For internal staff use

MARYLAND HEALTH CARE COMMISSION

_____
MATTER/DOCKET NO.

_____
DATE DOCKETED

HOSPITAL
APPLICATION FOR CERTIFICATE OF NEED

PART I - PROJECT IDENTIFICATION AND GENERAL INFORMATION

1. FACILITY

Name of Facility: **Johns Hopkins Bayview Medical Center**

Address:

4940 Eastern Avenue	Baltimore	21224	Baltimore City
Street	City	Zip	County

Name of Owner (if differs from applicant):
The Johns Hopkins Health System Corporation

2. OWNER

Name of owner: **The Johns Hopkins Health System Corporation**

3. APPLICANT. ***If the application has co-applicants, provide the detail regarding each co-applicant in sections 3, 4, and 5 as an attachment.***

Legal Name of Project Applicant
Johns Hopkins Bayview Medical Center, Inc.

Address:
Above

Street	City	Zip	State	County

Telephone: **410-550-0123**

Name of Owner/Chief Executive: **Richard G. Bennett, MD, President**

4. NAME OF LICENSEE OR PROPOSED LICENSEE, if different from applicant:
N/A

5. LEGAL STRUCTURE OF APPLICANT (and LICENSEE, if different from applicant).

Check ☑ or fill in applicable information below and attach an organizational chart showing the owners of applicant (and licensee, if different).

A.	Governmental	☐	
B.	Corporation		
	(1) Non-profit	☒	
	(2) For-profit	☐	
	(3) Close	☐	State & date of incorporation
C.	Partnership		
	General	☐	
	Limited	☐	
	Limited liability partnership	☐	
	Limited liability limited partnership	☐	
	Other (Specify):		
D.	Limited Liability Company	☐	
E.	Other (Specify):		
	To be formed:	☐	
	Existing:	☒	

6. PERSON(S) TO WHOM QUESTIONS REGARDING THIS APPLICATION SHOULD BE DIRECTED

A. Lead or primary contact:

Name and Title: **Anne Langley, Sr. Director, Health Planning & Community Engagement**
Mailing Address:

3910 Keswick Road, Suite N-2200	**Baltimore**	**21211**	**MD**
Street	City	Zip	State

Telephone: **443-997-0727**
E-mail Address (required): **alangle2@jhmi.edu**
Fax: **443-614-9709**

B. Additional or alternate contact:

Name and Title: **Spencer Wildonger, Director of Health Planning**
Mailing Address:

3910 Keswick Road, Suite N-2200	**Baltimore**	**21211**	**MD**
Street	City	Zip	State

Telephone: **443-997-0742**
E-mail Address (required): **swildon1@jhmi.edu**
Fax: **443-997-0731**

7. TYPE OF PROJECT

The following list includes all project categories that require a CON under Maryland law. Please mark all that apply.

If approved, this CON would result in:

(1)	A new health care facility built, developed, or established	☐
(2)	An existing health care facility moved to another site	☐
(3)	A change in the bed capacity of a health care facility	☐
(4)	A change in the type or scope of any health care service offered by a health care facility	☐
(5)	A health care facility making a capital expenditure that exceeds the current threshold for capital expenditures found at: http://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_con/documents/con_capital_threshold_20140301.pdf	☒

8. PROJECT DESCRIPTION

A. Executive Summary of the Project: The purpose of this BRIEF executive summary is to convey to the reader a holistic understanding of the proposed project: what it is; why you need/want to do it; and what it will cost. A one-page response will suffice. Please include:

(1) Brief description of the project – what the applicant proposes to do;
(2) Rationale for the project – the need and/or business case for the proposed project;
(3) Cost – the total cost of implementing the proposed project; and
(4) Master Facility Plans – how the proposed project fits in long term plans.

B. Comprehensive Project Description: The description must include details, as applicable, regarding:

(1) Construction, renovation, and demolition plans;
(2) Changes in square footage of departments and units;
(3) Physical plant or location changes;
(4) Changes to affected services following completion of the project; and
(5) If the project is a multi-phase project, describe the work that will be done in each phase. If the phases will be constructed under more than one construction contract, describe the phases and work that will be done under each contract.

