



MODERNIZATION PROJECT

RONALD READ PAVILION

Submitted by Brattleboro Memorial Hospital

September 5, 2017

Project Origin

- **2009 Master Plan approved by Board of Directors identified following components:**
 - Emergency Department
 - Surgical Services
 - Medical Offices
 - Cardiopulmonary Rehabilitation Department
 - Boiler Room Upgrade

- **Accomplished to date:**
 - Completed major expansion of the Emergency Department and front lobby (2014)
 - Addressed HVAC issues in Lab and Emergency Department (Lab 2011 / ED 2014)
 - Installed fixed MRI (2012)
 - Built new data center and centralize IS support services (2011)
 - Constructed conference center (2011)



Project Origin

In 2014 Board engaged Lavallee Brensinger Architects and HP Cummings to “refresh” Master Plan and assess/refine current needs. Based on internal planning with hospital staff and physicians the major project design elements were identified:

- Replace existing ORs with facilities that meet or exceed all current standards-space, airflow, humidity and infection control
- Improve patient flow in all perioperative/surgical service areas
- Upgrade Central Sterile Processing
- Modernize and consolidate dispersed medical office space
- Address space constraints of Cardiac Rehabilitation Department
- Replace aged boilers

Project cost estimates approved by BOD and authorization to apply for Certificate of Need (CON) with State of VT in December 2016



Scope of Project

4 story building containing following areas:

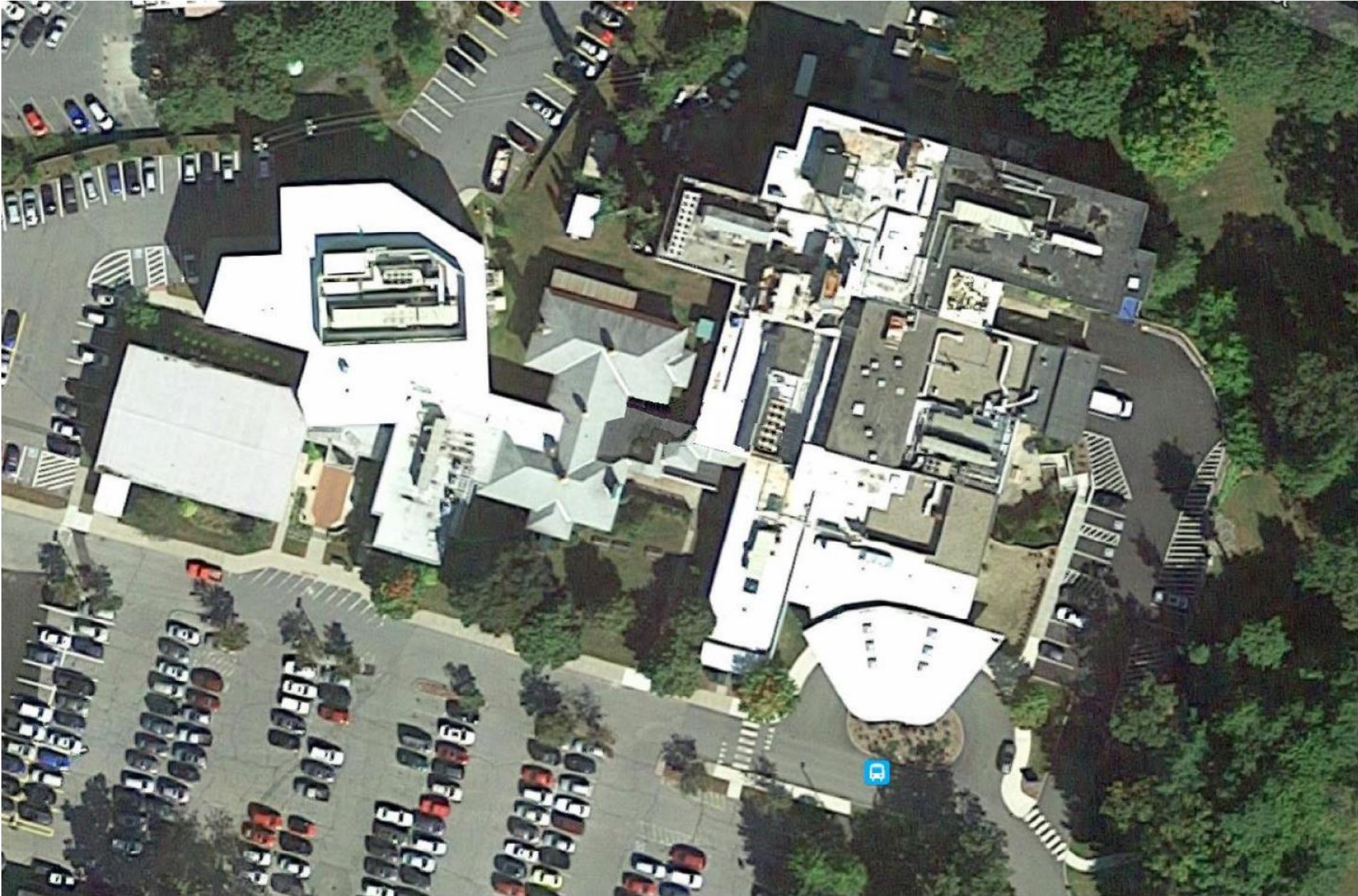
- Surgical Services
 - Replace existing operating rooms
 - Upgrade Central Sterile Processing
 - Relocate GI/Minor Procedure
 - Relocate Post Anesthesia Care Unit
 - Expand storage
- Medical Offices
- Cardiopulmonary Rehabilitation

Boiler Room

- Replace boilers with dual fuel units







An aerial photograph of a large hospital campus. The image shows several interconnected buildings with white and grey roofs, surrounded by parking lots filled with cars and green trees. A prominent orange callout box is overlaid on the image, pointing to a specific building. The text inside the box reads "RONALD READ PAVILION".

