexico’s pharmacists on health policy and education issues. The College of Pharmacy operates the New Mexico Poison and Drug Information Center, a statewide resource for treatment and evaluation of poisons and toxicity.

The College has shifted its educational focus to meet the need for pharmacists’ increased clinical role as part of a healthcare team. The College supports both research and education as primary goals for success to serve the health needs of New Mexico.

SCHOOL OF MEDICINE
The University of New Mexico School of Medicine was established 1964 and is considered one of the top medical schools for primary care education. The School is innovative in its problem-based curriculum teaching methodology and is used as a model for other medical schools. The School operates numerous research programs targeted towards the state’s multi-ethnic population.

The School of Medicine provides both undergraduate and graduate programs focusing on a strong commitment to serve New Mexico with a medical education resource, with over 30% of physicians practicing in the state graduating either from the School of Medicine or its residency program. The School works with University Hospital’s clinical programs to aggressively pursue the unique health needs of the state’s culturally and ethnically diverse population.

HSC LIBRARY
The Health Sciences Center Library is the only comprehensive health sciences library in the state. The Library is used by health care providers throughout New Mexico and, through a developing consumer health collection, provides important information resources. The Library serves the needs of the HSC’s academic and clinical programs by using sophisticated information systems and its collection of text and audio-visual materials.

The Library collection includes archives of the history of health care in New Mexico and the cultural health practices and beliefs of Native Americans and Hispanics. The National Library of Medicine designated the HSC Library as the official resource library for New Mexico.
III
EXISTING CONDITIONS & PLANNED IMPROVEMENTS
III EXISTING CONDITIONS & PLANNED IMPROVEMENTS

3.1 PURPOSE

In order to proceed with master planning for the Health Sciences Center, the planning team required a thorough understanding of existing conditions on the campus and clear knowledge of applicable precepts from the Barton Myers Plan. The intent of this plan was to build on the Barton Myers Plan and focus in greater detail on the HSC campus. To this end, gathering information on existing conditions and improvements already planned in the areas of utilities, circulation and land use was critical prior to drafting new development plan concepts.

3.2 SITE

The North Campus occupies the 185 acres between Lomas Boulevard, University Boulevard and Indian School Road, with an irregular eastern boundary defined by Stanford and Vassar Drives. In addition to the Health Sciences Center, within this area is also found the Children’s Psychiatric Hospital campus, the Law Center and the 9-hole UNM North Campus Golf Course. Other HSC functions are located along University Boulevard, notably Carrie Tingley Hospital and the 1209 Clinic.

University Hospital’s main entrance for emergency, non-emergency and pedestrian traffic is from Lomas. The entrance to the Health Sciences Center is at the intersection of Marble and Stanford and is designated by a monument sign on the lawn. Secondary entrances into the campus include Yale at Lomas and Tucker at University. Circulation around the perimeter of campus is possible, but access for emergency and service vehicles is discontinuous.

In general, the North Campus grade falls considerably to the south and west. A concrete-lined drainage channel, which originates below ground south of Lomas, runs through the site. It crosses beneath a Hospital parking area and emerges just west of the parking garage before turning north.

3.3 LAND USE & DEVELOPMENT

Although most of the area considered in this plan is owned by the University, there are some parcels that are owned by other entities, primarily along University Boulevard. A few lots are privately owned, but the majority not held by UNM are owned by the Sandia Foundation, a non-profit development corporation whose profits are directed towards Dickinson College in Carlisle, Pennsylvania and the University of New Mexico. At the time of this plan, no formal development agreements have been established between the Sandia Foundation and UNM as to future uses of these properties.

Another significant property is occupied by the Public Health Service Indian Hospital adjacent to University Hospital to the east. The location would be ideal for future Hospital expansion, but based on earlier discussions, its acquisition seems improbable. Other properties include the Department of Health Clinic and the Office of the Medical Examiner. Both entities are engaged in discussions with the Health Sciences Center to trade their properties, located in the heart of the North Campus, for HSC-provided buildings elsewhere in the vicinity.

Both the Hospital Master Plan and the Barton Myers Plan recognize the need to relocate the Physics and Astronomy departments and chiller plant functions to other sites. These buildings’ current placement along Lomas is in direct conflict with Hospital growth at this high visibility/traffic location. The School of Law and its current expansion will not have an impact on the area under consideration in this plan.
### 3.4 PLANNED LAND USES & DEVELOPMENT DENSITIES

The *Barton Myers Plan* discussed numerous issues regarding the overall campus plan. Issues specific to North Campus are density, access, parking and utilities. Open space and linkages back to Main Campus are also important. These items were addressed in a broad brush fashion as part of the *Barton Myers Plan* and their intent is explored in greater detail in this plan.

It has been recognized in earlier planning work that the density of the North Campus should be greater than that of Main Campus due to the more intensive and cost-effective use of land and infrastructure in this area. Optimum ground coverage was determined to be around 30% and buildings of 6-7 stories in the vicinity of the Hospital would be allowed as long as they stepped downward to a maximum height of 2.5 stories when in close proximity to the surrounding neighborhoods. The *Barton Myers Plan* originally projected an increase of 953,000 square feet for the HSC based on a general assumption of space estimates and enrollment for the whole University.

The establishment of development density relies on a number of independent variables. Developable acreage, developed acreage and under-utilized properties all help to define land use density. In general, the HSC is concentrated in low to mid-rise buildings extending from University Hospital to the HSC Library at the intersection of Stanford and Marble Streets. With the exception of the open space, land to the north and west of this area leaves substantial room for new development. Within the concentrated portion of the HSC, existing surface parking areas west of the Hospital and east of the Mental Health Center supply the only readily available residual developable area. Additional significant available land occurs immediately east of Yale Boulevard and within the area between the arroyo channel and University Boulevard. Other important acreage will be liberated with the demolition of the Physics and Astronomy Building and the chiller plant on the north side of Lomas.

### 3.5 OPEN SPACE & LINKAGES

A unifying open space connecting the North and Main Campuses is one of the primary axioms of the *Barton Myers Plan*. This North-South open space starts on Main Campus at the Duck Pond, crosses Lomas and continues to the arroyo channel, finally connecting to the golf course. The open space on North Campus is intended to have a variety of landscape treatments – from low-water xeriscape to grass playing fields to a “bosque” along the reconstructed arroyo. Pedestrian walkways and bicycle paths would serve as the primary circulation system. There are currently a few structures within this designated open space; any proposed new construction would be discouraged in this zone.

The *Barton Myers Plan* expressed the need to establish clear linkages between the Main and North Campuses. The plan predicted a “center of gravity” shift from the south end of Main Campus to the north, in and around Lomas Boulevard. Several elements were proposed to accomplish the shift, including:

- The open space as a connection across Lomas
- A “bridge” building that crosses over Lomas
- Strong North/South pedestrian paths at the bridge building and across Lomas just east of University Boulevard

The bridge building and a mixed-use development at the intersection of University and Lomas are intended to serve as gateways to the campuses. These connections would be reinforced through signage and landscape materials to create a University “zone” and further emphasize the relationship between Main and North Campuses.
3.6 ACCESS, CIRCULATION & PARKING

In 1991, the Parking / Traffic Master Plan was developed to include a comprehensive study on vehicular and pedestrian access and circulation patterns on Main Campus, North Campus and University Hospital. Specific issues focused on:

- supply, demand, and adequacy of existing and future parking,
- alternatives for adding more parking spaces,
- traffic and pedestrian circulation,
- and parking management strategies to capitalize on parking resources.

North Campus is bounded by a series of arterial roadways with Lomas Boulevard as the primary east/west street to the south. University Boulevard runs north/south at the western edge of the campus and Indian School Road is to the north. All of these streets are busy, four lane thoroughfares. Girard Boulevard is a striped, two lane collector to the east of campus.

A “ring” or perimeter access road concept is achieved through secondary roads that lead off the main arteries: Yale Boulevard, Marble Avenue, Stanford Drive and Tucker Road. All of these access roads are two lane; Marble and Stanford are residential streets.

University Hospital currently has its main entrance for both emergency and non-emergency vehicles directly off Lomas immediately west of the main Hospital building. The throat of the entry drive is very tight and has a short stacking distance. There is considerable conflict between ambulances, pedestrians, drop-off, and visitor and staff traffic. This intersection has a traffic light and is the primary street level pedestrian access to the Hospital. There is an above-street pedestrian bridge that connects the Hospital to a parking garage on the south side of Lomas.

Frontier Avenue serves as a secondary access point and service entrance to University Hospital. Frontier is an unstriped, two lane road with on-street parking that turns sharply and dead-ends into the loading dock of the Hospital. Large delivery and semi trucks have difficulty negotiating this road and often have to back out of the loading area and down Frontier until they have enough clearance to turn around.
The Health Sciences Center lacks a sense of place; its identity is all but unknown to most area residents. As well, the HSC suffers from a lack of a clearly defined entry. Its “front door” is nominally designated by a sign at the intersection of Marble and Stanford, but there is no place at this location to park, drop-off or get directions. Residential neighbors nearby would like to discourage heavy traffic on Marble and Stanford and other surrounding streets, so this location is clearly inappropriate for an entrance, much less the main entrance.

There is some road penetration near the center of the HSC for loading and emergency vehicles, but the central plaza is built over underground buildings and is not designed to hold the weight of fire trucks. This restriction causes some concern regarding buildings that may not have adequate fire protection.

Protected pedestrian access from the Main Campus is limited to crossings at Yale, University and the Hospital, as well as the above-noted pedestrian bridge across Lomas to the Hospital. Primary pedestrian links running east/west are not well defined. Pedestrians must use Tucker and the Tucker bridge across the arroyo to get to University. While there is a sidewalk, Tucker primarily facilitates vehicular traffic. Conversations with HSC users indicate that although pedestrians can make their way through the campus, many of the indicated sidewalks and paths seem to dead-end and people find themselves going through or around buildings and across parking lots to get to their destination.

Much of the parking on North Campus is provided in surface parking lots, some of which are considered “remote” and serviced by a UNM shuttle bus system. The majority of the lots are designated for permit parking and meters are dispersed throughout the campus. There is a parking garage west of the Hospital for visitor and patient use only.

The Parking / Traffic Master Plan predicted that by the year 2000, the surplus parking for North Campus and the Hospital that existed at the time of the study would be reduced, but still in excess of the demand. However, much of the perceived surplus was considered "taken" to help offset Main Campus’s large deficit of parking spaces. In 1994, some of North Campus’s remote parking lots were expanded to further reduce the parking need. At that point, the Barton Myers Plan considered the parking needs of both Main and North Campus to be satisfied. Parking standards suggest a maximum walking distance of 1,200 feet, or five minutes, with the most desirable distance being 600 feet. Current walking distances for the HSC, on average, fall between 600 and 1,200 feet. An obvious exception might be the remote lots that utilize the shuttle bus system. The Barton Myers Plan suggests that there be a general shift away from surface parking lots at the center of the HSC in order to meet building density and coverage objectives.
3.7 UTILITIES

A Master Utility Plan was developed in 1994 to address increasingly critical utility degradation at the University of New Mexico. The report concluded:

- Existing utilities (boilers, chillers, electrical distribution) are unable to serve current loads safely, reliably, and economically.
- Existing utility facilities are at or above maximum capacity and cannot serve additional new buildings.
- Utility production should be established at two locations. The first is the existing Ford Utilities Center on Main Campus, which will contain steam and chilled water generating equipment, and the second would be a new North Campus Utility Plant to replace the chiller plant on Lomas. This facility would contain only chilled water generating equipment.
- New steam and chilled water lines are necessary between Main and North Campus to create duplication of services for reserve sharing.

In 1999, GLHN, a Tucson-based engineering consultant, was retained to prepare a utilities analysis of the entire campus. Their conclusions were similar to the 1994 report: the University of New Mexico has an aging and inadequate utilities infrastructure.

At present, electric and gas service is provided by Public Service Company of New Mexico (PNM). In order to pursue more competitive rates, Lobo Energy Incorporated was formed by the Regents of the University with the goal of developing a business plan focused on reconstruction of its utility systems. This plan could also include recommendations for energy conservation and co-generation. Lobo Energy is expected to act as a project manager and consultant to the University’s utilities division.

The North Campus is partially connected to Main Campus utility systems. Even though University Hospital is part of the Health Sciences Center complex, it operates independently from both the North and Main Campus utility systems with the exception of electrical service that is provided by a connection to the North Campus system.

University Hospital, originally the Bernalillo County Medical Center (BCMC), was founded as the County public health care provider and as such had no connection to the University of New Mexico located across Lomas to the south. With the opening of the School of Medicine next door, the Hospital evolved into its primary teaching facility. Eventually its governance passed to the University, although University Hospital continues to have its own Board of Trustees. As the Hospital has expanded, it has remained independent of campus utilities primarily to maintain the higher level of reliability a hospital requires.

