Program Plan

Cancer Center Linear Accelerator

University of Colorado at Denver and Health Sciences Center
Fitzsimons Campus

November 3, 2006
I. Preface and Summary

The Cancer Center Linear Accelerator project involves the construction of a vault to house a linear accelerator operated by the University of Colorado Hospital (UCH) and owned by the Veterans Administration Medical Center. The vault is to be constructed at the UCH Anschutz Cancer Pavilion (ACP) located on the Fitzsimons campus. The linear accelerator will be relocated from the University of Colorado Hospital at 9th Avenue or be replaced with a new linear accelerator. The University of Colorado is a part owner of the ACP facility, which causes the University of Colorado to file a program plan for this project even though the program is operated by UCH and not by the University of Colorado. The installation of the linear accelerator requires the 1st floor construction of a 1,600 gross square foot (gsf) vault adjacent to the north side of the ACP to house the linear accelerator. Other needed support facilities are already in existence in the ACP. The installation of this proposed linear accelerator will allow the University of Colorado Hospital to continue to increase its volume of radiation treatment cases in its Department of Radiation Oncology as the hospital completes its transition from the 9th Avenue campus to the Fitzsimons campus. Total cost of the project is $1,843,143. All costs will be borne by the University of Colorado Hospital subsequent to the transfer from the University of Colorado Cancer Center of $1,500,000 that was donated and earmarked for the expansion of the ACP.

A Capital Proposal for a Treatment Vault Addition to the Anschutz Cancer Pavilion was submitted to and approved by the University of Colorado Hospital Authority Board of Directors and Finance Committee in August 2006.
The University of Colorado Hospital (UCH) operates a Radiation Oncology Program through its Department of Radiation Oncology. Currently, they operate one linear accelerator and one simulator for the treatment of patients at the University of Colorado Hospital facility at the 9th Avenue campus and three linear accelerators and two simulators at the Fitzsimons campus. Linear accelerators deliver a high energy beam of radiation to the site of a tumor, and simulators are used to help position the radiation beams appropriately. After the completion of the hospital transition to the Fitzsimons campus, all patients will be treated at the Anschutz Cancer Pavilion at Fitzsimons.

In the mid 1990’s, UCH determined that it needed to expand its cancer programs, and its radiation therapy program within its cancer program, to meet growing needs of the cancer patients it serves. UCH planned with the then University of Colorado Health Sciences Center (UCHSC) to collaborate on the construction of a cancer pavilion at the 9th Avenue campus. Subsequently, the planned closure of the U.S. Army Garrison at Fitzsimons created an opportunity for UCH and UCHSC to plan for larger replacement facilities on a new campus. A previously submitted program plan for a cancer pavilion was revised in September 1997. The revised program plan called for the development of a cancer center at the Fitzsimons campus to be known as the Anschutz Cancer Pavilion. The funding for the project consisted of $18,125,000 in funds from the University of Colorado Hospital Authority and $10,600,000 in state appropriated funds for UCHSC clinical programs relative to the construction of a cancer center. The University of Colorado and the University of Colorado Hospital Authority constructed the 108,575 gsf facility with a resulting undivided ownership interest in the facility that is proportionate to each party’s capital investment. Thus, the University of Colorado owns a substantial portion of the ACP. The University of Colorado leases its undivided interest in the facility to the Hospital Authority for a 50 year term which is renewable for an additional 50 years. In lieu of rental payments, UCH is responsible for operating and maintenance obligations of the ACP.

UCH’s cancer programs have experienced substantial growth since the construction of the ACP. In addition to continued growth projections for existing programs, further growth is anticipated from the following:

- The reestablishment of the Bone Marrow Transplant program at UCH. The FY 2007 patient volume is estimated to be 24 patients. The majority of these patients receive radiation therapy as part of standard pre-transplant protocols.

- The relocation of The Children’s Hospital (TCH) to Fitzsimons. UCH currently treats only a portion of these patients with the remainder being referred to another facility. In the future, all TCH pediatric patients requiring radiation therapy will be referred to UCH. Included in these pediatric patients are pediatric bone
marrow transplant cases whose radiation treatment time is estimated at three times longer than adult patients.

When UCH completes its transition from the 9th Avenue campus to Fitzsimons and ceases to operate the linear accelerator currently at 9th Avenue, it is necessary for an additional linear accelerator to operate at the Fitzsimons campus.

There are no programmatic alternatives to relocating the linear accelerator to Fitzsimons. If the linear accelerator currently at 9th Avenue were not relocated to Fitzsimons or a new linear accelerator installed at Fitzsimons, then UCH would not be able to continue increasing its radiation treatment volume. Implications of not relocating the unit would include delays in patient care, reduction of treatment capacity, and potential loss of revenue.

III. Facility Needs

The delivery of radiation treatment with a linear accelerator requires a vault to be constructed to house the linear accelerator. Other facility needs include other support space for simulators, staff, examination rooms, treatment planning, reception, and other ambulatory care support functions.