Applicant Response:

PROJECT SUMMARY

Johns Hopkins Bayview Medical Center ("JHBMC"), a member of the Johns Hopkins Health System, is a non-profit hospital located in Baltimore City. JHBMC seeks Certificate of Need ("CON") approval for the capital expenditures associated with a campus redevelopment project that includes construction of a New Inpatient Building ("NIB") and renovation of two existing buildings on its campus. Estimated total capital costs associated with the project are $468,852,000.

The project has two main goals for the JHBMC Campus. The first is to maximally transition to all private patient rooms. The second is to modernize and upgrade JHBMC's outdated facilities.

Achieving these objectives is essential to the long-term viability of JHBMC. The project will allow JHBMC to address quality, safety, and service standards, right-size patient rooms, units, and operating rooms, upgrade existing infrastructure, and enhance infection control. Not proceeding with this project will put key services in jeopardy in the short term, and it will threaten JHBMC's ability to maintain its central role as an academic medical center, pursuing excellence and innovation in health care delivery, education, and discovery.

JOHNS HOPKINS BAYVIEW MEDICAL CENTER

INTRODUCTION:

JHBMC is one of the oldest continuously operating health care institutions in the United States, dating back to 1773. From its inception as an almshouse, it evolved as an asylum and, eventually, a municipal hospital. In 1984, the city of Baltimore transferred ownership of the Baltimore City Hospitals to The Johns Hopkins Hospital ("JHH") and The Johns Hopkins University ("JHU"). Since 1986, JHBMC has been a Maryland not-for-profit and wholly-owned subsidiary of the Johns Hopkins Health System. Located on a 130-acre campus, JHBMC is one of Maryland's most comprehensive acute care hospitals, offering medical, surgical, psychiatric, pediatric, obstetric, and neonatal intensive care, rehabilitation and substance use disorder services, trauma services, and operating the state's only adult burn center and a nationally renowned geriatrics program.

JHBMC is an academic medical center with a mission grounded in medical education, clinical care and research. Together with The Johns Hopkins Hospital, JHBMC is part of the Johns Hopkins Medicine Academic Division. Nearly all JHBMC physicians are full-time faculty of the Johns Hopkins University School of Medicine ("JHUSOM") and contribute to teaching and research. JHBMC and JHH have a shared vision for serving the Baltimore community and achieving the tripartite mission, which means they work collaboratively to develop and execute a coordinated strategy that is optimal for both campuses in the pursuit of excellence and innovation in health care delivery, education, and discovery. This allows JHH and JHBMC to actively synchronize which academic programs and services to make accessible at both campus, which programs and services to consolidate to a single campus, and which to transition to community-based organizations.

The Johns Hopkins Medicine Academic Division promotes collaborative planning to improve the health of the residents living in the surrounding areas. Efforts focus on developing programs and community partnerships that augment available resources, address social determinants of health, improve health literacy, and increase access to necessary health care services. Through ongoing assessment of community needs and implementation of strategies to address the diversity of the population, JHBMC is an indispensable resource for residents of southeast Baltimore City and southeast Baltimore County, including the growing local Latino population.

JHBMC currently has 342 licensed acute care beds, including a 20-bed adult burn and wound service. The Johns Hopkins Burn Center is the only state-designated burn center in Maryland and is a key component of the state's renowned trauma system. Additionally, there are 12 licensed comprehensive inpatient rehabilitation beds and 76 licensed chronic beds at JHBMC. The hospital features a modern cancer care facility[1] specializing in thoracic oncology. The adult burn center and thoracic oncology program are two examples of a JHM specialty service located uniquely at JHBMC. Finally, the hospital opened a contemporary combined adult/pediatric emergency facility in 2015;[2]

1 CON 11-24-2322, approved February 16, 2012.
2 CON 11-24-2321, approved February 16, 2012.

and there are two large medical office facilities housing multiple outpatient clinics on campus.

As the former municipal hospital for Baltimore City, JHBMC continues to lag behind other hospitals in the region in providing modern, state-of-the-art facilities and accommodations for its inpatients, as well as for the faculty and staff who care for them. This limits JHBMC's ability to meet the needs and expectations of its patient population; a population that stretches far beyond Baltimore City and Baltimore County and includes the counties of Carroll, Howard, Anne Arundel, Harford, and Cecil. Additionally, this disparity limits the ability of the Johns Hopkins Academic Division to optimize JHBMC for specialty services. A high degree of clinical integration has been achieved across the Academic Division, particularly in neurosurgery, multiple surgical divisions, multiple medical divisions, emergency medicine, pathology, radiology, anesthesiology, rehabilitation medicine, obstetrics, and psychiatry. This project, bringing the facilities and accommodations at JHBMC up to the standard of care in the region, is crucial to the continued clinical integration efforts of the Johns Hopkins Medicine Academic Division.