3.6.1 CHILLED WATER

The University has begun planning for a substantial expansion of its main campus chilled water production capacity. As well, current plans call for refurbishment of the existing North Campus chiller plant, located at the southwest corner of the University Hospital on the north side of Lomas Boulevard, to increase capacity in response to North Campus growth. However, the Hospital Master Plan envisioned demolition of this plant since it is in conflict with the proposed west expansion of the Hospital. This plant serves the Health Sciences Center; it also serves the Main Campus via a ten-inch line beneath Lomas Blvd. where it ties into the Main Campus chiller system. It is thirty years old and therefore has a limited life span.
As envisioned in the Hospital Master Plan, the chiller plant’s removal is a prerequisite to the Hospital’s west expansion that could begin as soon as two years from now. If demolished, the capacity of this chiller plant would need to be replaced with a new plant before beginning construction. In a similar vein, chilled and steam condensate lines also terminate at this plant. If the demolition scenario is followed, these lines will need to be rerouted.

University Hospital has its own chiller plant with two electric chillers and an underground thermal storage tank. The plant is located northeast of the Hospital adjacent to Frontier Avenue. These chillers are about ten years old and have an expected life of twenty years. During the warm months, the thermal storage tank lacks sufficient capacity to be fully charged except over weekends. As a result, it cannot meet the objective of using only off-peak PNM electric rates for generation of cooling. In any case, it should be possible in the future for UNM to provide chilled water to the Hospital at a competitive cost.

### 3.6.2 HOT WATER & STEAM
During the winter, Main Campus suffers from low steam pressure. As a result, the Ford Utilities Center on the main campus will be expanded to add steam generation capacity. It is assumed that planned expansion of the HSC will be served by the enlarged Ford plant.

University Hospital has its own high pressure steam system originating from its boiler plant northeast of the Hospital. The Health Sciences Center takes its primary steam from the Main Campus system but also buys high pressure steam, used primarily in laboratory applications, from the Hospital.

### 3.6.3 ELECTRICITY
The North Campus is served by its own dedicated power substation located north of Tucker Drive near the Children’s Psychiatric Hospital. Electrical feeders from this facility are currently operating close to full capacity although they were projected to provide sufficient power for several more years. As a result, construction of any new electric-driven chiller plant or significant building project may trigger the need to increase the capacity of the substation by adding a second transformer and switch as well as require increased feeder capacity.

There is no connection between the two campus’ electrical systems, but an inter-tie is planned to add redundancy. Expansion of the main campus power substation is currently in design. As part of these improvements, two 6” conduits will be extended north across Lomas to provide for this interconnection.
3.6.4 **TRASH & DELIVERIES**

All trash for the Health Sciences Center is transported by hand cart daily to a central collection point located at the southwest corner of the Biomedical Research Building. This area is at the intersection of several major points of interest for the HSC:

- public parking for University Hospital,
- pedestrian and drop-off access to the Cancer Research building,
- pedestrian access to the Cancer Research and Treatment Center,
- and secured access to the Animal Research Department.

All deliveries for the Health Sciences Center are also received and processed at this point. As a result, truck access and distribution are a concern at this current location.
IV
GOALS &
OBJECTIVES
4.1 PROCESS
It is important to state goals and objectives as part of the planning process to provide both direction and as a tool for evaluation. The starting point for defining the Health Sciences Center goals and objectives was taken from those already established in the Long Range Master Plan and the Barton Myers Plan. Meetings with representatives from each stakeholder group helped clarify goals and objectives related to North Campus and the HSC. Finally, the goals and objectives were further clarified by current missions and future directions noted in the HSC Strategic Plan.

4.2 FUTURE GROWTH & DEVELOPMENT OF ALBUQUERQUE & NEW MEXICO

4.2.1 GOAL:
The Health Sciences Center will continue to reflect the needs of Albuquerque and New Mexico as it plans for future growth and development.

OBJECTIVES:
- Plan for the anticipated growth in technology-based industry in Albuquerque. Facilitate partnerships with public and private biomedical and health ventures.
- Play a major role in regional health care and keep the HSC accessible to the public.
- Continue the HSC’s role as the only teaching hospital system in the state and provide access to “public services” that improve the quality of life in the community.

4.3 FUNCTIONAL ORGANIZATION OF THE NORTH CAMPUS

4.3.1 GOAL:
The North Campus will be developed to accommodate expanding institutional functions.

OBJECTIVES:
- Create a “front door” and a clear identity for the HSC campus.
- Facilitate ease of access for patient care services in planning for HSC expansion.
- Further develop the Hospital Master Plan to clearly define the Hospital’s entries and provide a sense of orientation.
- Create transitional zones between active campus uses and adjacent residential neighborhoods.
- Use parking structures to minimize the land area dedicated to parking. Locate parking in close proximity to clinics and hospitals to serve patient care operations.
- Maintain the Golf Course as an open recreational area and not use for future building development.
- Invest in a major second utility system for the North Campus as necessary to accommodate growth of the HSC.
- Establish a land use pattern that recognizes program/building adjacency requirements. Maximize the development capacity of each development zone and minimize travel times and distances between buildings.
- Relocate Physics and Astronomy programs to Main Campus.
4.3.2 GOAL:
Circulation will be improved throughout the HSC campus. Hierarchy of transportation modes will be clearly defined.

OBJECTIVES:
- Develop a primary and secondary vehicular circulation system reducing pedestrian/vehicular conflicts and defining clear orientation to parking facilities.
- Encourage inter-modal and multi-modal forms of transportation to campus: pedestrian, bicycle, transit, rideshare, shuttle.
- Encourage use of remote surface lots for long-term staff and student parking. Regular shuttle buses will provide access between remote parking and campus.
- Provide multiple entrances from surrounding major arteries to make it easy to enter and leave the campus.
- Clearly define access and parking for short-term visitors.

4.4 PHYSICAL DEVELOPMENT DIRECTIONS

4.4.1 GOAL:
Physically and perceptually link the North and Main Campuses to create a single academic core.

OBJECTIVES:
- Create a consolidated central open space linking both campuses.
- Express the concept of “bridging” across Lomas through buildings, surface and landscape treatments and related uses on both sides of the street.
- Maintain and strengthen the pedestrian circulation system. Establish a hierarchy of outdoor rooms and activity areas.
- Formalize and phase land acquisition strategies to consolidate UNM ownership of properties generally located east of University Boulevard, south of Indian School Road, and west of Girard Boulevard.
- Maintain basic character of Main Campus on the North Campus with a higher ground coverage of 30% allowed. Height of buildings should be a maximum of 7 stories for University Hospital, 6.5 stories for buildings in the immediate medical center area, and phased down to 2.5 stories average height as development moves to the campus perimeter.
- Coordinate University of New Mexico “gateways” with pedestrian and vehicular connections between North and Main Campus. The transition between the two campuses should be as “transparent” as possible.

4.4.2 GOAL:
Improve the quality of student life and the student experience at the HSC.

OBJECTIVES:
- Expand and distribute student services, study locations and food service facilities to create campus activity centers.
- Provide for shuttle system drop-off areas and convenient access routes to encourage use by students, faculty and staff.
- Develop strategies to encourage students to stay on campus during the academic day.
- Encourage part-time jobs on campus to reduce trips off campus.
4.4.3 GOAL:
Enable the HSC to compete effectively with other organizations for available state, public and private funding resources.

OBJECTIVES:
- Encourage development of the HSC as a recognized center of research excellence.
- Focus the HSC’s marketing efforts to foster public awareness.
- Increase the “collegial” sense and the commitment of alumni to the institution.
- Create an easily understood planning document to define and justify long-term development of the campus.

4.4.4 GOAL:
Develop an environmentally sustainable campus that takes advantage of geographical strengths.

OBJECTIVES:
- Landscape with drought tolerant, native southwestern plants.
- Use gray water for landscaping where available.
- Establish view corridors for internal wayfinding and orientation.
- Maximize the existing site topography. Consider building connections at multiple levels.
- Permanently establish a large central open space connecting the North and Main Campus.
- Develop a systems approach for utility plant improvements and expand or replace the current utility plants to correspond to future demands.
- Use energy efficient building technology wherever possible.
V
FACILITIES INVENTORY & ANALYSIS
5.1 WORK PROCESS

The facilities inventory and analysis provided essential background information for the Health Sciences Center Master Plan. It established the capacity and condition of existing facilities, a key element in determining the types and amounts of space required to meet the HSC’s future needs. The process required an inventory and assessment of existing facilities; they were categorized as architectural, structural, mechanical, electrical, and life safety-related. These evaluations identified conditions ranging from those requiring total replacement to major curative actions to relatively minor improvements. The analysis included review of existing drawings; walk-through and visual inspection of facilities by respective disciplines; and written summaries of facility condition, space utilization, and building systems along with remedial recommendations.

A team of architects and engineers evaluated more than 1 million square feet in 28 HSC facilities over a two month period. They met with maintenance personnel and building users to determine what they regarded as the strengths and weaknesses of each building. Data on the age of buildings was also assembled:

- Construction of buildings on the HSC campus has ranged over a 47 year period
- The average building is 23 years old
- 37% of total area is in buildings built before 1970, with an average age of 36
- 38% of total area is in buildings built between 1972 and 1978, averaging 24 years old
- Only 15% of HSC buildings have been built in the last 15 years.

![Figure 1: Percentage of Building Area Based on Age](image_url)
Evaluations can be summarized as follows:

5.1.1 ARCHITECTURAL
The exteriors of most of the buildings are in good to fair condition. Many of the roofs are original and have had numerous repairs. Windows installed before 1980 are non-insulated, single glazed in aluminum frames and are energy-inefficient as a result. Interior finishes vary greatly, being generally good in the newer buildings to old and dated in many of the older ones.

Usable space is often at a premium, a condition which is exacerbated by storing old equipment, furniture and supplies in the buildings rather than utilizing the warehousing system in place.
The majority of buildings no longer conform to current building codes. Buildings constructed at different times, under different versions of codes, have resulted in inconsistent fire and life safety solutions. Some of the more serious fire and life safety code discrepancies have been corrected to attempt to meet the intent of recent codes, however, significant renovation in some buildings could be prohibitive if the HSC were forced to bring a building entirely up-to-code. Most buildings have been retrofitted to provide a reasonable level of handicapped accessibility but many restrooms do not meet current accessibility requirements.

5.1.2 STRUCTURAL

None of the buildings showed signs of structural failure or distress for their current uses. The evaluations note instances where if uses and loads were to change significantly, the structure would require upgrading. Buildings not originally designed to be laboratories that currently house lab functions report problems with vibration. As an indication of the age of most buildings on the HSC campus, flat roofs were constructed with little to no slope to facilitate drainage. As a consequence, there have been numerous accounts of roof leaks and repairs, but only a few buildings have been completely re-roofed. There are also some issues involving exterior finish failures due to moisture penetration beneath the surface.

5.1.3 MECHANICAL AND PLUMBING

A common theme throughout the HSC campus are mechanical systems that by degree have outlived their useful lives. Hot and cold spots, poor air quality and system failure are reported in buildings with mechanical systems 20-30 years old. Some upgrades have been performed, but the number of buildings that fall into this age bracket suggests a comprehensive, prioritized, financial plan for overhaul or replacement. Older lab buildings require new acid glass plumbing and vent hoods that meet current OSHA standards. Some buildings experience sewer odors after periods of non-use.
5.1.4 ELECTRICAL
Parallel to their mechanical systems, many buildings over 20 years old have original electrical distribution equipment that is outdated and should be replaced. There are numerous deficiencies that include clearance violations, no expansion capacity and inadequate numbers of receptacles. Lighting is a mix of fluorescent, HID and incandescent sources, some with antiquated ballasts that may contain PCB’s. Some upgrading has been done on a piecemeal basis, but energy efficient lighting, modern voice/data systems and adequate emergency power should be threshold requirements for future improvements.

Emergency lighting and exit sign coverage varies from building to building, but fire alarm systems are generally inadequate in all but the newest buildings and should be upgraded, especially in buildings containing hazardous materials.

5.2 CONCLUSIONS
The evaluation team concluded that, with the exception of the newer buildings on campus, many of the buildings require at least a minimum of renovation to be brought up to current standards. It was determined that SOM #2 and SOM #4, 5, and 6 were obsolete and too cost-prohibitive to remodel and should be demolished. SOM #2 is in a prime location on the HSC plaza for a building of higher density, central to most HSC functions. In addition to having a portion of the building condemned, SOM #4, 5 and 6 is located at what serves as the current HSC entrance. This location will continue to be significant on the campus and should have a building that responds appropriately to its surroundings.

The Surge Building currently holds laboratories that it was not designed to accommodate, so the recommendation was made to relocate those functions. The Health Sciences and Services Building, one of the more recent buildings on campus, was designed primarily as a laboratory building, but its third floor was converted from labs to administrative offices. Because a lab building is designed to meet more stringent technical requirements than an office building, its cost per square foot is much greater. If additional office space were to become available, it would be a more cost effective use of that floor to revert to its original function, especially due to the lack of available laboratory space on campus. A number of significant buildings constructed in the 1970’s were designed to have additional floors added but to date, no such additions have been completed.