**RONALD
READ
PAVILION**



Surgical Services – Operating Rooms

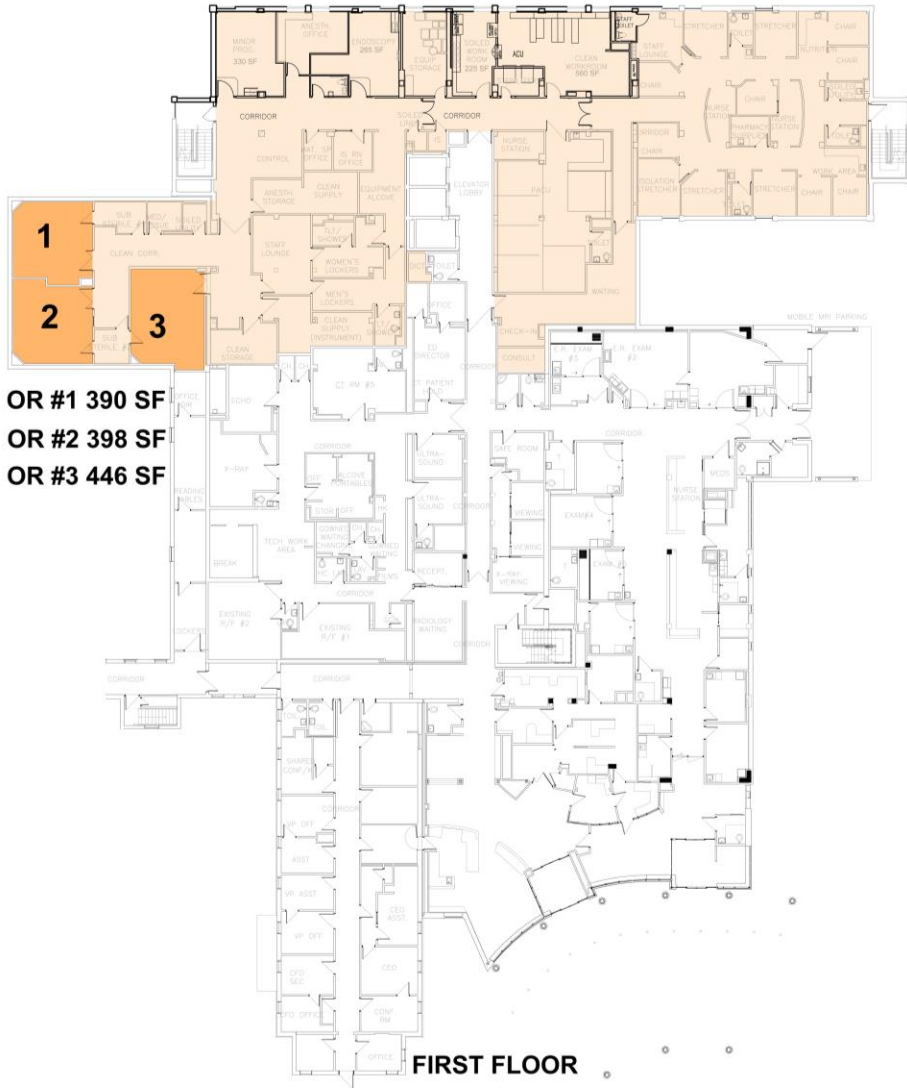
Current challenges:

- Building structure constructed in 1950
- Undersized and does not meet FGI requirements – 446 SF, 390 SF, 398 SF
- Located directly above boiler plant – causes temperatures to fluctuate, vibrations
- Inefficient patient flow
- Insufficient and fragmented storage

Proposed: Replace existing 3 operating rooms in new building

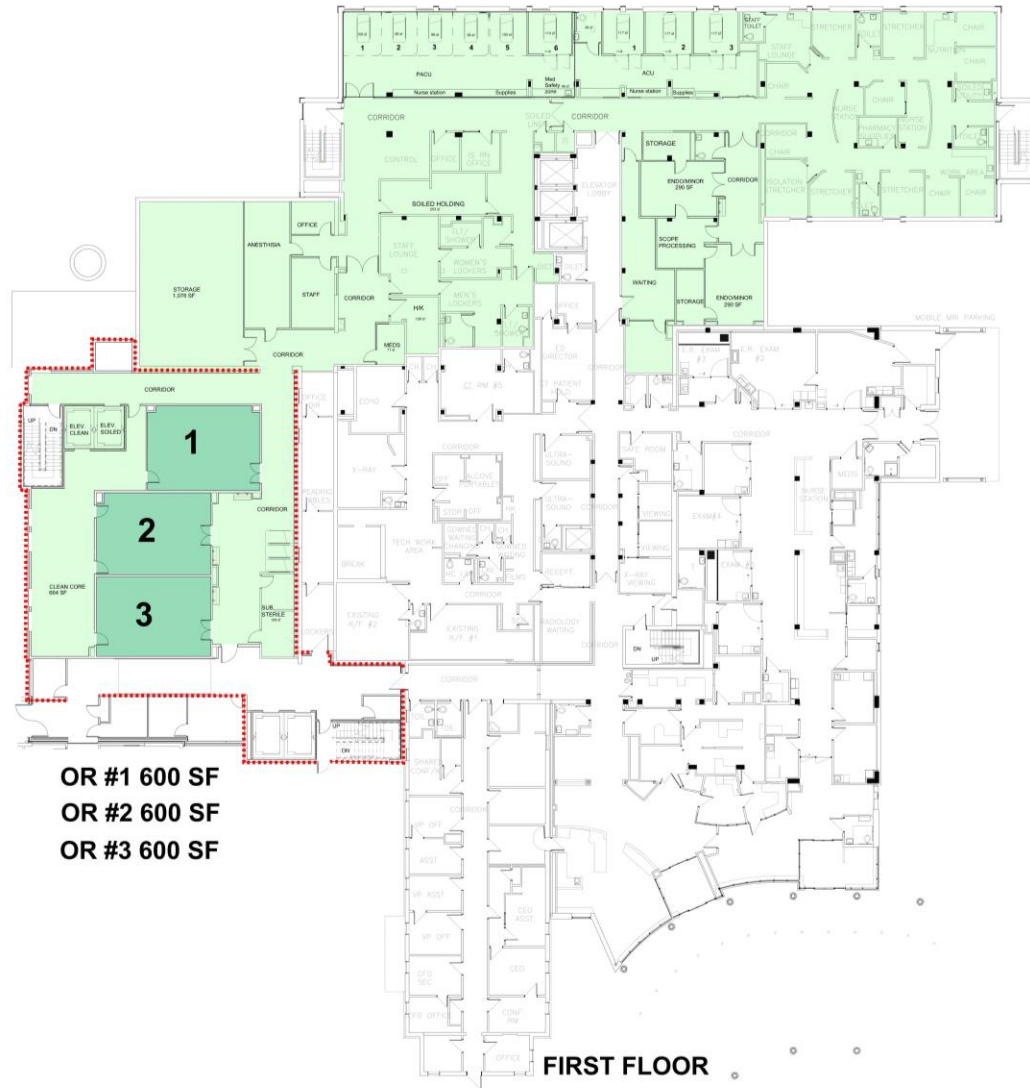
- Provide more efficient patient flow
- Meet 2014 FGI requirements of 600 SF operating rooms for flexibility
- Retain and recruit qualified surgeons
- Location allows existing ORs to be used during construction
- Improved and controlled temperature and humidity





OR #1 390 SF
 OR #2 398 SF
 OR #3 446 SF

FIRST FLOOR
 EXISTING OPERATING ROOMS



OR #1 600 SF
 OR #2 600 SF
 OR #3 600 SF

FIRST FLOOR
 PROPOSED OPERATING ROOMS



Surgical Services – Post Anesthesia Care Unit (PACU) and Ambulatory Care Unit (ACU)