While the ACP does not have an extra vault in which to house an additional linear accelerator, it does have external expansion space on the site to expand to the north side of the ACP adjacent to the other linear accelerators. Support space within the ACP is sufficiently sized to accommodate additional support needs of additional patients receiving radiation therapy. Utilities in the facility are also sufficiently sized to accommodate the relocated linear accelerator or a new linear accelerator.

The one basic piece of equipment that is needed is a linear accelerator.

No land acquisition is necessary as the land that the ACP occupies is owned by the University of Colorado and leased to UCH.

IV. Project Description

The Cancer Center Linear Accelerator project consists of constructing a 1,600 gsf vault as a first floor addition to the north side of the UCH Anschutz Cancer Pavilion and relocating the existing linear accelerator from the UCH facility at 9th Avenue or replacing it with a new piece of equipment in the proposed new vault. This is a UCH project and
the only reason the University of Colorado is involved in writing this brief program plan is because it is a part owner of the facility to which the vault is being added.

The Appendix contains a Fitzsimons site plan that indicates the proposed addition and the adjacent ACP. The Appendix also contains a portion of the architectural plan for the vault addition.

**Project Size:**
1,600 gsf new vault space at the ACP

**Project Cost and Financing:**

<table>
<thead>
<tr>
<th>Cost</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Cost and Contingency</td>
<td>$1,777,143</td>
</tr>
<tr>
<td>Information Systems</td>
<td>16,000</td>
</tr>
<tr>
<td>Medical Equipment</td>
<td>50,000</td>
</tr>
<tr>
<td>Total Capital Cost</td>
<td>$1,843,143</td>
</tr>
</tbody>
</table>

Source of Funds

<table>
<thead>
<tr>
<th>Source of Funds</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer Center Donation</td>
<td>$1,500,000</td>
</tr>
<tr>
<td>Remaining AOP Construction Funds</td>
<td>343,142</td>
</tr>
<tr>
<td>Total Funding Sources</td>
<td>$1,843,143</td>
</tr>
</tbody>
</table>

The $50,000 medical equipment item is the base frame required to support a linear accelerator in the proposed new location. The existing frame at the 9th Avenue installation cannot be relocated from the old concrete slab.

The UCDHSC Cancer Center Director has received a $1.5 million donation earmarked for the expansion of the ACP and has approved the hospital’s use of these funds towards this project. An additional $343,143 has been requested from UCH funds remaining from the construction of the UCH AOP 7th floor.

This is an SB 202 Project.

Operating expenses are the responsibility of UCH.

**Project Schedule:**

- UCH Board and Finance Committee: August 2006
- UCDHSC Board of Regents Study Session: November 2006
- UCDHSC Board of Regents Board Meeting: December 2006
- CCHE Approval: January 2007
- CDC & JBC Approvals: February/March 2007
- Spending Authority: March 2007
V. Relation to Master Plan/Other Projects

The Master Plan for the future of the University of Colorado Health Sciences Center and
the University of Colorado Hospital was developed during an 18-month period in 1997
and 1998. The vision within the plan was developed by a campus-wide planning
committee and was designed to accommodate future generations of patients, students,
and faculty.

The 1998 Master Plan references the relocation of clinical programs from 9th Avenue to
the Fitzsimons campus. The section on Clinical Care outlines objectives including
encompassing a full range of primary, secondary, tertiary, and quarternary care services.
A specific subsection describes the vision for an ambulatory care center for advanced
medicine. The Anschutz Center for Advanced Medicine and the adjacent and connected
Anschutz Cancer Pavilion grew out of this Master Plan concept.

Also, the addition of the treatment vault supports the UCH strategic plans by providing:

- Ability to offer high level customer service by timely treating patients.
- Provision of safe and high quality care by providing adequate treatment capacity
  and staffing.
- Maintenance or increase of the UCH Department of Radiation Oncology’s
  positive operating margin.

VI. Facility Alternatives

Other than reducing capacity by not providing a facility for the linear accelerator, the
facility possibilities on the Fitzsimons campus could include leasing space from
UCDHC in Building 500 or constructing new space elsewhere on the campus. Both
possibilities would cause major patient transport, throughput, and proximity challenges.
Further, locating the linear accelerator anywhere else on the Fitzsimons campus would
require the development and operation of substantial additional duplicative support
facilities now available in the ACP.
Appendices

Site Plan

Cancer Center Proposed Vault Location

University of Colorado Hospital
at the Fitzsimons Campus
UCDHSC Research Facilities Shown to the North
Building Plan Sketches

Proposed Vault Addition to Rear (North) of Cancer Center

Cancer Center 1st Floor Showing Functional Program Zones

CANCER CENTER - First Floor

- UROLOGIC ONCOLOGY
- RADIATION ONCOLOGY
- Linear Accelerator (LIN ACC)
- High-Density Radiation Unit (HDRU)
- Simulators
- Planning, Exam Rooms, Offices, Changing Rooms
- MECHANICAL & SUPPORT
Third Party Review Letter

(insert letter)