In researching past master plans, it is interesting to note that the 1977 UNM – North Campus Guidelines for Use and Development of Lands and Buildings (1977 North Campus Master Plan) identified the same buildings noted above as needing to be demolished. The UNM Medical Center Preliminary Five Year Plan 1981-1986 called again for the buildings to be removed. The 1977 North Campus Master Plan also stated that the Surge Building should be used only for office uses as conversion to laboratory functions would be uneconomical.

The complete evaluations of the buildings inventoried are in the Facilities Inventory and Analysis document.
### Table 1  Buildings Evaluated

<table>
<thead>
<tr>
<th>Bldg. #</th>
<th>Building Name</th>
<th>Year Built</th>
<th>GSF</th>
<th>Remarks</th>
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<tbody>
<tr>
<td></td>
<td>Mental Health Center (MHC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mental Health Building</td>
<td>1967</td>
<td>75,248</td>
<td>2 floors + basement</td>
</tr>
<tr>
<td></td>
<td>Programs for Children</td>
<td>1967</td>
<td>11,303</td>
<td>2 buildings</td>
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<tr>
<td>201</td>
<td>School of Medicine #2</td>
<td>1950</td>
<td>18,240</td>
<td>2 floors</td>
</tr>
<tr>
<td>209</td>
<td>School of Medicine #4, 5, &amp; 6</td>
<td>1965</td>
<td>18,387</td>
<td>1 floor</td>
</tr>
<tr>
<td>210</td>
<td>Senior Health &amp; Milagro</td>
<td>1966</td>
<td>8,730</td>
<td>1 floor</td>
</tr>
<tr>
<td>211</td>
<td>Basic Medical Sciences Building</td>
<td>1967</td>
<td>174,941</td>
<td>4 floors + basement + penthouse</td>
</tr>
<tr>
<td>226</td>
<td>Surge Building</td>
<td>1973</td>
<td>20,420</td>
<td>2 floors</td>
</tr>
<tr>
<td>227</td>
<td>Cancer Research &amp; Treatment Center</td>
<td>1972</td>
<td>109,724</td>
<td>3 floors + basement + penthouse</td>
</tr>
<tr>
<td>228</td>
<td>College of Nursing &amp; Pharmacy</td>
<td>1975</td>
<td>96,080</td>
<td>3 floors + sub-basement + basement + penthouse</td>
</tr>
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<td>229</td>
<td>Cancer Research Facility</td>
<td>1997</td>
<td>82,867</td>
<td>3 floors + basement</td>
</tr>
<tr>
<td>234</td>
<td>HSC Library</td>
<td>1976</td>
<td>65,799</td>
<td>4 floors + basement</td>
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<td>248</td>
<td>Family Practice Center</td>
<td>1977</td>
<td>57,925</td>
<td>4 floors + basement</td>
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<td>249</td>
<td>Novitski Hall</td>
<td>1978</td>
<td>28,139</td>
<td>2 floors</td>
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<tr>
<td>253</td>
<td>Biomedical Research Facility</td>
<td>1982</td>
<td>106,637</td>
<td>4 floors + basement + penthouse</td>
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<td>260</td>
<td>CMRRC</td>
<td>1986</td>
<td>9,959</td>
<td>1 floor</td>
</tr>
<tr>
<td>264</td>
<td>Diabetes Control</td>
<td>1986</td>
<td>929</td>
<td>1 floor</td>
</tr>
<tr>
<td>266</td>
<td>Health Sciences &amp; Services Building</td>
<td>1988</td>
<td>58,212</td>
<td>3 floors + basement</td>
</tr>
<tr>
<td>270</td>
<td>Carrie Tingley Hospital</td>
<td>1959</td>
<td>89,207</td>
<td>3 floors + basement</td>
</tr>
<tr>
<td>271</td>
<td>1209 Clinic</td>
<td>1968</td>
<td>20,000</td>
<td>1 floor</td>
</tr>
<tr>
<td></td>
<td>Children's Psychiatric Hospital (CPH)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>222</td>
<td>Bandelier Office Storage</td>
<td>1975</td>
<td>800</td>
<td>1 floor</td>
</tr>
<tr>
<td>236A</td>
<td>Administration Building</td>
<td>1975</td>
<td>10,213</td>
<td>2 floors</td>
</tr>
<tr>
<td>236B</td>
<td>Education Building</td>
<td>1975</td>
<td>7,577</td>
<td>1 floor</td>
</tr>
<tr>
<td>237</td>
<td>Chama Cottage</td>
<td>1975</td>
<td>2,745</td>
<td>1 floor</td>
</tr>
<tr>
<td>238</td>
<td>Gila Cottage</td>
<td>1975</td>
<td>3,094</td>
<td>1 floor</td>
</tr>
<tr>
<td>239</td>
<td>Brazos Cottage</td>
<td>1975</td>
<td>3,295</td>
<td>1 floor</td>
</tr>
<tr>
<td>240</td>
<td>Capitan Cottage</td>
<td>1975</td>
<td>2,745</td>
<td>1 floor</td>
</tr>
<tr>
<td>241</td>
<td>Pecos Cottage</td>
<td>1975</td>
<td>3,094</td>
<td>1 floor</td>
</tr>
<tr>
<td>242</td>
<td>Cibola Cottage</td>
<td>1975</td>
<td>2,745</td>
<td>1 floor</td>
</tr>
<tr>
<td>243</td>
<td>Commons &amp; Service Building</td>
<td>1975</td>
<td>6,248</td>
<td>1 floor</td>
</tr>
<tr>
<td>244</td>
<td>Jemez Office Building</td>
<td>1984</td>
<td>1,680</td>
<td>1 floor</td>
</tr>
<tr>
<td>245</td>
<td>Storage &amp; Shop</td>
<td>1993</td>
<td>3,222</td>
<td>2 floors</td>
</tr>
<tr>
<td>254</td>
<td>Day Treatment Center</td>
<td>1993</td>
<td>10,232</td>
<td>2 floors</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td><strong>1,110,437</strong> gross square feet</td>
<td></td>
</tr>
</tbody>
</table>
VI
HEALTH SCIENCES CENTER PROGRAMS
6.1 DEVELOPMENT PROGRAMS

One of the major determinants of the Center’s development is the forecast of future activities and the related functional arrangements and space needed to accommodate those activities. The projections of patient volumes and bed need assumptions for University Hospital was compiled in the Hospital Master Plan. Relevant forecast volumes and space needs for the other components of the Health Sciences Center were collected in this effort.

The forecasts for the clinical areas within the Mental Health Center, Children’s Psychiatric Hospital, and Carrie Tingley Hospital were derived via a combination of quantitative analysis and user group interviews as summarized in the following material. The underlying demographic information came from the State of New Mexico’s Development Department Forecasts to the year 2030.

6.1.1 MENTAL HEALTH CENTER

The Mental Health Center was built in 1967 as a complex of three buildings. An addition to Building One, the Geriatric Annex, was built in 1983. The MHC is surrounded by landscaped grounds and also contains several patient-access courtyards within the building envelope. The design of this complex has proven problematic. All patients enter the main entry in Building One, including violent patients, creating occasional conflicts and threats to staff and clients. Building security and inpatient facilities are antiquated. The shift from inpatient to outpatient loads due to managed healthcare reforms has resulted in the need for significant space reconfiguration.

The Mental Health Center serves a local and regional population. While inpatient capacity is 72, the current 45 beds is appropriate over the forecast time period. Of the three inpatient units, two are for adults and one is designated for geriatric patients. Current level of service is around 8 adults and 11 geriatric patients per day.

Outpatient treatment is administered in 25-30 consultation rooms. Typical workload is 250-300 patients daily with a total of 7,000-10,000 patients a year.

- Forecasts:
  - Population growth only: increased by changes in State Population.
  - Moderate Forecast: increased by changes in total State Population plus 15% increase for inpatient and 25% for outpatient.
  - Aggressive Forecast: increased by changes in total State Population plus 25% increase for inpatient and 15% for outpatient.
  - Increases beyond the population growth represents potential additional market capture.
  - Center of Alcoholism, Substance Abuse and Addiction (CASAA) non-methadone volumes continue slight decreases.

- Observations:
  - The current number of inpatient beds are adequate for the future.
  - The outpatient volume increases range from 14% to 31% from budgeted 2000 to 2010.

- Inpatient Needs
  - Building new beds that meet modern space guidelines and replacing the existing number of beds would require a doubling of the current inpatient space.
• Outpatient Needs
  – Space plan assumes Programs for Children and Adolescents (PFCA) relocates and MHC captures that space. In the moderate forecast, PFCA building should accommodate increases in outpatient services.
  – Bringing CASAA (non-methadone) onto the campus would however, require a building of approximately 6,000 gross square feet.

6.1.2 CHILDREN’S PSYCHIATRIC HOSPITAL
The Children’s Psychiatric Hospital operates in a residential campus of mainly single story, small dormitory or cottage style buildings located at the northwest corner of the HSC campus. While most of the complex was constructed some twenty years ago, improvements have continued to be made. CPH provides both inpatient and outpatient services, but the mix has shifted largely toward outpatient since Medicaid reforms were instituted. This has resulted in a patient population in the range of 10,000 per year with a far greater turnover than originally anticipated.

CPH serves the entire state with 50% of patients coming from Bernalillo County. The Hospital operates a K-12 school for its patients. Patients are admitted by referral only by state agencies, public schools, doctors and the University Hospital Emergency Department. The current 53 inpatient beds were identified as appropriate over the forecast time period.

• Forecasts:
  – Population growth only: increased by changes in State Population.
  – Moderate Forecast: increased by changes in total State Population plus 15% increase for inpatient and 25% for outpatient.
  – Aggressive Forecast: increased by changes in total State Population plus 25% increase for inpatient and 15% for outpatient.
  – Increases beyond the population growth represents potential additional market capture.

• Observations:
  – The current number of inpatient beds are adequate for the future for the population growth scenario.
  – Opening the additional cottage will be necessary to accommodate volumes in the moderate and aggressive growth scenarios.
  – The outpatient volume increases range from 14% to 31% from 1999 volumes to 2010
  – Must find site to relocate PFCA closer to CPH.
  – Partial Hospital volumes in the future with shift to more day programs and home health.

• Inpatient Needs
  – The existing inpatient facilities are appropriate for the uses they support.

• Outpatient Needs
  – Space plan assumes PFCA program moves to a new building to be located on the CPH site. The building area needs to be approximately 12,000 gross square feet.

6.1.3 CARRIE TINGLEY HOSPITAL
Carrie Tingley Hospital moved from Truth or Consequences, New Mexico to Albuquerque in 1981. It relocated to its current location on University Boulevard in 1985 in a building originally built in 1959 as the University Heights Osteopathic Hospital. This complex has had a number of expansions and renovations, including the addition of a therapy pool in 1993. Carrie Tingley provides inpatient and outpatient services and conducts specialty clinics around the state throughout the year.

A fundamental issue under consideration is combining Carrie Tingley with Children’s Hospital of New Mexico. Consolidating the two entities create both greater operational efficiencies and enhanced identity for each component. This idea warrants detailed analysis in the future, including space planning for its inpatient and outpatient programs.
Carrie Tingley’s current facility is underutilized for its census of 9 patients daily and an annual outpatient workload of 10,000 clinic visits. Twelve inpatient beds are required to meet the peak monthly census, but the annual average census of 6 patients results in 50% of the beds being unoccupied at any given time. Similar situations occur in other specialized spaces such as radiology and outpatient areas. The patient-staff ratio is high due to the small size of the Hospital and existing supply and administrative areas are larger than required and inefficient in their layout.

- **Forecasts:**
  - Population growth only: increased by changes in State Population
  - Moderate Forecast: increased by changes in total State Population plus 15% increase for inpatient and 25% for outpatient.
  - Aggressive Forecast: increased by changes in total State Population plus 25% increase for inpatient and 15% for outpatient.
  - Increases beyond the population growth represents potential additional market capture.

- **Observations:**
  - The current number of inpatient beds are adequate for the future.
  - Existing space is underutilized and inefficient for current uses.

- **Inpatient Needs**
  - The existing inpatient facilities have had some recent upgrades. They are adequate for the short term, but would require additional renovation to meet current norms for a facility of this type.

- **Outpatient Needs**
  - Square footage is above average requirements, but current organization is inefficient. Additional outpatient volume could be accommodated.