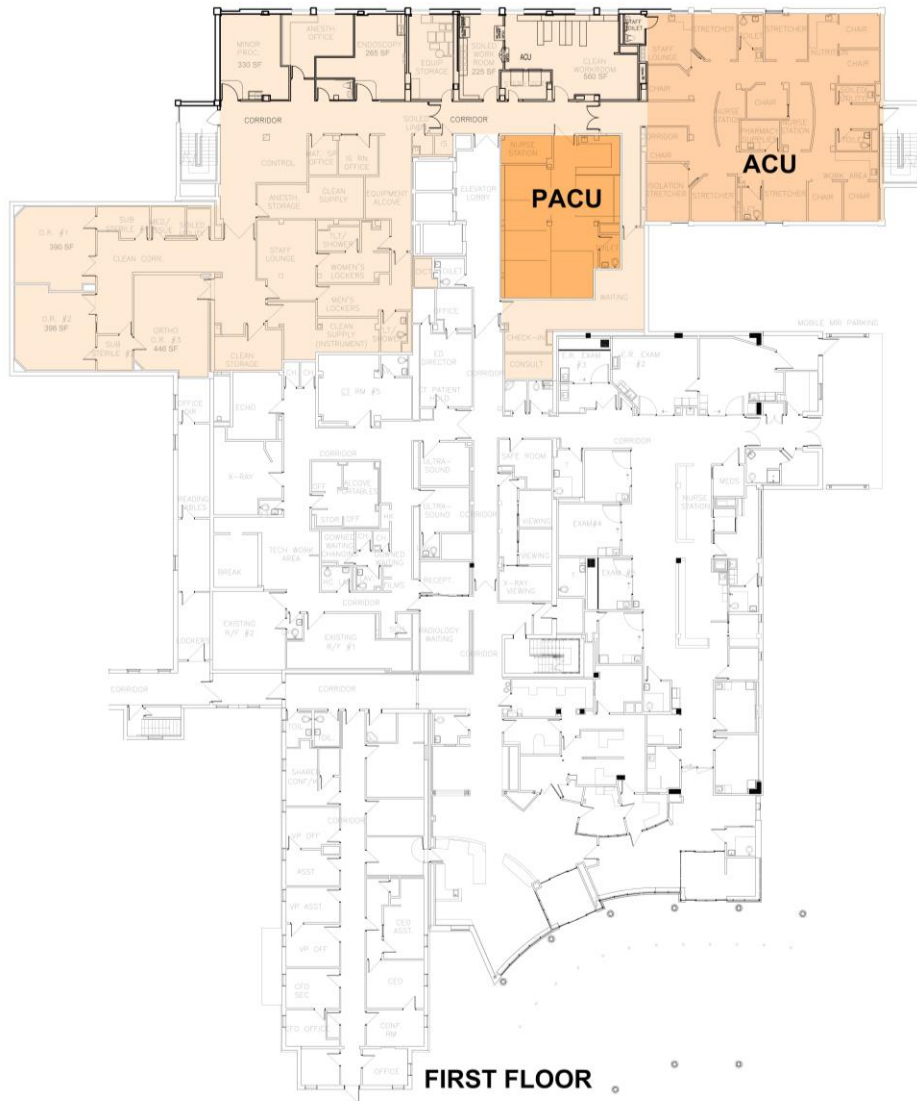
Current challenges:

- Inefficient location – not near current ORs
- Longer travel distances from ORs to PACU
- Currently two separate, non-adjacent areas

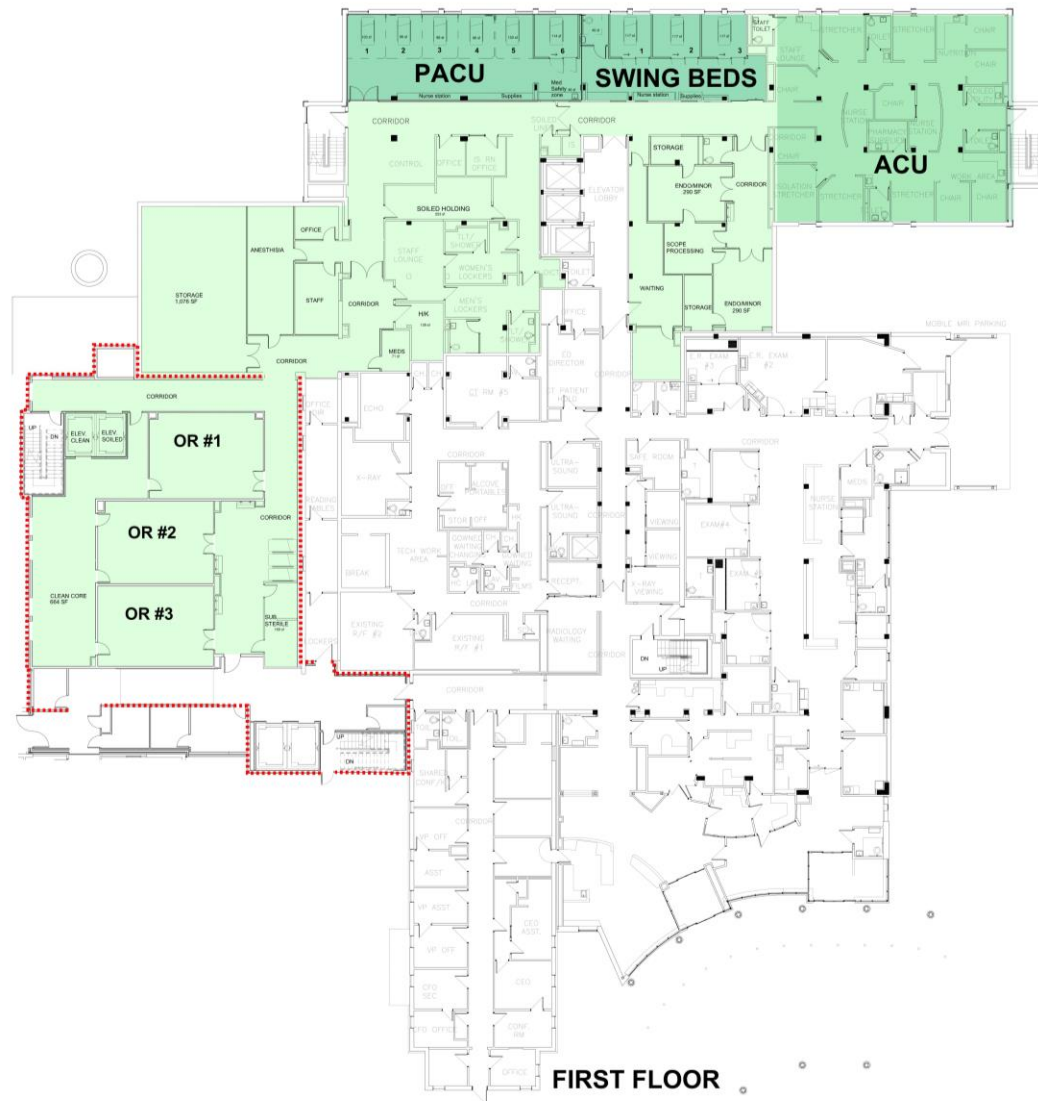
Proposed: Combine units in renovated space and add 3 swing beds

- More flexibility with co-located beds for pre and post op demands
- Renovated space more proximate to new ORs
- Greater RN staff flexibility between PACU and ACU
- Windows with natural light assist with recovery process





EXISTING PACU



PROPOSED PACU / ACU BEDS



Surgical Services – Gastrointestinal (GI) and Minor Procedures

Current challenges:

- Current location of GI Procedure room makes it difficult to move patients on stretchers
- Patients going in for minor procedures must travel further into the perioperative areas where more critical patients are located

Proposed: Relocate in renovated space

- More proximate to Ambulatory Care Unit (ACU)
- Larger endoscopy and minor procedure rooms – each 290 SF
- Improve work flow and patient flow efficiencies
- Separate access improves patient experience
- Scope processing in area
- Increased flexibility