In this project's absence, JHBMC's campus infrastructure and facilities will no longer allow it to offer the broad range of clinical services it does today. Aging facilities will require costly, time-consuming, inefficient, and operationally disruptive renovations in the form of wasteful, short-term fixes. An inability to offer private patient rooms will inevitably continue to result in declining patient satisfaction scores, a heightened risk of infection, and the constriction of JHBMC's patient catchment area. A shrinking patient population would ultimately jeopardize JHBMC's academic mission by limiting the specialized services it would be able to offer, and reducing its appeal as a unique and nationally recognized clinical training site.

Safe, high quality care for intensive and acute care patients, the focal point of this project, would be put increasingly at risk. The campus's structural limitations will begin to present insurmountable quality of care concerns. The Obstetrics Unit, the NICU, and the Burn Center are the services most immediately at risk if this project does not proceed. Ultimately, fewer and fewer specialty services and academic activities would be likely to be offered on the JHBMC campus. Those most likely to bear the brunt of such sweeping changes would be the southeast Baltimore City and Baltimore County residents who benefit the most from JHBMC's continued pursuit of clinical excellence and discovery.

EDUCATION AND RESEARCH

JHBMC has a long tradition as a training site, and it is now an essential part of the training and research environment of the JHUSOM. Nearly all of the physicians at Johns Hopkins Bayview are full-time faculty at the JHUSOM.

The JHUSOM, currently celebrating its 125th anniversary, has medical and graduate programs ranked among the top in the country. Currently, JHUSOM medical students receive nearly 30 percent of their training on the JHBMC campus. Residents and fellows based at The Johns Hopkins Hospital ("JHH") spend a significant amount of time

on the JHBMC campus as part of their training. Additionally, there are several residency programs that are based at JHMBC, including one of the nation's premier training programs in primary care internal medicine. Established in 1979 as one of the first primary care training programs in the nation, Johns Hopkins Bayview's primary care internal medicine residency track has a rich history of training leaders in general internal medicine. On any given day, about 200 residents and fellows are providing care for JHBMC patients.

There are 300 JHUSOM faculty based on the campus with approximately $100 million of annual research support, placing JHBMC in the top 30 to 40 academic medical centers in the country for research funding. The campus also is distinctive in that it is the home of the intramural research programs of the National Institute on Aging and the National Institute on Drug Abuse, with approximately $200 million of annual funding, affording many opportunities for research collaboration.

OPPORTUNITIES FOR CONSOLIDATION OF SERVICES

JHBMC's academic model not only allows it to integrate clinical services within the Johns Hopkins Medicine Academic Division, it also allows for the opportunity, where appropriate, to consolidate services. Today, numerous clinical programs and services within the Johns Hopkins Medicine Academic Division have been consolidated to the JHBMC campus, including:

- Thoracic Oncology Program of the Sidney Kimmel Comprehensive Cancer Center at JHBMC
- Sleep Disorders Center
- Center for Bariatric Surgery
- Adult Burn Unit
- Hip and Knee Replacement Center

Such coordination and consolidation efforts help ensure efficient use of resources and ultimately reduce health care costs. However, to maintain these programs at JHBMC, and perhaps consider the campus as a viable option for future program development or consolidation efforts, its facilities must be at least adequate to meet current community, safety and quality requirements.

JOHNS HOPKINS BURN CENTER

The Johns Hopkins Burn Center (Burn Center) is a prime example of JHBMC's academic mission in action. The Johns Hopkins Burn Center, Maryland's only regional burn center, now formally exists at two locations: an adult burn unit at Johns Hopkins Bayview Medical Center, and a pediatric burn unit at the Johns Hopkins Children's Center, which is a preeminent 205 bed children's hospital within The Johns Hopkins Hospital. Unified within the Johns Hopkins Medicine Academic Division, while spanning two campuses, the Burn Center provides a comprehensive, nationally-recognized program of care for patients with burn injuries.