### 6.2 MAJOR HSC ELEMENTS

In addition to these special areas, this work effort compiled estimates of needed space over the same time period for:

- The College of Nursing
- The College of Pharmacy
- The School of Medicine
- Health Sciences Center Support Space

For each of these major components of the Health Sciences Center, the space needs for each of the following types of space were estimated using an HSC-developed tabulation of existing space together with the professional judgments of key people in each academic unit:

- **Instructional**
- **Library**
- **Wet Laboratory**
- **Administration**
- **Dry Laboratory**
- **Unassigned**
- **Clinical**

For each type of space, the study team identified:

- Existing space deficiencies (space needed but currently not available)
- The amounts logically replaced because of existing obsolescence (based on the Facility Inventory and Analysis completed as part of this study)
- The amounts of space needed because of forecast growth
- The incremental space needs (replacement of existing obsolete space plus space needed currently and to accommodate growth)
The space estimates are of two types: *net* and *building gross*. *Net* space is defined as the useable space exclusive of major circulation (stairs, elevators) and building systems (air handling, plumbing, electrical). *Building gross* includes both the net useable space and the space needed for major circulation and building systems.

### 6.2.1 COLLEGE OF NURSING
The estimates of need for the College of Nursing are provided in Table 2. The College has relatively minor space needs as shown in the table.

- Current space deficiencies of some 8,000 net and 12,000 gross square feet
- Growth-related space needs of approximately the same amount
- 55% of the incremental need is in dry laboratory space which reflects the college’s intent to emphasize collaborative research activities

### Table 2 College of Nursing Space Needs
*(net square feet)*

<table>
<thead>
<tr>
<th>Replacement Space Needs</th>
<th>Instructional</th>
<th>Wet Labs</th>
<th>Dry Labs</th>
<th>Clinical</th>
<th>Library</th>
<th>Administrative</th>
<th>Unassigned</th>
<th>Total NSF</th>
<th>Total BGSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building 201: School of Medicine #1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Building 209: School of Medicine #2, 5, &amp; 6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Replacement Needs</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Existing Space Needs</th>
<th>Administration</th>
<th>Human Response</th>
<th>Community Health</th>
<th>-</th>
<th>2,600</th>
<th>4,000</th>
<th>1,400</th>
<th>-</th>
<th>8,000</th>
<th>12,441.56</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Existing Space Needs</td>
<td>2,600</td>
<td>-</td>
<td>4,000</td>
<td>-</td>
<td>1,400</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8,000</td>
<td>12,441.56</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Growth-Related Space Needs</th>
<th>Administration</th>
<th>Human Response</th>
<th>Community Health</th>
<th>2,500</th>
<th>5,000</th>
<th>-</th>
<th>-</th>
<th>700</th>
<th>-</th>
<th>8,200</th>
<th>12,600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Growth-Related Space Needs</td>
<td>2,500</td>
<td>-</td>
<td>5,000</td>
<td>-</td>
<td>-</td>
<td>700</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8,200</td>
<td>12,600</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Incremental Space Needs</th>
<th>5,100</th>
<th>-</th>
<th>9,000</th>
<th>-</th>
<th>-</th>
<th>2,100</th>
<th>-</th>
<th>-</th>
<th>-</th>
<th>16,200</th>
<th>25,130</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Space (Net of Replacement Needs)</td>
<td>15,272</td>
<td>1,500</td>
<td>347</td>
<td>592</td>
<td>-</td>
<td>-</td>
<td>3,100</td>
<td>317</td>
<td>21,314</td>
<td>37,374</td>
<td></td>
</tr>
<tr>
<td>Total Projected Space</td>
<td>20,372</td>
<td>1,500</td>
<td>9,347</td>
<td>592</td>
<td>-</td>
<td>-</td>
<td>5,200</td>
<td>317</td>
<td>37,514</td>
<td>62,504</td>
<td></td>
</tr>
<tr>
<td>Space Needs as Percentage of Existing Space</td>
<td>33%</td>
<td>0%</td>
<td>2594%</td>
<td>0%</td>
<td>-</td>
<td>-</td>
<td>66%</td>
<td>0%</td>
<td>76%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASP to BGSF</td>
<td>0.55</td>
<td>0.55</td>
<td>0.7</td>
<td>0.55</td>
<td>0.75</td>
<td>0.7</td>
<td>0.55</td>
<td>0.64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Incremental BGSF</td>
<td>8,273</td>
<td>-</td>
<td>12,857</td>
<td>-</td>
<td>-</td>
<td>3,000</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>25,130</td>
<td></td>
</tr>
</tbody>
</table>
6.2.2 COLLEGE OF PHARMACY

The estimates for the College of Pharmacy are provided in Table 6.2. As the table indicates, the College has significant needs over the forecast time frame.

- Current space deficiencies of some 9,000 net and 15,000 gross square feet
- Major growth-related space needs of 70,000 net and 117,000 gross square feet
- A resultant incremental need of some 80,000 net and 134,000 gross square feet
- Like the other academic units, the College’s most significant incremental space need (56%) is in laboratory space

<table>
<thead>
<tr>
<th>Table 3 College of Pharmacy Space Needs (net square feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Replacement Space Needs</strong></td>
</tr>
<tr>
<td>Building 201: School of Medicine #1</td>
</tr>
<tr>
<td>Instructional 582, Wet Labs 52, Dry Labs 15, Clinical 15, Library -, Administrative -, Unassigned -</td>
</tr>
<tr>
<td>Building 202: School of Medicine #4, 5, 6</td>
</tr>
<tr>
<td>Total Replacement Needs</td>
</tr>
<tr>
<td>Instructional 582, Wet Labs 52, Dry Labs 15, Clinical 15, Library -, Administrative -, Unassigned -</td>
</tr>
</tbody>
</table>

| Existing Space Needs                                    |
| Pharmacy Practice 2,400, Basic Pharmaceutical Sciences 1,440, Administration - | 7,703 | 1,440 |
| Poison Control -                                        |
| NM Retrospective -                                      |
| Future NIH Developmental Center -                       |
| Future Drug Development Center -                        |
| Biology -                                               |
| Total Existing Space Needs                              |
| Instructional 3,840, Wet Labs 1,800, Dry Labs 1,580, Clinical 1,500, Library -, Administrative -, Unassigned - | 9,140 | 15,255 |

| Growth-Related Space Needs                              |
| Pharmacy Practice 8,000, Basic Pharmaceutical Sciences 28,250, Administration 2,160 | 5,100 | 33,590 |
| Poison Control 1,000, NM Retrospective 600, Future NIH Developmental Center 480, Future Drug Development Center 640, Biology 840 | 5,000 | 6,600 |
| Total Growth-Related Space Needs                        |
| Instructional 8,800, Wet Labs 32,990, Dry Labs 18,640, Clinical 1,800, Library -, Administrative -, Unassigned - | 70,770 | 117,732 |

| Total Incremental Space Needs                           |
| Instructional 13,222, Wet Labs 33,942, Dry Labs 12,155, Clinical 1,815, Library -, Administrative -, Unassigned - | 40,574 | 134,189 |

| Existing Space (Net of Replacement Needs)               |
| Instructional 13,935, Wet Labs 11,473, Dry Labs 495, Clinical 2,037, Library -, Administrative -, Unassigned - | 30,916 | 54,997 |

| Total Projected Space                                   |
| Instructional 27,157, Wet Labs 45,415, Dry Labs 12,650, Clinical 3,852, Library -, Administrative -, Unassigned - | 111,490 | 189,186 |
6.2.3 **SCHOOL OF MEDICINE**

The estimates for the School of Medicine are Table 4. As indicated in the table, the School has major needs over the forecast time frame.

- Replacement needs of some 22,000 net and 37,000 gross building square feet
- Existing space shortages of 57,000 net and 97,000 gross square feet
- Growth-related needs of 246,000 net and 424,000 gross square feet
- A resultant total incremental need of 326,000 net and 560,000 gross square feet of building space
- 50% of the incremental need is in laboratory space, 40% in clinical area, and the remaining 10% is instructional and administrative/support space
- The incremental need reflects the School’s intent to place additional emphasis on research activities with HSC

**Table 4: School of Medicine Space Needs**  
*(net square feet)*

<table>
<thead>
<tr>
<th>Replacement Space Needs</th>
<th>Instructional</th>
<th>Wet Labs</th>
<th>Dry Labs</th>
<th>Clinical</th>
<th>Library</th>
<th>Administrative</th>
<th>Unassigned</th>
<th>Total NSE</th>
<th>Total BSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building 201: School of Medicine #2</td>
<td>169</td>
<td>6,224</td>
<td>1,018</td>
<td>3,362</td>
<td>3,121</td>
<td>1,217</td>
<td>4,269</td>
<td>22,171</td>
<td>73,576</td>
</tr>
<tr>
<td>Building 209: School of Medicine #4, 5, 6</td>
<td>3,933</td>
<td>1,167</td>
<td>2,062</td>
<td>2,191</td>
<td>-</td>
<td>3,052</td>
<td>-</td>
<td>10,363</td>
<td>10,363</td>
</tr>
<tr>
<td><strong>Total Replacement Needs</strong></td>
<td><strong>1,531</strong></td>
<td><strong>7,411</strong></td>
<td><strong>3,680</strong></td>
<td><strong>6,481</strong></td>
<td><strong>3,121</strong></td>
<td><strong>4,269</strong></td>
<td><strong>-</strong></td>
<td><strong>22,371</strong></td>
<td><strong>37,576</strong></td>
</tr>
<tr>
<td>Existing Space Needs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faculty Offices</td>
<td>3,250</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6,650</td>
<td>13,300</td>
</tr>
<tr>
<td>Faculty Offices (100 @ 130 SF)</td>
<td>7,600</td>
<td></td>
<td>7,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15,600</td>
<td></td>
</tr>
<tr>
<td>Conference Rooms (6 @ 251 SF)</td>
<td>1,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,500</td>
<td>1,500</td>
</tr>
<tr>
<td>Administrative (150 @ 195 SF)</td>
<td>6,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13,000</td>
<td></td>
</tr>
<tr>
<td>Small Classrooms (18 @ 400 SF)</td>
<td>3,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6,000</td>
<td></td>
</tr>
<tr>
<td>Auditorium (1 @ 1,500 SF)</td>
<td>9,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9,000</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous Needs</td>
<td>2,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total Existing Space Needs</strong></td>
<td><strong>9,500</strong></td>
<td><strong>13,050</strong></td>
<td><strong>2,000</strong></td>
<td><strong>21,550</strong></td>
<td><strong>-</strong></td>
<td><strong>13,000</strong></td>
<td><strong>-</strong></td>
<td><strong>57,180</strong></td>
<td><strong>97,974.83</strong></td>
</tr>
<tr>
<td>Growth-Related Space Needs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Basic Science Faculty (4 FTE’s @ 131 SF)</td>
<td>5,950</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5,950</td>
<td></td>
</tr>
<tr>
<td>Clinical Faculty (6 FTE’s @ 160 SF)</td>
<td>6,450</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6,450</td>
<td></td>
</tr>
<tr>
<td>Basic Science (6 FTE’s @ 160 SF)</td>
<td>6,450</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6,450</td>
<td></td>
</tr>
<tr>
<td>Educators (2 FTE’s @ 120 SF)</td>
<td>2,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,000</td>
<td></td>
</tr>
<tr>
<td>Staff to Support New Faculty (375 FTE’s @ 100)</td>
<td>20,200*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20,200*</td>
<td></td>
</tr>
<tr>
<td>Lab Space Needs (17 @ 870 SF)</td>
<td>150,810</td>
<td></td>
<td>57,620</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>208,430</td>
<td></td>
</tr>
<tr>
<td>Clinical Trials Center</td>
<td>15,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15,000</td>
<td></td>
</tr>
<tr>
<td>Additional Clinical Space Needs</td>
<td>50,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total Growth-Related Space Needs</strong></td>
<td><strong>2,680</strong></td>
<td><strong>64,449</strong></td>
<td><strong>61,910</strong></td>
<td><strong>97,910</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>-</strong></td>
<td><strong>246,780</strong></td>
<td><strong>424,533.77</strong></td>
</tr>
<tr>
<td>Total Incremental Space Needs</td>
<td><strong>13,631</strong></td>
<td><strong>102,901</strong></td>
<td><strong>67,530</strong></td>
<td><strong>124,941</strong></td>
<td><strong>-</strong></td>
<td><strong>17,269</strong></td>
<td><strong>-</strong></td>
<td><strong>326,231</strong></td>
<td><strong>560,886</strong></td>
</tr>
<tr>
<td>Existing SF (Not of Replace, Hosp., MHC, CPH, Nm)</td>
<td>56,879</td>
<td>134,790</td>
<td>20,909</td>
<td>74,029</td>
<td>42,180*</td>
<td>35,019</td>
<td>362,937</td>
<td>635,414.42</td>
<td></td>
</tr>
<tr>
<td><strong>Total Projected Space</strong></td>
<td><strong>69,710</strong></td>
<td><strong>237,691</strong></td>
<td><strong>80,499</strong></td>
<td><strong>190,861</strong></td>
<td><strong>-</strong></td>
<td><strong>59,449</strong></td>
<td><strong>35,019</strong></td>
<td><strong>689,220</strong></td>
<td><strong>1,195,501</strong></td>
</tr>
</tbody>
</table>
6.2.4 HEALTH SCIENCES CENTER SUPPORT SPACE

In addition to forecasting the space needs for each major academic unit, the work effort also estimated the support space needed in the HSC Library as well as for the campus developments currently not present on site, but requisite to recruiting and retaining the best students, faculty, and staff.