Surgical Services – Storage

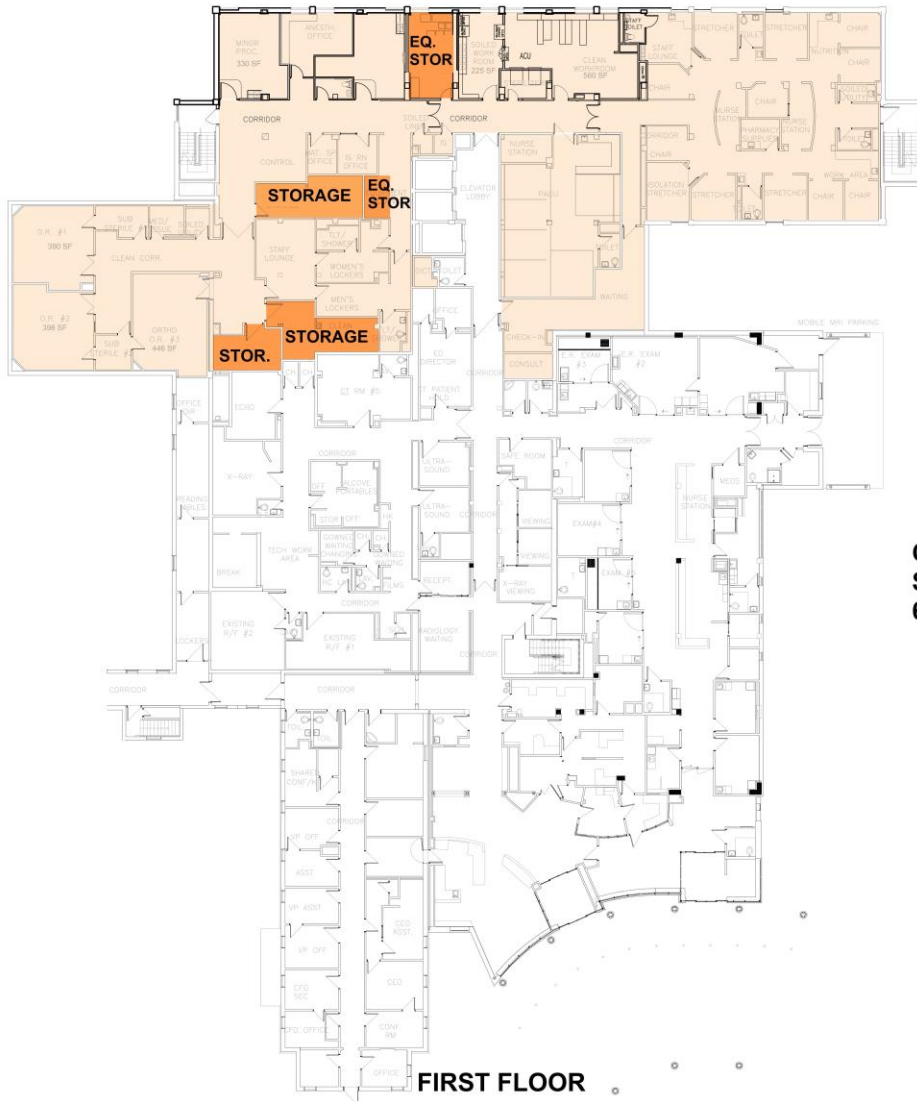
Current challenges:

- Current storage is fragmented in multiple locations not proximate to ORs
- Storage locations require excessive staff travel to retrieve additional equipment and supplies
- Supplies are more difficult to manage with multiple small locations
- No stretcher storage

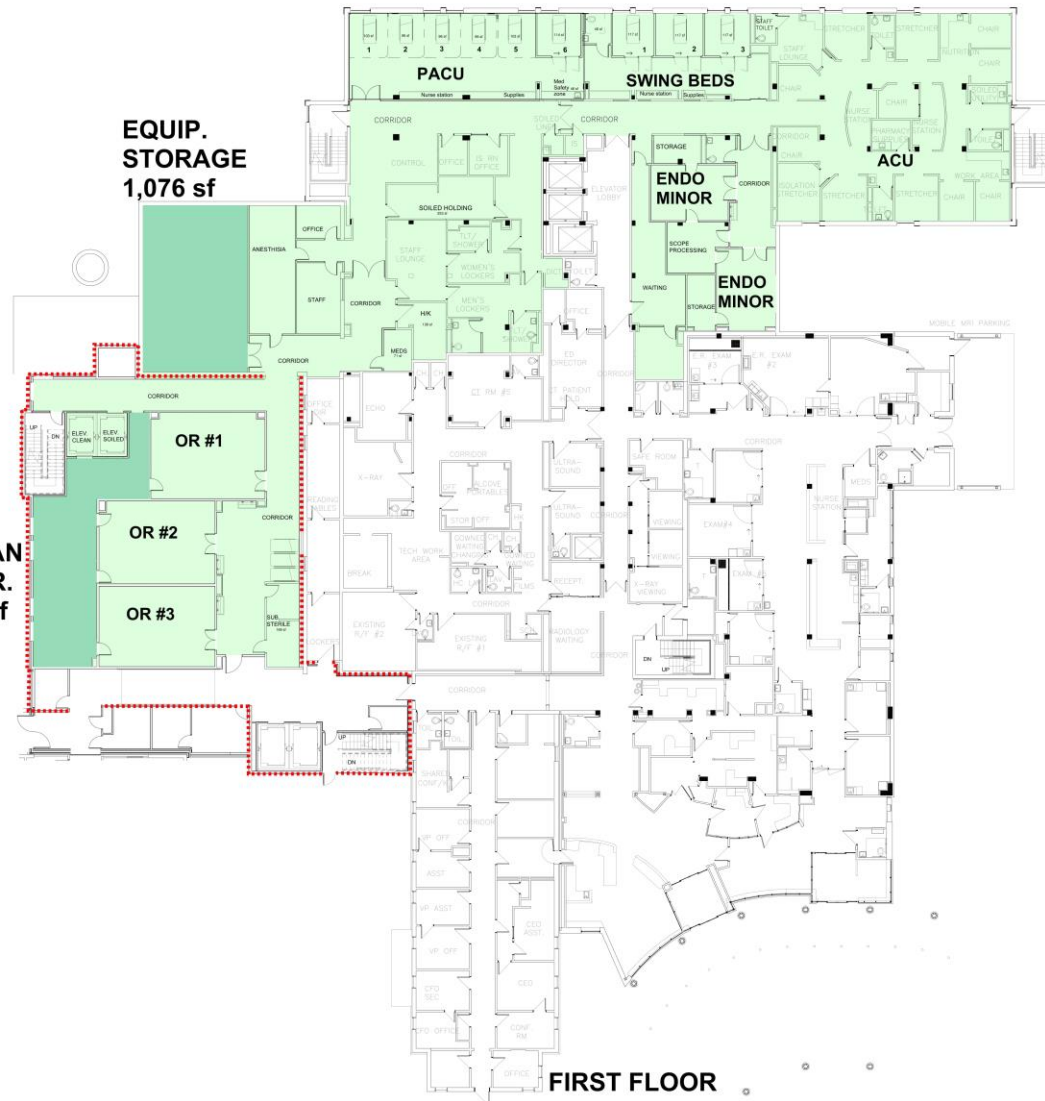
Proposed: Add needed storage in both renovated space and new building

- One large central storage can be used more efficiently
- Shorter travel distances as space is connected to all three ORs
- Central storage served by dedicated elevators going to and from Central Sterile eliminates the need for dirty/clean instruments to travel in same hallways as patients





EXISTING STORAGE



PROPOSED STORAGE



Surgical Services - Central Sterile Processing

Current challenges:

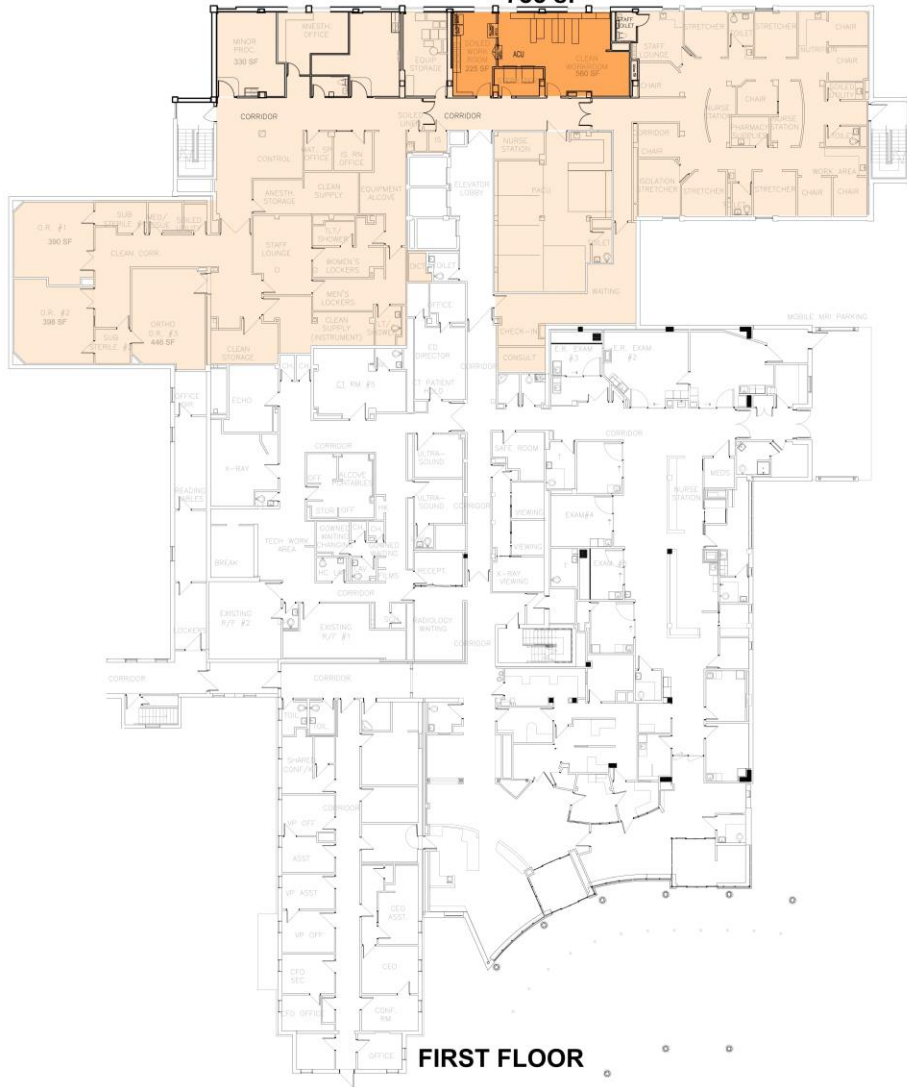
- Undersized – 785 SF
- Location requires movement of clean and dirty instruments through hallways used by patients
- Sterilizers are more than 40 years old

Proposed: Relocate to ground floor of new building

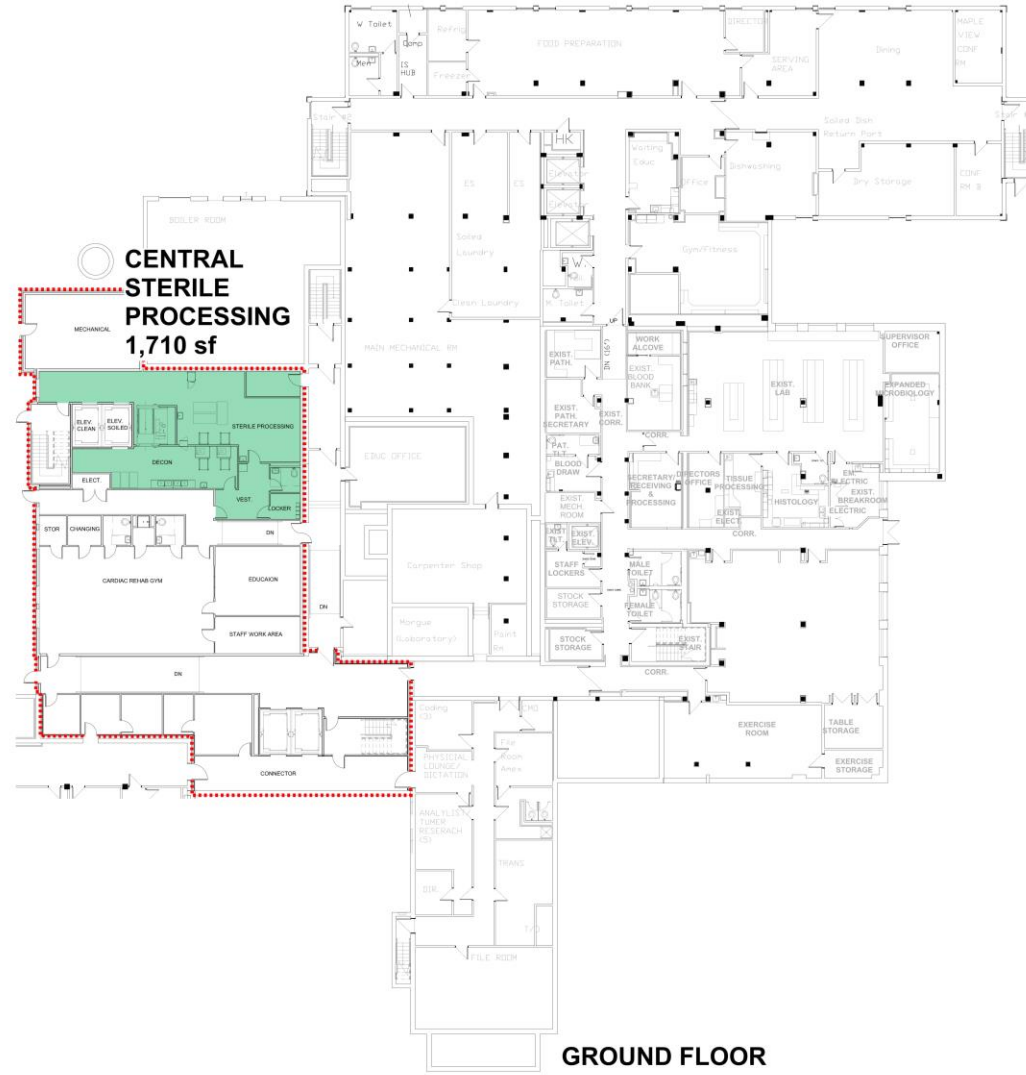
- Larger space directly below ORs – 1,710 SF
- Efficient dirty-to-clean flow of equipment
- Dedicated clean and dirty elevators for direct vertical transport to and from ORs
- Provide more appropriate drying and processing space
- Install state of the art sterilization equipment



CENTRAL STERILE PROCESSING
785 sf



EXISTING CENTRAL STERILE PROCESSING



PROPOSED CENTRAL STERILE PROCESSING



Cardiopulmonary Rehabilitation Department

Current challenges:

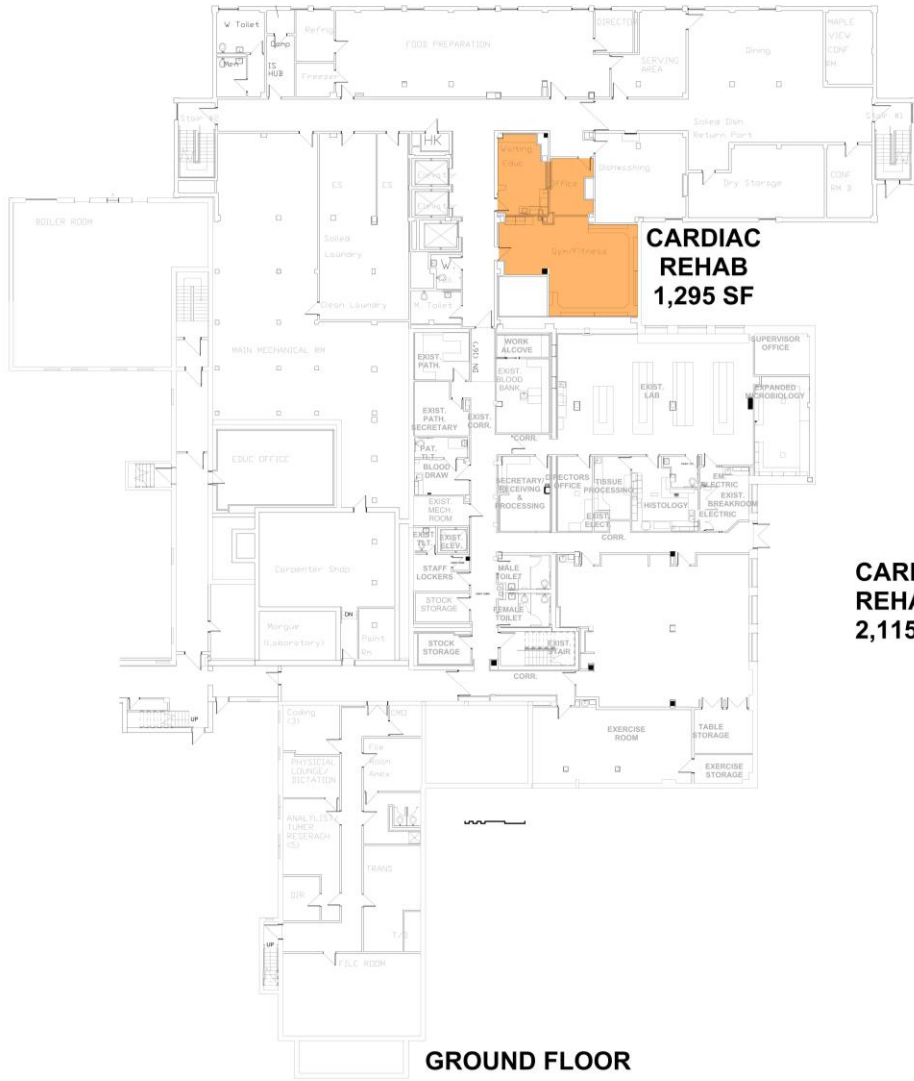
- Undersized - lack of space creates difficulty for staff and patients to maneuver equipment
- Non-compliant with safety standards regarding spacing between exercise equipment
- Location not easily accessible for patients
- No space for changing rooms and limited waiting area
- Wait list due to limited space and equipment

Proposed: Relocate to ground floor of new building

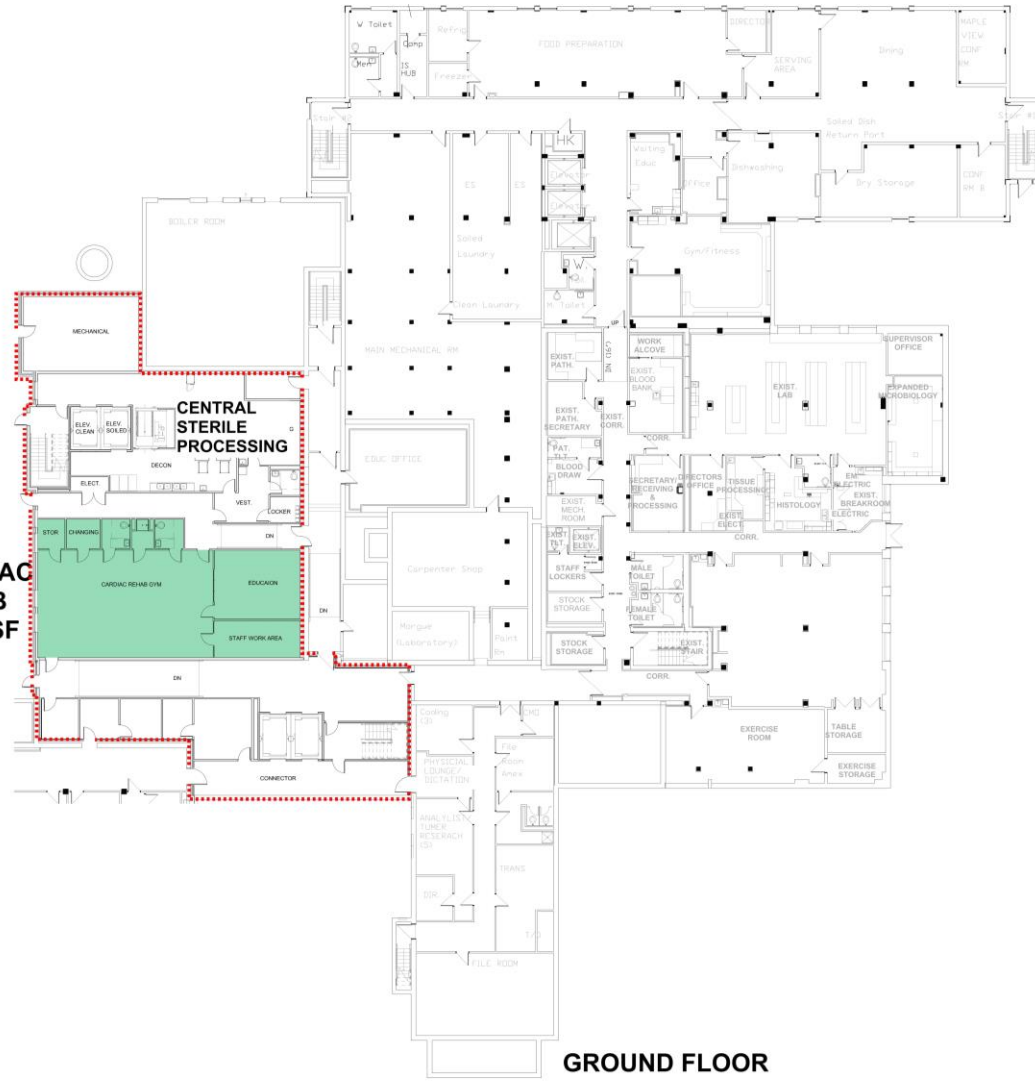
- Larger, more efficient space
- Windows provide better patient experience
- New space to comply with modern safety standards
- More accessible space to encourage maintenance patients to continue exercise
- Separate changing area for patient privacy
- Allows for proper storage space







EXISTING CARDIOPULMONARY REHABILITATION



PROPOSED CARDIOPULMONARY REHABILITATION



Primary Care & Surgical Offices

Current challenges:

- Practices scattered in former residential homes
- No opportunity for expansion due to residential neighborhood setting
- Undersized and not designed for flow of busy medical practice
- Multiple small sites limits staff efficiency
- Negative impact on recruitment and retention