The Burn Center (formerly known as the Baltimore Regional Burn Center) was established in 1968 through support from the Kiwanis Club of East Baltimore at Baltimore City Hospitals, to provide care to injured firefighters and other burn victims. Since that time, it has evolved and transformed with the Johns Hopkins Bayview campus, and in 1994, the Burn Center moved from a 1937 building to a new patient tower. Since its founding more than 45 years ago, the Burn Center has treated thousands of patients from across the State of Maryland, helping them not only survive significant burn injuries, but thrive.

Dr. Julie Caffrey, interim director of the Burn Center, works closely with a multidisciplinary team to help patients lead full and productive lives after a burn injury. Because of the complexity of burn care, the Burn Center uses a multidisciplinary team approach. Large burns can affect the physiology of all major organs, leading to shock, kidney failure, sepsis and lung damage. The team of highly specialized providers includes experts in plastic and reconstructive surgery, trauma, critical care, infectious disease, nursing, physical and occupational therapy, respiratory therapy, psychology, nutrition, social work and case management. Some burns take weeks or even months to heal, and—unlike other ICUs at the hospital—the burn unit cares for patients from the time they are admitted until they go home.

The Burn Center also treats patient with major wounds and life-threatening skin loss. These may include large pressure sores, wounds following necrotizing soft tissue infections, and exfoliative skin disorders.

Approximately 90 percent of Burn Center patients from the last five years have been from Maryland, among whom are our State and local first responders who suffer severe burns in the line of duty. The Center maintains its own emergency service and directly accepts burn patients who arrive by ambulance or Medevac, or who are transferred from community hospitals with all types and in all stages of burn injury.

While the Burn Center is recognized as one of the top burn centers in the country, the physical facility is not ideal. Care for burn patients has become more complex and requires not only an expert staff, but also facilities that support the delivery of state-of-the-art care for burn patients through recovery. The current infrastructure of the Burn Center is approaching 30 years old. Private patient rooms and other requirements are needed to adequately address the added infection control, patient safety, pain management, healing, and rehabilitation that are associated with severe burns.

Please see Exhibit 2 for a copy of a letter from Paul B. Rothman, M.D. (Frances Watt Baker, M.D., and Lenox D. Baker Jr., M.D., Dean of the Medical Faculty; Vice President For Medicine of The Johns Hopkins University; and CEO of Johns Hopkins Medicine) and Ronald R. Peterson (President of the Johns Hopkins Health System and Executive Vice President of Johns Hopkins Medicine) to The Honorable Larry Hogan, Governor of Maryland, concerning state fund capital support for the Johns Hopkins Burn Center portion of the NIB project.

JHBMC COMMUNITY PROGRAMS:

JHBMC has an extensive array of programs and initiatives designed to meet the needs of community residents and address acute and chronic health conditions in the population. The intention of these programs is to improve the health of the community through programming and partnerships that augment resources, address social determinants, improve health literacy, and increase access to needed health care and other services. Many of these programs are unique in Maryland, and some are unique in the country. An overview of some of the key programs is included below. A more comprehensive and detailed inventory of JHBMC's Community Health Improvement Efforts is provided at Exhibit 3.

JHBMC has a long history of providing access to care for underserved populations. The Community Care-A-Van, the Self-Pay Prenatal Program, and The Access Partnership are three programs offered at JHBMC to ensure that uninsured and underinsured residents with demonstrated financial need have access to needed care. The Care-A-Van is a free mobile medical unit serving uninsured families, mostly Latina immigrants. The Self-Pay Prenatal Program (SPRNAT) provides free access to routine obstetric and prenatal services for pregnant women living in the area near the hospital (in nine zip codes). The Access Partnership provides access to outpatient specialty care to patients living in ten zip codes (plus three additional for SPRNAT patients). These programs are in addition to Financial Assistance policy—they provide navigation and support to ensure patients can access care effectively.