Health Science Center space needs over the planning horizon are detailed in Table 5. As indicated:

- The Library has incremental needs of approximately 30,000 net square feet of which two-thirds is for expected growth
- The North Campus lacks a student union, fitness center and child care facilities, among others, which total some 80,000 net square feet
- The resultant total incremental needs of 111,000 net and 188,000 gross square feet were identified as appropriate time-phased development for HSC

| Table 5 | HSC Support Space Needs  
<table>
<thead>
<tr>
<th>(net square feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Replacement Space Needs</strong></td>
</tr>
<tr>
<td>Building 201: School of Medicine #2</td>
</tr>
<tr>
<td>Total Replacement Needs</td>
</tr>
<tr>
<td><strong>Existing Space Needs</strong></td>
</tr>
<tr>
<td>Replace HSC Computer Space</td>
</tr>
<tr>
<td>Staff Offices</td>
</tr>
<tr>
<td>Library: Triage</td>
</tr>
<tr>
<td>Technology/Classroom</td>
</tr>
<tr>
<td>Skill Labs</td>
</tr>
<tr>
<td>Total Existing Space Needs</td>
</tr>
<tr>
<td><strong>Growth-Related Space Needs</strong></td>
</tr>
<tr>
<td>Lab - Staff growth</td>
</tr>
<tr>
<td>Computer lab</td>
</tr>
<tr>
<td>Small Conf Rooms</td>
</tr>
<tr>
<td>Flex skill labs (distributed)</td>
</tr>
<tr>
<td>Reading room</td>
</tr>
<tr>
<td>IT training (2 @ 250)</td>
</tr>
<tr>
<td>Biomedical Communications</td>
</tr>
<tr>
<td>Student Union</td>
</tr>
<tr>
<td>Health Club/Student Fitness Center</td>
</tr>
<tr>
<td>Faculty Club</td>
</tr>
<tr>
<td>Child Care/Elder Care</td>
</tr>
<tr>
<td>Residential/Cooperative Care/Family Housing</td>
</tr>
<tr>
<td>Total Growth-Related Space Needs</td>
</tr>
<tr>
<td><strong>Total Incremental Space Needs</strong></td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td><strong>Existing Space (Net of Replacement Needs)</strong></td>
</tr>
<tr>
<td>Total Projected Space</td>
</tr>
<tr>
<td>Total Projected Space</td>
</tr>
</tbody>
</table>
6.2.5 TOTAL SPACE NEEDS
The aggregate space needs for each type of space for the academic and support functions within the Health Sciences Center over the forecast time period are shown in the Table 6. The incremental space needs for University Hospital are not included in the table.

As shown, the Center’s space needs are significant with:

- An incremental need of some 800,000 net and 1.3 million gross square feet
- Nearly 70% of that incremental space need is for laboratory and clinical areas
- The other 30% is for instructional and support space centrally important to the desired academic research environment

Table 6 Total HSC Space Needs
(net square feet)

<table>
<thead>
<tr>
<th>Replacement Space Needs</th>
<th>Instructional</th>
<th>Wet Labs</th>
<th>Dry Labs</th>
<th>Clinical</th>
<th>Library</th>
<th>Administrative</th>
<th>Unassigned</th>
<th>Total NSF</th>
<th>Total BGSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building 201, School of Medicine #2</td>
<td>2,113</td>
<td>7,463</td>
<td>3,895</td>
<td>5,406</td>
<td>922</td>
<td>4,268</td>
<td>-</td>
<td>23,918</td>
<td>56,662</td>
</tr>
<tr>
<td>Building 209, School of Medicine #4, 5, 6</td>
<td>1,363</td>
<td>1,187</td>
<td>2,862</td>
<td>2,119</td>
<td>-</td>
<td>3,052</td>
<td>-</td>
<td>10,383</td>
<td></td>
</tr>
<tr>
<td>Total Replacement Needs</td>
<td>3,475</td>
<td>8,650</td>
<td>6,357</td>
<td>7,615</td>
<td>922</td>
<td>7,321</td>
<td>-</td>
<td>34,341</td>
<td></td>
</tr>
<tr>
<td>Total Existing Space Needs</td>
<td>15,940</td>
<td>12,850</td>
<td>33,950</td>
<td>31,550</td>
<td>9,200</td>
<td>81,400</td>
<td>-</td>
<td>184,890</td>
<td>286,761</td>
</tr>
<tr>
<td>Total Growth-Related Space Needs</td>
<td>13,900</td>
<td>116,530</td>
<td>77,550</td>
<td>268,541</td>
<td>19,700</td>
<td>10,140</td>
<td>81,017</td>
<td>586,177</td>
<td>1,037,125</td>
</tr>
<tr>
<td>Total Incremental Space Needs</td>
<td>33,315</td>
<td>138,030</td>
<td>117,057</td>
<td>307,706</td>
<td>29,072</td>
<td>106,861</td>
<td>81,017</td>
<td>815,400</td>
<td>1,380,549</td>
</tr>
<tr>
<td>Existing Space (Net of Replacement Needs)</td>
<td>92.666</td>
<td>151,623</td>
<td>30,000</td>
<td>570,283</td>
<td>33,900</td>
<td>84,433</td>
<td>36,409</td>
<td>1,087,402</td>
<td>1,770,615</td>
</tr>
<tr>
<td>Total Projected Space</td>
<td>125,981</td>
<td>209,653</td>
<td>147,057</td>
<td>405,909</td>
<td>63,730</td>
<td>191,294</td>
<td>118,306</td>
<td>1,022,810</td>
<td>3,151,164</td>
</tr>
</tbody>
</table>
6.3 DEVELOPMENT STRATEGIES
Accommodating Health Sciences Center incremental space needs in a fashion that meets the HSC’s goals and objectives in the most cost-effective manner involves development strategies that:

- Provide facilities that anticipate the science to be accommodated while providing maximum flexibility for internal reconfigurations and uses within the facilities via development practices that optimize the requisite investments.

- Organize land uses and access/circulation patterns to optimize campus commerce flows and maintain centralized campus environment.

- Coordinate infrastructure/central plant facilities to support existing and proposed facilities both north and south of Lomas Boulevard.

Exactitude and certainty regarding the science to be accommodated in the Health Sciences Center is impossible at this early point in the visioning of HSC. It is however possible to apply well thought-out facility prototypes and development methods to the land use planning and to identify capital budget needs for realization of the HSC’s vision.

Based on our understanding of the HSC’s intent and needs as well as on our collective experience in design for science, we have compiled a building prototype as diagrammed in the following material. Most importantly, the prototype accommodates a broad range of biomedical research uses.

The dimensions of the prototype are 120 feet wide by 240 feet long and we envision each building to be four stories, with an aggregate gross square footage of 115,000. The elevator and service core is centrally located and exit stairs are incorporated at the ends of the building. A structural bay of 30 feet by 30 feet has been assumed. The biomedical research uses would fit within the 120-foot building width and the dimensions allow best practices for internal lab and office layouts.
In the visioning work at hand, we have assumed the Center will add 12 such prototypical facilities and related parking to meet its forecast space needs over the planning horizon. In essence, the prototypes were the “gaming” pieces applied in considering an array of land use organization and access/circulation arrangements. The array of development concepts defined and described in the effort, is provided in the material that follows.

The study team also put some energy into defining the economics that would come into play in developing the needed buildings. We envisioned a “smart shell” development practice based on the likely variety of science needs and on our immediately current experience in design for both public and private sector sciences. As described in the following material, our definition of a smart shell contrasts with typical high-end general purpose office buildings in that it:

- Has a more significant structural frame and live load capacity, and is more vibration resistant
- Has heavily engineered heating, ventilating, air conditioning and electrical systems geared to medical science
- Has intensive telecommunications capability

The intent is for such “muscular” building shells to cost-effectively accommodate changes in occupant needs and user changes in it, and to do so quickly.

As a Health Sciences Center facility investment strategy, the intent is to make the requisite up-front investment in the interest of both long term flexibility and cost-effectiveness. With such a plan, the HSC would have the ability to proceed with development of the needed shell space in advance of detailed room-by-room definitions and designs and to finish out the shelled space to the science needs in a more contemporaneous manner. The University would have the ability to accommodate “change-in-science needs” cost-effectively as well as changes in existing definitions/designs over the multi-year capital budgeting, design, and construction process.

The smart shell attributes are defined as follows.

6.3.1 SITE
- Sufficient dock space to accommodate delivery of goods to multiple users, assuming bulk is delivered to a HSC warehouse and then distributed. The dock also needs to accommodate trash and recycle pick up
- Site amenities extended or added to the site to serve occupants with a variety of outdoor recreational activities
- Approximate parking: 4/1,000 square feet

6.3.2 ARCHITECTURAL
Type I construction will give users greatest freedoms in size and configuration of laboratory spaces.

6.3.3 STRUCTURAL
- Live load capacity: no less than 150 psf
- Vibration characteristics: 1,000 micro inches/second on upper levels, 250 micro inches/second on grade level
- Floor-to-floor heights: 16 feet on upper floors, 20 feet on grade level and/or basement levels
- Structural bay dimensions that prove to be least intrusive in their geometry to a variety of widely accepted lab planning modules. We suggest a 30 foot by 30 foot module
6.3.4 HVAC
- Chilling capacity to hold entire floors at 68 degrees F, 24 hour/day, 365 days/year
- Temperature tolerance of 2 degrees F
- Non-recirculating air exchange rate of 8 to 10 air changes per hour across all usable space, 70% filtration
- Sufficient air shafts for both supply and exhaust systems to accommodate house systems and dedicated exhaust systems as required by a wide variety of users
- Sufficient redundancy capability to hold critical functions at temperature and maintain safe environments during power outages or maintenance periods
- Systems and shaft spaces designed to address multi-user buildings and floors of buildings

6.3.5 PLUMBING
- Suggest, if not actually collar, floor penetrations for drains on modular dimensions
- Drain pipe material to be corrosive resistant
- Each building be plumbed to sanitary waste, but also have access to a plumbing stub-out for the HSC’s chemical waste system
- Sufficient pipe shaft space to accommodate potable and non potable hot and cold water systems, a purified water system, compressed air, nitrogen, carbon dioxide and natural gas
- At least one specialized gas cylinder closet per floor to accommodate gas cylinders that are unique to the user group(s) on that floor
- All piped utilities organized by floor and a “T and Valve” policy being implemented that reacts to the lab planning module employed on each floor
- Fully sprinkled construction.

6.3.6 ELECTRICAL, LIGHTING & TELECOMMUNICATIONS
- Suggest sub-metering strategy that would allow at most three user groups per floor on at least one floor of each building, remaining floors each metered as a whole
- Sufficient capacity and circuitry for full and extensive lab use across all usable space using both 120V and 208 V power
- Additional circuit capacity to accommodate isolated circuits for sensitive laboratory instrumentation
- Sufficient emergency power to maintain emergency lighting, room air pressurization and 20% of total lab equipment loads
- Isolated grounds per lab module at grade level and one isolated ground per 5,000 usable square feet on upper levels
- Energy efficient lighting with capacity to achieve 80 fc at three feet above the finished floor as a building base standard, with non-glare lenses and motion detectors on a modular basis. Be prepared to supplement with secondary, special use lighting systems on basement and ground levels.
- Suggest adoption of a university-grade telephone and data transmission system with full and heavy coverage across all usable space.