Proposed: Relocate to second and third floors of new building

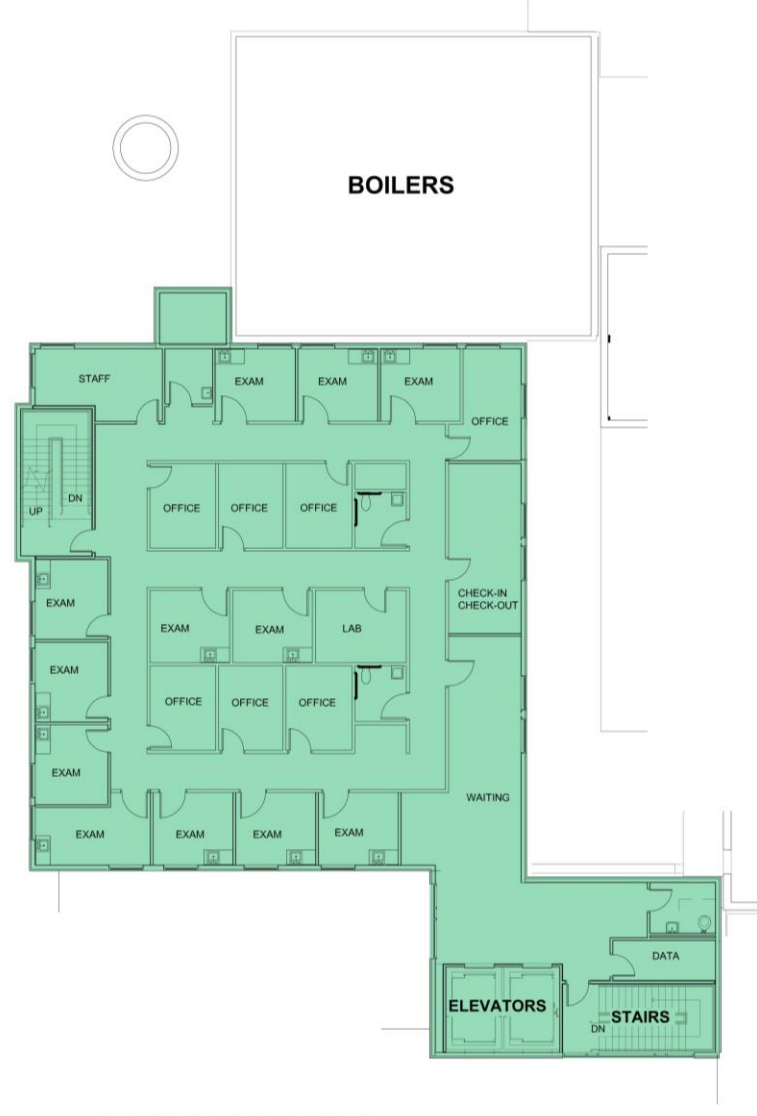
- Consolidate primary care practices into a modern and efficient space
- Improve staff efficiency and flexibility – common waiting room and shared check-in/check-out
- Improved handicap accessibility
- Greatly enhance recruitment and retention efforts for primary care clinicians
- Relocate and combine surgical practices – urology & general surgery







**SECOND FLOOR
SURGICAL OFFICES**



**THIRD FLOOR
PRIMARY CARE OFFICES**



Ronald Read Pavilion



Boiler Room

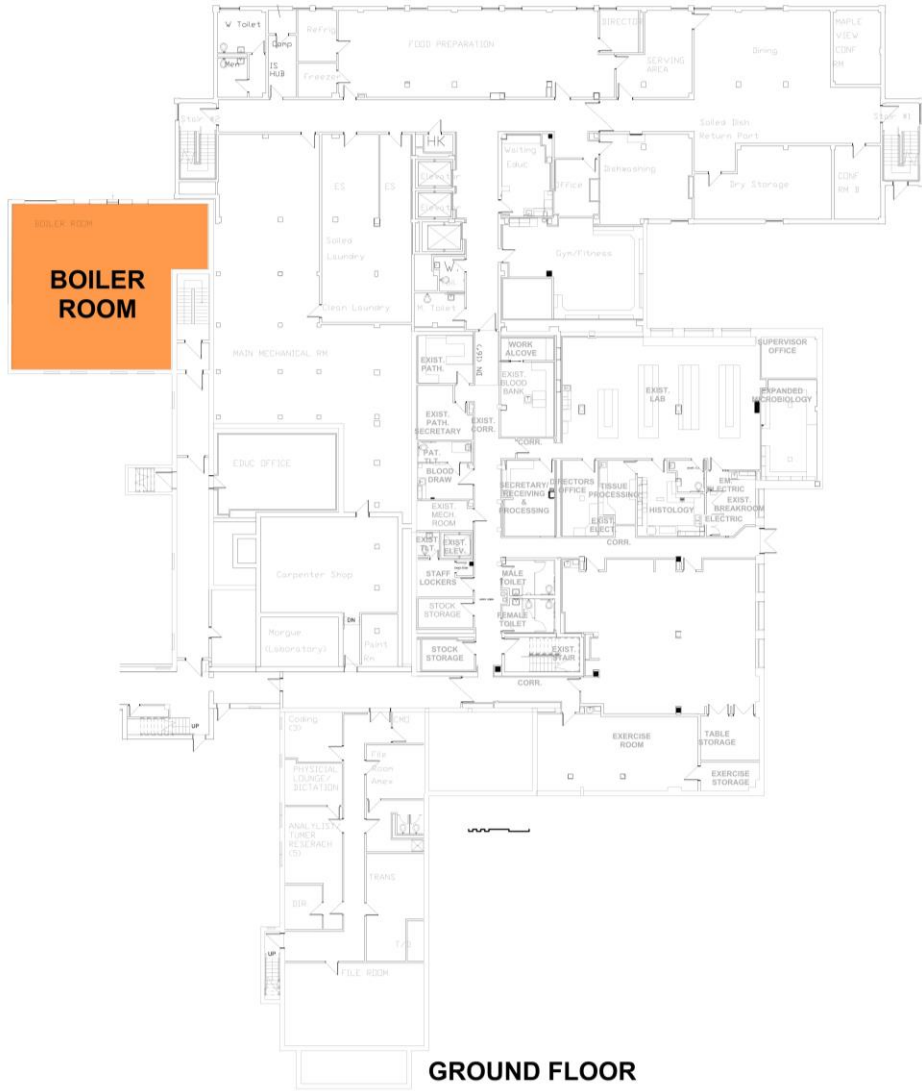
Current challenges:

- Two of three boilers purchased new and installed in 1979
- Third boiler purchased used (built in 1976) and installed in 1996
- Functioning beyond expected life of 25 years per American Society of Heating Refrigeration & Air Conditioning Engineers (ASHRAE)
- Currently burning #4 oil, most expensive and negative environmental impact
- No capacity to accommodate proposed project