6.3.7 MISCELLANEOUS
- Environmentally responsive and energy saving systems and features where appropriate to this building usage.
### Table 7  Smart Shell Technical Specifications

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Smart Shell</th>
<th>Class &quot;A&quot; - Typical Office Building</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structural</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Live load capacity:</td>
<td>Unlimited, but should be a 8&quot; thick slab</td>
<td>Unlimited, but could only be a 4&quot; thick slab</td>
</tr>
<tr>
<td>ground level</td>
<td>150 lbs</td>
<td>50-100 lbs, average 75 lbs</td>
</tr>
<tr>
<td>upper level</td>
<td>75 lbs in vicinity of penthouse</td>
<td>25 lbs</td>
</tr>
<tr>
<td>roof</td>
<td>50-100 lbs, average 75 lbs</td>
<td></td>
</tr>
<tr>
<td>2. Vibration design</td>
<td>500 microinches / second</td>
<td>16,000 microinches / second</td>
</tr>
<tr>
<td>3. Structural system</td>
<td>Concrete slab, thickened slab</td>
<td>Steel frame with concrete slab on steel decking or post-tensioned concrete</td>
</tr>
<tr>
<td><strong>HVAC</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Fresh air changes per hour</td>
<td>Accommodate 8-12+, no recirculation</td>
<td>15% outdoor 20 cfm</td>
</tr>
<tr>
<td>5. Exhaust air</td>
<td>Up to 110%</td>
<td>About 90% of outdoor air only spaces</td>
</tr>
<tr>
<td>6. Fresh air filtration</td>
<td>30-85%</td>
<td>30%</td>
</tr>
<tr>
<td>7. Cooling capacity</td>
<td>200 sq ft / ton</td>
<td>400 sq ft / ton</td>
</tr>
<tr>
<td>8. Humidity control</td>
<td>Oversized cooling coils, reheat at air handling units, possibly zone humidifiers</td>
<td>none</td>
</tr>
<tr>
<td>9. Multi-user zoning logic &amp; control</td>
<td>Pro rata with integrated controls</td>
<td>Pro rata, DDC system with zone control</td>
</tr>
<tr>
<td>10. Hours in use per day</td>
<td>24 hours / day</td>
<td>12 hours / day with manual override</td>
</tr>
<tr>
<td>11. Heating</td>
<td>By zone</td>
<td>Perimeter</td>
</tr>
<tr>
<td><strong>Piped Utilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Vacuum breaker separating lab from potable water</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>13. Compressed air system</td>
<td>Capable</td>
<td>No</td>
</tr>
<tr>
<td>14. Vacuum system</td>
<td>Capable</td>
<td>No</td>
</tr>
<tr>
<td>15. Chemical waste</td>
<td>Minimum of neutralization tank before entering sewer system</td>
<td>No</td>
</tr>
<tr>
<td>16. Sanitary Waste</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Electrical</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Multi-user metering strategy</td>
<td>Sometimes</td>
<td>Sometimes</td>
</tr>
<tr>
<td>18. Watt capacity per square foot</td>
<td>40+</td>
<td>14-18</td>
</tr>
<tr>
<td>19. Emergency power</td>
<td>Life safety, critical ventilation, equipment</td>
<td>Life safety only</td>
</tr>
<tr>
<td>20. Standby power</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>21. Uninterrupted Power Supply (UPS)</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>22. Lighting level 3'-0&quot; above finish floor</td>
<td>80-100 footcandles, multi systems capable</td>
<td>30-50 footcandles</td>
</tr>
</tbody>
</table>
These smart shells will allow the HSC to act and react quickly to serve user needs while also allowing itself to work within a highly efficient structure. Users should recognize the underlying logic of these structures and be able to manipulate their work with a minimum of effort to work within its constraints. Routine building management should easily maintain a safe and clean operation for everyone involved.

The facility prototypes and smart shell development method were used in compiling order-of-magnitude estimates of the capital costs associated with the HSC’s vision.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Smart Shell</th>
<th>Class &quot;A&quot; - Typical Office Building</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Telecommunications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Utility entrance facility</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>24. Main distribution frame (MDF) room</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>25. MDF size</td>
<td>150 sq ft / 10,000 sq ft of floor plate</td>
<td>N/A</td>
</tr>
<tr>
<td>26. Intermediate distribution frame (IDF) room</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>27. IDF size</td>
<td>150 sq ft / 10,000 sq ft of floor plate</td>
<td>N/A</td>
</tr>
<tr>
<td>28. Riser cable closet</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>29. Cable plant</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>30. Telephone switch service</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>31. Data network services</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Architectural</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Bay size</td>
<td>30’ x 30”</td>
<td>30’ x 40”</td>
</tr>
<tr>
<td>33. Floor-to-floor height</td>
<td>16’-18”</td>
<td>12’-13”</td>
</tr>
<tr>
<td>34. Finished ceiling height</td>
<td>9’</td>
<td>9’</td>
</tr>
<tr>
<td>35. Oversized utility shafts</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>36. Loading dock &amp; dedicated freight elevator</td>
<td>Yes</td>
<td>Designated passenger cab</td>
</tr>
<tr>
<td>37. Distance from window to building core elements</td>
<td>60”</td>
<td>35’-45’</td>
</tr>
<tr>
<td>38. Window sill height</td>
<td>3’-4”</td>
<td>2’-6&quot; to 3’-0”</td>
</tr>
<tr>
<td>39. Window head height</td>
<td>9’</td>
<td>8’-9’</td>
</tr>
<tr>
<td>40. Type I, fully sprinklered construction</td>
<td>Preferred</td>
<td>Varies</td>
</tr>
<tr>
<td>41. Expected gross to net ratio</td>
<td>.55</td>
<td>.75</td>
</tr>
</tbody>
</table>
6.4 ORDER-OF-MAGNITUDE COST ESTIMATES

The facility prototype was used in estimating the order-of-magnitude construction costs for each of the development concepts defined, described, and comparatively evaluated over the course of the master planning effort. The shell and core estimate for the prototype is provided in the following material. The estimate should be understood to be:

- Shell and core construction only with costs for building out the finished space within the shell requiring additional cost, specifically
- May 2000 shell and core costs per square foot at approximately $100, with the cost per square foot for building out the shell and core for a variety of types of sciences requiring an additional $100-$250 depending on the type of science, for a total construction cost of $200-$350 per square foot
- Exclusive of “soft” costs for professional fees, university management costs, etc. In our experience, these soft costs range, in our experience from 20-55% of total construction cost.

In the aggregate, the HSC will require the equivalent of 12 prototypes to meet its incremental need of 1.3 million square feet over the planning horizon. The prototypes are separate and distinct from the renovation and new construction projects that have been identified for University Hospital.

The construction costs for the 12 prototypical buildings can be estimated in the following range:

**Shell and Core Construction Costs:**

12 Buildings x 115,200 sq ft / building

= 1,382,400 sq ft x $100/sq ft

$138 million

**Finished Space Within the Shell and Core:**

(75% departmental net/gross, includes finishing major and minor circulation as well as the actual net usable space for science)

1 million sq ft x $100-250 sq ft

$100-250 million

**Total Prototype Construction Costs**

$238-388 million

In addition to facilities, as reflected in the alternative development concepts, the planning effort identified the need for structured parking to accommodate the net resultant incremental parking demand created by the new development. A ratio of 3 parking spaces per 1,000 square feet was applied to the incremental need of 1.3 million gross square feet to identify a structured parking need of approximately 4,000 cars. Using an estimated construction cost per structured parking stall of $10,000, the cost of the additional HSC parking is $40 million in May 2000 dollars. Utility and transportation capital improvement costs are not included in these order-of-magnitude cost estimates.

These costs are a backdrop to the continued planning for HSC’s future.
<table>
<thead>
<tr>
<th>Description of Work</th>
<th>Quantity</th>
<th>Unit / Measure</th>
<th>$ / Unit</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimate Summary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>001 Demolition - Not Included</td>
<td></td>
<td>NIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>011 Foundations</td>
<td>28,800</td>
<td>FPA</td>
<td>3.25</td>
<td>93,600</td>
</tr>
<tr>
<td>021 Slab on Grade</td>
<td>28,800</td>
<td>FPA</td>
<td>4.25</td>
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<td>113 Special Construction - Canopy</td>
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<td>Contractor Overhead &amp; Profit</td>
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<td>Contingency</td>
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<td><strong>Total Current Construction Cost</strong></td>
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<td>GSF</td>
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<td>Escalation to Bid Date</td>
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<tr>
<td>Total Construction Cost at Bid Date (May 2000 - Rounded)</td>
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<td>GSF</td>
<td>98.96</td>
<td>$11,400,000</td>
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7.1 INITIAL DESIGN CONCEPTS

The process of creating the final master development plan began during the summer of 1999. A work plan was adopted by the design team that was important in fostering extensive involvement by the HSC Leadership Council in the process. The team began with assemblage of background information, data and analysis from previous campus planning exercises, and an in-depth understanding of existing conditions. An inventory and analysis of virtually all the buildings comprising the HSC campus was conducted over a two month period by both architects and engineers. Various sessions with members of the Leadership Council and representatives of the schools and colleges focused on present space deficiencies and projected needs to the year 2020. The Council embarked on developing its own visioning document, the *HSC Strategic Plan*, that helped to identify present and future directions in clinical, research, and teaching environments. This effort led naturally to a good understanding of both short and long term building needs, as addressed in Part VII of this document.

Fanning Bard Tatum and NBBJ assembled a diverse team of architects and planners and conducted a series of design workshops in December, 1999, to develop a site master plan. These sessions were held in a conference room on campus in order to facilitate involvement of the HSC Leadership Council along with personnel from the UNM Office of Facilities Planning. The weeklong session began with a presentation of information to the Leadership Council gathered to that point. The data included:

- summary of *Barton Myers Plan* as relates to the HSC campus,
- goals of the Health Sciences Center and each stakeholder,
- capital improvements and descriptions of new facilities,
- review of existing building conditions, and
- discussion of HSC development precepts.

After the initial presentation and subsequent feedback from the Leadership Committee, the team met with various groups to gather additional information. Finally, a composite of all the known considerations was assembled. The design team brainstormed numerous ideas that were eventually reduced down to three site plan options. The schemes were drawn up, comparatively evaluated, and “graded” by the team. All three were presented to the Leadership Committee on the final day. They can be summarized as follows:
7.1.1 SCHEME 1 – NORTHWEST CONNECTION
Yale Boulevard remains in its current alignment through the middle of the North Campus open space with a new main HSC entrance located at the intersection of Tucker Road and Yale at the northwest corner of the campus. The University Hospital main entrance would remain in its present location. Secondary entrances are located for access to parking garages and to allow some vehicular penetration into the site, particularly for clinical functions. Main paths loop through the campus and some separation of circulation levels (emergency, service, vehicular, pedestrian) could be achieved. Buildings are grouped in clusters generally according to their function: clinical, research and education. At the present main HSC entrance at Marble and Stanford, a third building is shown completing the 1977 North Campus Master Plan’s intent to create a plaza enclosed on three sides with its open side directed to the northeast and the adjacent residential neighborhood.

Figure 4 View Looking Northeast Across Open Space
VII. Development Plan

Map 2  Concept 1 - The Northwest

- C  Clinical
- Ca  Cancer Research Addition
- C/E  Child/Elder Care
- CP  Central Plant
- FC  Faculty Club
- HU  Education & Student Union
- Lib  Library Addition
- Osom  Office - School of Medicine
- Ouh  Office - University Hospital
- OMI  Office of the Medical Examiner
- OP  Outpatient Surgery
- P  Parking
- R  Research
- Re  Residence
- W  Warehouse

Legend:
- New Buildings
- Existing Buildings
- Parking Structures
- Open Space
- Green Space
- Primary Pedestrian Path
- Roads & Streets
- Entries
7.1.2 SCHEME 2 – NEW WEST
Nicknamed “The Wedge”, this concept emphasizes the HSC main entrance as a clear continuation of the North Campus open space penetrating into the center of the HSC complex. At the apex of the wedge, “Spanish Steps” would connect the lower grade with the existing HSC plaza to create a strong visual and pedestrian linkage. Access to parking garages and service points are through secondary entrances. The University Hospital main entry on Lomas would change to emergency-access-only, requiring redesign of the Hospital’s main entrance contrary to the earlier Hospital Master Plan. Yale is realigned along the east side of the open space and a traffic circle is added at the Tucker and Yale intersection. East of the traffic circle, Tucker is realigned to connect directly to Marble Avenue. This plan features good separation of circulation levels: emergency, service, vehicular, and pedestrian. Primary pedestrian paths are configured in three intersecting loops. New buildings are grouped in three distinct clusters that include clinical, educational and research functions.
VII. Development Plan

Map 3 Concept 2 - The “New” West

- C Clinical
- Ca Cancer Research Addition
- C/E Child/Elder Care
- CP Central Plant
- FC Faculty Club
- HU Education & Student Union
- Lib Library Addition
- Osom Office - School of Medicine
- Ouh Office - University Hospital
- OMI Office of the Medical Examiner
- OP Outpatient Surgery
- P Parking
- R Research
- Re Residence
- W Warehouse

Legend:
- New Buildings
- Existing Buildings
- Parking Structures
- Open Space
- Green Space / The Wedge
- Primary Pedestrian Path
- Roads & Streets
- Entries
7.1.3 SCHEME 3 – NORTH-SOUTH AXIS
This plan most closely resembles the layout proposed in the Barton Myers Plan with the exception of road alignments. The Barton Myers Plan keeps Yale in its current location and Tucker is shown straightened out to connect directly with Marble Avenue. This concept relocates Yale to the east edge of the open space and keeps Tucker in its current location. The main entrance to the HSC and University Hospital are combined at the present Hospital entry. Secondary entrances off Tucker and Vassar are intended for service vehicles and to access clinical functions. Vehicular site penetration is minimal and pedestrian paths are configured on a modified loop and north-south axis. Significant buildings are placed along the east edge of the open space and are grouped according to their primary function.

Figure 6 View Along Pedestrian Path
VII. Development Plan

New Buildings
Existing Buildings
Parking Structures
Open Space
Green Space / The Wedge
Primary Pedestrian Path
Roads & Streets
Entries

Clinical
Ca Cancer Research Addition
C/E Child/Elder Care
CP Central Plant
FC Faculty Club
HU Education & Student Union
Lib Library Addition
Osom Office - School of Medicine
Ouh Office - University Hospital
OMI Office of the Medical Examiner
OP Outpatient Surgery
P Parking
R Research
Re Residence
W Warehouse
## Table 9  Comparative Evaluation Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Scheme 1 NW Connection</th>
<th>Scheme 2 New West</th>
<th>Scheme 3 N/S Axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Creating improved visibility supporting market growth of HSC as multifaceted education, patient care and research organization.</td>
<td>4</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>2. Opportunities to blend education, patient care and research components.</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>3. Communicating appropriate and improved image; 24-hour community, compassion, rigor, high science.</td>
<td>4</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>4. Flexibility and cost effectiveness; new technology and science, internal change-out, external growth, development.</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>5. Create development opportunities for partnering/joint ventures; signature/high profile sites, completeness along the way, ease of development.</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>6. Access/circulation/separation/ ease of wayfinding: vehicular, pedestrian, emergency, service vehicles.</td>
<td>4</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>7. Creation of community, friendly edge and context feel.</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. Positive impacts on Main Campus and the surrounding neighborhood.</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>9. Support of University Hospital's &quot;Go West&quot; plan.</td>
<td>3</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43</strong></td>
<td><strong>48</strong></td>
<td><strong>41</strong></td>
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</tbody>
</table>
The relative merits of each of the options were discussed before the team revealed the results of its evaluation to the Committee. Table 7.1 itemizes the results of the comparative evaluation:

Scheme 2 – or “The Wedge” – met the criteria most comprehensively for a number of reasons. Grouping new buildings in discrete clusters allows for phased construction to occur in one area at a time instead of disrupting the entire campus. Restricting the existing Hospital entry to only emergency access would mitigate some of the current problems with traffic bottlenecks, directional confusion and pedestrians, cars, and ambulances crossing paths. Probably the most successful aspect of this scheme is the wedge itself. Its location allows for visibility from Lomas and extends the open space into the campus. As an entry, it allows for different components of the HSC to have a visible “address” off the wedge and provides easy accessibility to a number of functions.

All schemes shared certain attributes. Primary among these were ready combinations of education, research, and patient care functions in clusters of new buildings. All attempted to defer to adjacent residential neighborhoods to the northeast through lower densities and no additional points of access. Each scheme distributed parking structures throughout the Center. Each acknowledged the “Go West” Hospital expansion developed in the earlier University Hospital Master Plan. Finally, all schemes recognized a site on the east side of the central plaza as an ideal location for the planned Education Building, a building that could also contain a much-needed central student union.
7.2 THE DEVELOPMENT PLAN CONCEPT
The Health Sciences Center Master Plan is a refinement of “The Wedge” and integrates some of the best ideas from the other schemes. The plan illustrated in the following descriptions, maps and diagrams is intended to serve as an outline for future development and improvements to the existing campus. Instead of identifying precise building footprints or configurations, the plan examines developable land capacity and proposes general building clusters. The plan also suggests options to address issues of lack of HSC identity, problems with entries and circulation, and infrastructure requirements.

This plan draws certain conclusions about student and faculty size based on discussions with stakeholders. Most of the groups anticipate moderate, but steady growth over the next twenty years, particularly in research faculty. The *Barton Myers Plan* predicts that the student population for the entire campus would increase 29% by 2020, to a population limit of 35,000 students however, growth of the North Campus population is expected to occur at a lower rate.

Figure 7     View Along Relocated Yale Boulevard
VII. Development Plan

Health Sciences Center
University of New Mexico Main Campus
Area addressed in Barton Myers Plan
Private
High Use Open Space

Xeriscape Open Space
Hardscape
Trees
Arroyo Transition Zone
Arroyo
7.2.1 OPEN SPACE, ENTRIES & CIRCULATION

One of the primary drivers of the master plan is to overcome the lack of identity of the Health Sciences Center. Its only defined entrance, at its northeast corner, is accessible from two local streets in a residential neighborhood several blocks from collector streets. As well, this “entrance” lacks parking and any semblance of way-finding. The campus has a central plaza accessible to pedestrians but this feature is all but invisible from any vantage point outside of the campus. University Hospital abuts the south side of the HSC campus, blocking much of the campus from view. Pedestrian links from the HSC campus to University Hospital are circuitous and ill-defined.

Beyond the issue of poor identity, the Center also lacks a sense of place. Whereas the main campus has “icon” buildings of historic significance at its core, such as Zimmerman Library and Scholes Hall that are connected by a green space with the duck pond, there are no buildings in the HSC complex that are emblematic of its medical focus. A survey of consumer perceptions conducted in 1998 found that many potential patients and users of the Hospital and HSC weren’t clear about where these entities were located, how to get to them or even their correct name. It becomes obvious after visiting the North Campus that easily recognizable entries and a continuous system of circulation would help to alleviate this confusion. Due to the number and types of users on the North campus, separation between levels of circulation is of prime importance. Patients, faculty, staff and students all have different circulation requirements. The same can be said for bicycles, cars, and emergency and service vehicles. In conjunction with creating obvious entrances for the HSC and Hospital, its roads, service drives and sidewalks need to have a clear sense of direction and create a cohesive system with the open spaces.
Primary Vehicular Circulation
Service / Emergency Vehicle Circulation
Primary Pedestrian Path
Primary Entry
Secondary Entry
Service Entry
This Master Plan accepts the open space concept linking the main and north campuses articulated in the *Barton Myers Plan*. It seeks to take advantage of such a landscaped space as an amenity and augments it by extending it into the campus via “the wedge”. The wedge would serve as the main entrance to the HSC and would be visible from Lomas, as well as identified through signage. Relocating Yale to the east side of the open space eliminates its conflict with this roadway, which would otherwise divide the open space in half. This change would require modifications in the signaling of cross streets along this portion of Lomas by having traffic lights at the University, Yale and Girard intersections, but eliminating the signal at the Hospital entrance, to be used only by emergency vehicles.

With Yale serving as the primary north-south link through the campus, the access road along the drainage channel would be improved and provide an east-west connection to the wedge. A portion of the channel would be covered from Yale to the point where it currently daylights at the Hospital parking garage. Changes in paving treatment at key intersections such as the Yale/wedge entrance would help to slow car traffic and enhance pedestrian use.

A new plaza in front of the existing Cancer Center would lead directly to the “Spanish Steps” and connect with the eastern end of the wedge. This location would also be ideal as a patient and visitor pickup/drop off area for the Hospital and Health Sciences Center.
The main HSC plaza is at the center of the campus and is an important pedestrian space used for gathering, eating and recreation, as well as a primary circulation route. It is largely hard-surfaced with concrete pavers and contains some landscaping, bike racks and seating under a wood ramada. Given the mild New Mexico climate, this area is an important amenity on the campus. With the addition of the Spanish Steps, the plaza will be readily accessible to both Hospital and HSC entrances. Other improvements such as more plantings, shade structures, varied paving patterns and food carts would further enhance this open space.

Many existing buildings have individual courtyards or isolated landscape treatments. As a way to integrate the campus, it is suggested that the circulation paths and open spaces be linked to create a continuous pedestrian system connecting the campus visually and functionally.

A smaller “wedge” would be created at the Tucker-Yale turnaround at the northwest corner of the campus. It would serve as a secondary entrance to the proposed building cluster at this corner; it would also provide further visibility into the campus at this point. Further refinement of the existing “quad-rangle” adjacent to the Library and HSSB is recommended. Development in this area should defer to the adjacent residential neighborhood in terms of reduced scale and lower density along with increased landscaping.
7.2.2 BUILDINGS & CLUSTERS

The areas designated for new buildings are located primarily in three clusters: west of the Hospital to Yale (Cluster “A”), northwest corner of the campus near the Tucker-Yale intersection (Cluster “B”), and surrounding the Mental Health Center on the east side of the campus (Cluster “C”). These groups of buildings are intended to provide a mix of clinical, educational and research functions. As noted in the utilities section following, grouping new construction allows for utilities improvements to also be phased incrementally. This approach is both economically and functionally desirable, but may not necessarily coincide with future plans for development.

Cluster “A” runs along Lomas Blvd. west of the Hospital and is the most visible location. This area will include the Women’s and Children’s Pavilion west expansion proposed in the University Hospital Master Plan, an addition to the existing parking garage and new facilities for clinics and research. Of prime importance is the razing and relocation of the chiller plant to accommodate the Hospital expansion. The single story Physics and Astronomy Building, which occupies a prime location along Lomas, also needs to be demolished with its departments relocated to the main campus. In its place, mid-rise, three to four story buildings will provide a more appropriate campus density.

The new Hospital parking garage west of the Hospital was designed to allow for expansion westward. As discussed in the following section on utilities, combining the new chiller plant with the parking garage addition would allow the plant to tie into the existing utility tunnel system.

This cluster could also include a building on the south side of Lomas. Such a building would be a gesture to the proposed bridge building from the Barton Myers Plan, whereby buildings on both sides of Lomas could be designed to create the impression of a gateway to the Main and North campuses.

Cluster “B” occupies a higher elevation and runs along Yale between the wedge entrance north to Tucker Road. Phase II of the Cancer Research Facility is planned to be directly west of the first phase and is also part of this cluster. New clinical and research buildings would be sited to take advantage of easy access and good visibility. Stakeholders expressed the need to provide high profile locations for opportunities to develop facilities for joint-ventures with outside partners in the areas of clinics and research. Clusters “A” and “B” both satisfy this criteria. A parking structure is included to allow higher density development and reduce the area of existing surface parking lots to maximize land use potential.

An office building for the School of Medicine would complete the “quadrangle” started by the Library and HSSB. It is located where the “temporary” metal buildings of SOM #4, 5, & 6 currently sit. The relatively low profile of this proposed office building is in keeping with the intent to maintain a less urban, lower scale, near surrounding residential neighborhoods. Building the third side of the quadrangle will define this area as an outdoor “room”. Additional landscaping and other parklike features will also contribute to softening the edge between campus and neighborhood.

Cluster “C” wraps around the Mental Health Center to the south and east. A less visible location but close to the center of the campus, the clinical and research functions placed here would probably be more directly related to the HSC and the Mental Health Center. The Surge Building and a portion of the MHC would be replaced by new buildings. MHC staff felt that in future inpatient functions would decrease, but outpatient and research needs would increase, so these proposed buildings could respond well to future needs.
VII. Development Plan
UNM owns many of the houses along Vassar Drive adjacent to this area. A new residence for MHC staff has been shown directly across Marble and would reflect the scale of the residences across the street. A parking garage is located east of the Hospital chiller plant.

The proposed Education/Student Union building, on the east side of the plaza, would be on the location of SOM #1, a single story building originally used as a bottling plant. The intensive use this building by students, staff and faculty makes this central location ideal.

In addition to the building clusters identified, a new outpatient surgery building would be located on University Boulevard near the 1209 Clinic. An addition to the Non-Invasive Diagnostic Building to create the Brain Imaging Center, north of the Child’s Psych campus, along with a new building at the Children’s Psychiatric Hospital, are also planned.

Also to be considered are remodels of older buildings that could range from minor upgrades to significant overhauls of mechanical and electrical and architectural finishes. These improvements are discussed in the Facilities Analysis section of this document. By planning for these renovations now and incorporating them into capital budgets, existing buildings can be made viable for modern-day use.

7.2.3 UTILITIES

To implement the Health Sciences Center master plan, it will be necessary to first insure that primary infrastructure is in place. Construction of the necessary utility systems on a building-by-building basis is not practical for two reasons: the impact on building budgets would be prohibitively expensive and the cost to build incrementally would far exceed unit costs if constructed in larger segments. As the master plan is implemented with the addition of new buildings, there will be an expense associated with hookup of utilities that must be budgeted as part of each building project.

To properly address infrastructure needs, a utilities master plan must be designed and implemented ahead of planned expansion of the HSC. Since the master plan has identified three distinct areas or clusters for expansion, it should be possible to install primary improvements by cluster, thus breaking down the overall package of improvements into smaller, more manageable, segments.