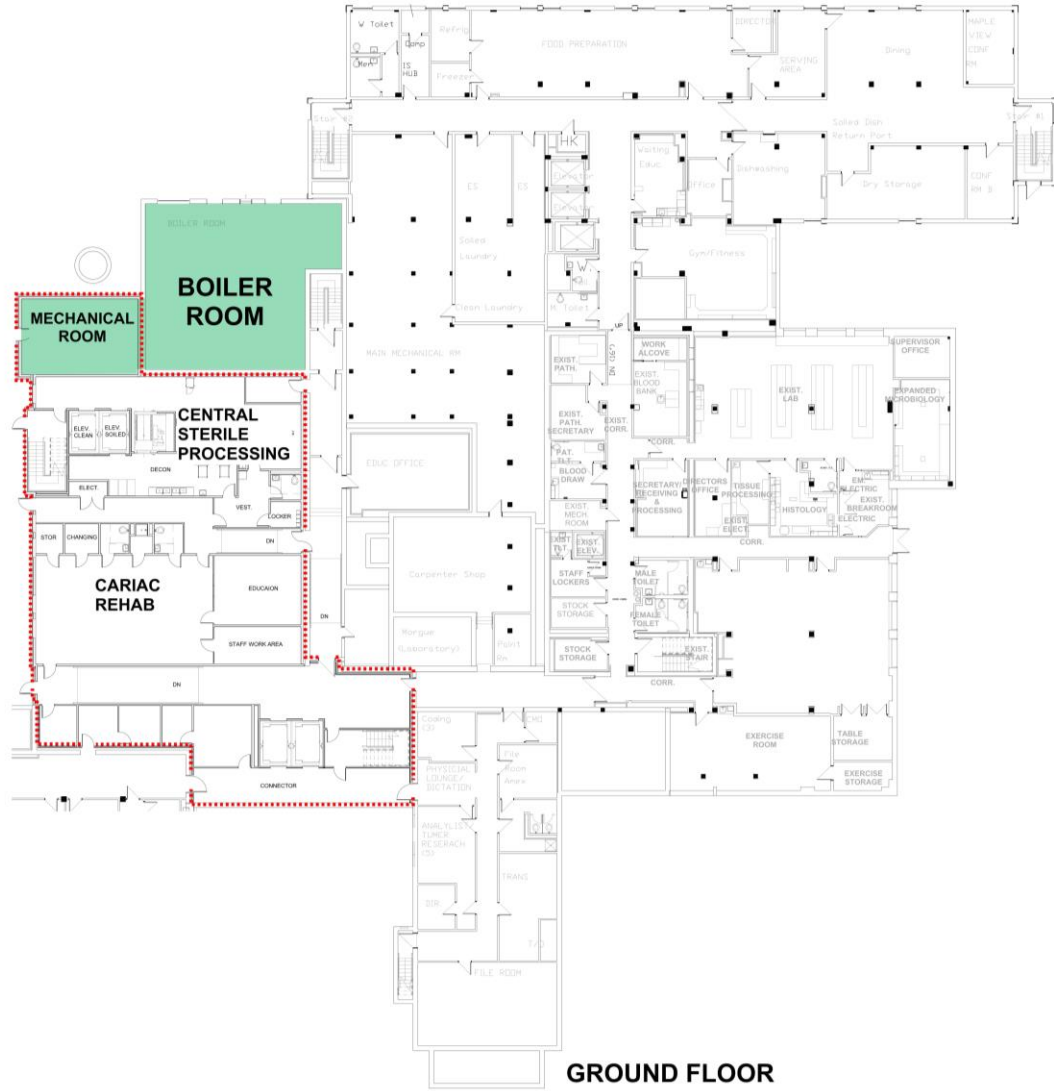
Proposed: Replace with two larger, more efficient dual-fuel boilers (to accommodate natural gas if and when available)

- Engaged LN Consulting to evaluate boiler needs and engineers' recommendations
 - **Concluded #2 oil as most cost effective and least disruptive for neighbors**
- Capacity to heat and cool entire hospital – Main Building, Richards Building, and Ronald Read Pavilion
- No relocation required





EXISTING BOILERS



PROPOSED NEW BOILERS



Alternatives Researched

- Compressed campus requires vertical expansion
- Current buildings have structural limitations for vertical expansions and building code restrictions
- Other options do not allow for close proximity to existing surgical area
- New location of Ronald Read Pavilion has limited impact on existing services
- Spent 7-8 years in project analysis and planning
- Consulted with various organizations:
 - Regarding Surgical Services: Surgical Management Improvement Group
 - Regarding Boiler Room: LN Consulting, Vermont Dept. of Public Safety, Renewable Energy VT, Windham Regional Commission, Windham Wood Heat Initiative, NG Advantage
- Optimized proposal to best address neighbor concerns



Project Budget

Construction Costs	
New construction	\$12,044,188
Renovation	\$1,905,688
Site work	\$572,522
Fixed Equipment	\$506,165
Design/Bidding Contingency	\$2,250,974
Construction Contingency	\$1,524,855
Construction Manager fee	\$461,269
Total Construction Costs	\$17,740,836
Related Project Costs	
Major movable equipment	\$1,705,130
Architectural/Engineering fees	\$2,160,394
Administrative expenses and permits	\$703,096
Debt financing expenses	\$383,333
Total Related Project Costs	\$4,951,953
TOTAL PROJECT COSTS	\$22,692,789



Source of Funds

Financing Instrument	Bond
a. Interest rate	2.5%
b. Loan period	Dec 2017 to Dec 2042
c. Amount financed	\$10,000,000
Equity Contribution	\$12,692,789
TOTAL REQUIRED FUNDS	\$22,692,789

- Potential financing alternatives – New Market Tax Credits or Tax Exempt Bonds
- Equity Contribution is composed of a \$6.1 million bequest from the Estate of Ronald Read and other existing cash reserves



Project Meets All CON Criteria Required Under 18 V.S.A. § 9437

CON Criterion #1 – Project is consistent with HRAP standards and IHI Triple Aims:

- Triple Aims – Patient experience improved, infection control enhanced and primary care access provided
- 1.7 – Modernizing facilities to current standards consistent with evidence based practice
- 1.9 – Designed to meet code, enhance staff work flow, patient experience and instrument processing; boiler choice and design based on most cost-effective and energy conservative option
- 1.10 – Efficiency Vermont engaged; will meet Vermont Commercial Energy Codebook



Project Meets All CON Criteria Required Under 18 V.S.A. § 9437

CON Criterion #1:

- 1.11 – New construction to address larger space needs of operating rooms – no other option viable
- 1.12 – Design consistent with FGI requirements
- 2.1 – Consolidating primary care office space will enhance retention and recruitment of providers and improve office efficiency
- 3.4 – Boiler Project included in FY 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018 budget reviews
Modernization Project included in FY 2013, 2014, 2015, 2016, 2017, 2018 budget reviews



Project Meets All CON Criteria Required Under 18 V.S.A. § 9437

Meets CON Criterion #2, 18 V.S.A. § 9437

- Cost is reasonable: BMH has resources to sustain financial burden
- Public benefit outweighs small impact on cost of medical care
- Alternatives to proposed new construction, renovation and boiler choice have been thoroughly explored – no less expensive option is available or feasible



Project Meets all CON Criteria Required under 18 V.S.A. § 9437)

- **Criterion #3** – All project elements needed to maintain appropriate and critical services and to meet modern standards; project will address multiple existing concerns
- **Criterion #4** – Project as proposed will enhance BMH’s ability to provide high quality of services and will provide greater access to primary care and cardiopulmonary rehabilitation
- **Criterion #5** – Project will not have undue adverse impact on BMH, rather will improve services
- **Criterion #6** – Project will serve public good by providing operating rooms and surgical suite area meeting current standards, replacing aging boilers, enhancing access to primary care and cardiopulmonary rehabilitation
- **Criterion #7** – Transportation services are not impacted