There is a chiller plant located at the southwest corner of the University Hospital site and adjacent to Lomas Boulevard that serves the Health Sciences Center. It also provides chilled water to the main campus via a ten inch line beneath Lomas from which it ties into the campus chiller system. This plant is already 30 years old and thus has a limited life span. More importantly though, its location is in conflict with future Hospital expansion as envisioned in the Hospital master plan. Finally, even if it were possible to build around this facility, due to its location close to the street, the plant blocks visibility of the Hospital from its western approach. For these reasons, its removal has been considered a prerequisite to the Hospital’s west expansion. The Hospital expansion could begin as soon as two years from this date; in all likelihood this chiller plant would need to be demolished prior to beginning construction. Another problem involves both chilled and steam condensate lines that terminate at this plant. If the plant is demolished, these existing condensate lines will need to be rerouted to an acceptable location.
The Master Utility Plan, the Barton Myers Plan, and this master plan all recognize the need to build a new chiller plant to serve the north campus, as well as the necessity of expanding the utility tunnel system. The Barton Myers Plan showed the location of the new plant on the east side of University. After further study, this plan suggests that the plant be located in the vicinity of the Hospital west parking structure, or in the alternative, designed to be incorporated into the planned expansion of the structure itself. This location better facilitates connection to existing chilled water lines in a utility tunnel. The only issues associated with this location are control of water vapor emitted from the cooling towers (over-spray onto cars) and aesthetics, since this structure will be along the south side of the planned “wedge” entrance into the HSC campus.

There are PNM overhead service lines and several large aluminum poles located on the north side of Lomas adjacent to the Hospital. For aesthetic reasons, it is important to eliminate this equipment as part of the Hospital expansion. This service terminates a short distance west of the hospital on the North Campus. There is no economic benefit to PNM to either relocate or install these lines underground so in all likelihood, the Hospital will have to reimburse PNM for removal and relocation of this service as part of its planned expansion.

The North Campus power substation is currently at full capacity. This means that a new electric-driven chiller plant or a major building project will require the addition of another transformer to the substation. New buildings constructed in the Health Sciences Center will need to have emergency power generators installed to meet life safety requirements. While the main campus electrical system employs co-generation, it cannot be relied upon for emergency purposes.
8.1 ISSUES
The site master plan for the Health Sciences Center is intended to serve as a framework for future planning and development of the North Campus. It is designed to provide strong direction for new construction and renovation of existing buildings while permitting flexibility to allow modification as needed to meet ongoing needs. The projected time frame of the plan is 20 years, sufficient time for its development goals to be met.

In order for the plan to be implemented, some strategies and priorities need to be established and followed to ensure the future success of the plan.

8.1.1 LAND USE
An obstacle to the Hospital’s planned expansion to the west is the existing chiller plant and Physics and Astronomy building in the same location identified for the addition. The Barton Myers Plan and the Hospital Master Plan support the recommendations that the Physics and Astronomy Departments be relocated to Main Campus and that a new chiller plant be considered for another location. As noted earlier in this document, a new chiller plant would be more efficient, allow new buildings to be supported effectively and provide redundancy for the University’s utility system. Relocating these functions and demolishing the buildings would not only open up the land for Hospital and HSC expansion, but gives much-needed visibility and street presence to the Hospital from Lomas.

Other real estate opportunities include the relocation of services for the Department of Health Clinic and the Office of the Medical Examiner. If the Health Sciences Center can negotiate a property trade for their current sites, these locations would give the HSC virtually complete ownership of North Campus lands from Lomas on the south to Tucker on the north.

8.1.2 BUILDING PRIORITIES
As discussed in the Facilities Inventory & Analysis and HSC Development Programs sections of this plan, the Health Sciences Center needs to almost double its existing building area to meet current space demand and future growth predictions. In addition, many buildings on the HSC campus suffer from long-term deferred maintenance as well as functional obsolescence. There are a number of buildings that haven’t been adequately maintained over the last 20 to 30 years and now require major renovation to bring them up to current standards.

Prioritizing which buildings and remodels occur and in what order requires evaluating a number of factors. Probably the most important is availability of funding. One of the primary sources of monies is through the State of New Mexico. The Health Sciences Center and University Hospital receive funding in different ways. The HSC is under the umbrella of the University of New Mexico and its capital funding requests need to be approved by UNM’s President and the Board of Regents. All of the University’s requests are sent to the New Mexico Commission on Higher Education (CHE) which prioritizes the requests of all the universities in the state and then forwards them to the legislature which in turn approves or rejects them, provides a funding appropriation and forwards them to the Governor for his signature. The Hospital operates as an independent entity and applies to the state directly. If a project is under a certain cost limit, money can be used from the Hospital’s yearly operating budget.
In addition to requests for funding made to the State, HSC leadership is currently exploring the availability of funding from several alternative sources. This money could come through private donations, partnering contracts and research grants.

At the time of this plan, the HSC and Hospital have acquired planning and design funds for three major projects: University Hospital Children’s and Women’s Pavilion, an Education Building, and a Research Building. These buildings are considered essential to the combined missions of the Hospital and HSC and suggest an important “new direction” for the campus, both functionally and aesthetically. University Hospital is also proceeding with a new Outpatient Surgery building to be located on University-owned land on the west side of University Boulevard.

The following table provides information on various proposed building projects and indicates funding source(s), priority, and timeframe.

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*Connects to Central Plant North
APPENDIX - STRATEGIC PLAN SUMMARY
A. APPENDIX - STRATEGIC PLAN SUMMARY

A.1 STRATEGIC PLAN 2001
INSTITUTIONAL ALIGNMENT
The University of New Mexico (UNM) Health Sciences Center (UNM HSC) is engaged in a continuous cycle of strategic and tactical planning. This planning process will enable the institution to develop the agility necessary to face a changing environment and prepare the institution for programmatic and infrastructure development. All UNM HSC planning activities are conducted under the umbrella of the University of New Mexico strategic plan.

The UNM HSC is comprised of four outstanding education/research components (UNM College of Nursing, UNM College of Pharmacy, UNM School of Medicine, UNM HSC Library) and six well-regarded clinical operations (UNM Hospital, UNM Children’s Hospital, UNM Carrie Tingley Hospital, UNM Mental Health Center, UNM Children’s Psychiatric Hospital, and the UNM Cancer Research and Treatment Center). These units operate interdependently to produce the finest services at the only teaching hospital system in New Mexico.

A.2 CORE VALUES
The core values of the UNM Health Sciences Center emphasize a culture of shared expectations regarding integrity, accountability and decisiveness in commitment to excellence; compassion and respect in our interaction with students, patients and colleagues; diversity in people and thinking; effective utilization of our resources; and advancement of our institutional mission while supporting professional and personal growth. These core values are the substance of the UNM Health Sciences Center, enabling the organization to function with the highest standards of professionalism.

A.3 VISION
The UNM Health Sciences Center’s vision is to identify and solve the most important questions of human health in our communities through education, scholarship, and service with commitment to the UNM HSC core values. This vision enables the institution to reach beyond its customary boundaries and into the communities it serves, bringing the science of discovery and healing to all New Mexicans.

A.4 MISSION
The mission of the UNM Health Sciences Center is to provide added value to health care through leadership in providing innovative, collaborative education; advancing the frontiers of science through research critical to the future of health care; delivering health care services that are at the forefront of science; and facilitating partnerships with public and private biomedical and health enterprises. The UNM Health Sciences Center is the only academic health center in New Mexico and the only organization pursuing the complex, four-pronged mission of education, research, health care, and partnership.
A.5 STRATEGIC PROGRAMMATIC GOALS
The institution has developed programmatic goals around clinical care, education, research, and administration. Clinical care programs at the UNM HSC should provide accessible, highest quality, patient-focused, efficient inpatient, ambulatory and community-level health care. Educational programs should provide New Mexicans with innovative educational programs within and across the College of Nursing, College of Pharmacy and School of Medicine. Research programs should advance the foundation of knowledge in pharmacy, nursing and medicine. Administration should provide efficient, leading edge, effective infrastructure, facilities, and management systems to advance and support education, research and clinical care.

A.6 STRATEGIC PROGRAMMATIC THEMES
In support of the programmatic goals, there are four strategic programmatic themes that will guide the institution: areas of emphasis, service delivery, educational innovation, and translational research.

AREAS OF EMPHASIS
The UNM HSC will identify areas of emphasis aimed at meeting our vision to solve problems in human health for New Mexicans. The UNM HSC will use a defined process to align programs, services, policies and systems under a strategic mission center. This will provide a foundation for our mission areas for marketing and communicating to the public and stakeholders about our services, facilitate coordinated delivery and ensure optimal resource allocation. This evolves from the strategic business unit development process for clinical programs and does not specifically indicate a physical center for each area emphasized.

SERVICE DELIVERY
The UNM HSC will create and replicate service delivery models for clinical care, education and scholarship that focus on the best outcomes for users. The UNM HSC will demonstrate leadership in developing and implementing user-focused programs and processes. The underlying foundation will be a collaborative clinical practice model and education of clinicians to operate in this model. This will be accomplished through innovation, by replicating industry best practices and by applying good business and management principles.

EDUCATIONAL INNOVATION
The UNM HSC will provide collaborative, degree-oriented educational opportunities for New Mexicans. The UNM HSC will continually scan the environment to identify industry work force needs that reflect complex health care and emerging sciences and technology to develop educational requirements. The faculty and staff will be recognized as drivers in education in both outreach and electronically transportable programs to ensure the success of our students.

TRANSLATIONAL RESEARCH
The UNM HSC will provide research that emphasizes bench to bedside applications for the health care industry and advance the health of New Mexicans.
A.7 STRATEGIC INFRASTRUCTURE THEMES

There are also seven guiding strategic infrastructure themes: marketing/communication, partnership development, knowledge management, institutional accountability, information systems, staff and faculty development, and building/capital infrastructure.

MARKETING & COMMUNICATION

The UNM HSC will enhance its marketing programs to ensure that all stakeholders recognize and can articulate the value the organization provides to the State of New Mexico. The UNM HSC will have focused public awareness and internal communication programs that create a “sense of place,” support fulfillment of the missions, delivery of programs to the citizens and ensure continued viability of the institution. The UNM HSC will have staff and faculty that can tell the UNM HSC story internally and externally to the public and government entities.

PARTNERSHIP DEVELOPMENT

The UNM HSC will promote partnerships with public and private organizations as a way to extend its value to the State of New Mexico and its citizens. The UNM HSC will leverage its internal strengths by forming strategic and tactical partnerships with other organizations in the Southwest region. This allows the UNM HSC to increase its problem-solving capabilities with the minimum of resource expense to improve outcomes and meet the greater needs of the people it serves.

KNOWLEDGE MANAGEMENT

The UNM HSC will provide library and knowledge-generating resources and services that rival those of nationally recognized peer academic health centers. The UNM HSC will ensure that students, staff, faculty and investigators have access to information and resources that facilitate problem-solving and the management of our missions. Through innovation and technology-driven sources, the library will increase the user time in learning and decrease the time spent in accessing the information. The library will strive to move from traditional to electronic information sources.

INSTITUTIONAL ACCOUNTABILITY

The UNM HSC will continually define and meet or exceed customer and stakeholder expectations and national benchmarks for its service and mission areas. The UNM HSC will embody and demonstrate the principles of quality and performance improvement as an academic health center organization. This means that the UNM HSC will seek out information from patients, students and stakeholders to define pertinent indicators in each mission area, and monitor and report on system performance. These actions will demonstrate when the UNM HSC is making a difference in the health of New Mexicans.

INFORMATION SYSTEMS

The UNM HSC will support its missions by employing information/telecommunications technologies that are cost-effective, leading-edge, integrated, and universally accessible. The UNM HSC will strive to possess and use appropriate technology and information management systems that are within the leading edge of introduction to the industry. This will allow the UNM HSC to learn through application in other organizations and apply the most advantageous purchasing leverage for new technology. This goal reflects continued investment in technology and information systems to allow us to improve our decision-making and speed in delivering service to users, both internal and external.
STAFF & FACULTY DEVELOPMENT
The UNM HSC will strive to create an environment of professional growth where all staff, faculty, clinicians and investigators are successful and accountable to improved outcomes for UNM HSC patients, students and partners. The UNM HSC will establish systems to provide training, tools, resources and opportunities to assist all UNM HSC staff and faculty in providing the best outcomes to the people they serve, the programs they implement, the students they educate or the research they conduct. This means that the UNM HSC will establish and communicate expectations, ensure there are feedback mechanisms from faculty and staff and that processes are in place to support them.

BUILDING & CAPITAL INFRASTRUCTURE
The UNM HSC will provide building and capital equipment infrastructure that will facilitate accomplishment of our missions. The UNM HSC will strive to maintain buildings that are functional and aesthetic to the people who visit, study and work at the UNM HSC. The buildings should not be constraining to the UNM HSC missions, establishing a campus that is flexible, future-oriented and strives to raise the human spirit.

A.8 CONCLUSION
This strategic planning framework will serve as the template for all academic and clinical components of the UNM HSC as the organizations become aligned through the development of individual tactical plans. The UNM Health Sciences Center is committed to engaging in continuous strategic and tactical planning to ensure that the education, research and health care needs of the state are being met.