Behavioral health services are in high demand across the state, and particularly in demand in the challenged communities near the hospital. JHBMC's Community Psychiatry Program is a critical resource. JHBMC has a long history of offering unique services and engaging in cutting-edge research in substance use disorders. The Chemical Dependency Unit (CDU) is an inpatient unit that offers short-term care for patients in crisis and receives referrals of patients from across the state. The Center for Addiction in Pregnancy (CAP) is unique and also receives referrals from across the state. CAP offers an innovative approach specifically to address the complex needs of pregnant women who suffer from addiction, as well as the needs of and their children. CAP is an outpatient program with an available overnight housing unit for patients requiring a recovery-oriented domicile. These are just a few of the behavioral health programs offered on the JHBMC campus.

JHBMC serves a large, growing Latina population that has settled in southeast Baltimore City. "Centro SOL", or the Center for Salud/Health and Opportunity for Latinos, was started at JHBMC several years ago. Led by two physicians with expertise in culturally sensitive care and the complex needs of underserved and immigrant communities, Centro SOL serves as an umbrella for the many programs targeting the needs of this community. They include programs to increase health literacy, education and patient engagement; mental health programs; outreach (regular outreach through radio and local Latino newspapers); a Latino Patient and Family Advisory Council; and a research consultation service.

The Healthy Community Partnership provides a continuum of community-based care. Significant community involvement has informed the design of the programs. Leaders from the community, including local faith-based congregations in southeast Baltimore, have formed a partnership with Johns Hopkins Medicine leaders based on the principles of dialogue, mutual education and respect, and incorporating the core values of diversity, inclusion, leadership and integrity. Through these programs, culturally sensitive information about chronic diseases is delivered by faculty, physicians, professional staff, house officers, and respected community leaders; health screenings are offered in familiar, easy-to-access venues and at convenient times; and guidance on navigating the complex, confusing landscape of medical services is provided.
The JHBMC campus has specialized in the care of older adults for many decades. The Division of Geriatric Medicine and Gerontology at The Johns Hopkins University School of Medicine began in 1963 with the development of the Division of Chronic and Community Medicine at what was then the Baltimore City Hospitals. This specialization continues today, not only with an extensive catalogue of advanced clinical, research, and training programs, but also through community programs that address the specific needs of the elderly. There is an array of programs to support patients and family members impacted by Alzheimer's disease and other forms of dementia. ElderPlus at JHBMC is a Program of All-Inclusive Care for the Elderly ("PACE"). This program provides comprehensive medical and social services to certain frail, community-dwelling elderly individuals, most of whom are dually eligible for Medicare and Medicaid benefits. The Meals on Wheels initiative and Called to Care are two other examples of programs designed to meet the needs of older patients.

JHBMC is proud of its strong relationships with a widely diverse range of community programs, organizations, and individual members. These relationships and partnerships have led to the development of programs that meet real community needs effectively and with compassion. Some of these programs are innovative, and are sought from outside the community. Many of them are outside the usual scope of hospital care, but we develop and sustain them because they are needed and they positively impact the health of our patients and our neighbors. This approach, and the values and commitment it represents, will continue at JHBMC as we develop and activate this project and bring our facilities up to a level to match the quality of our programs and our care.

PRIMARY GOALS & PROJECT OBJECTIVES

For over a decade, the senior leadership of JHBMC and the Johns Hopkins Health System have engaged in extensive studies to determine the best use of the JHBMC campus over the next several decades. As a result of this work, JHBMC seeks to accomplish two Primary Goals:

1. Maximally Transition JHBMC to All Private Patient Rooms
2. Modernize and Upgrade Outdated Facilities and Facilities at End of Useful Life

In order to accomplish these Primary Goals, JHBMC defined six Project Objectives. These objectives were used as criteria to guide the development of the ideal solution to the unique challenges JHBMC faces and are as follows:

1.) Maximize Number of Private Patient Rooms in Medical/Surgical Units
2.) Maximize Inpatient Activity in Modernized Space
3.) Maximize Number of Critical Care Patients in Modernized Space
4.) Right-Size Inpatient Units to Accommodate Current Operational Models
5.) Maximize Opportunities for Improved Operational Efficiency and Patient Experience
6.) Optimize Materials Flow and Distribution

PRIVATE ROOMS

One of JHBMC's primary goals for its campus is to transition JHBMC to all private patient rooms. As the MHCC has noted in two recent staff recommendations, private hospital rooms have been the design standard of the Facility Guidelines Institute for more than ten years. The industry has moved to this standard to such an extent that private room accommodation is now a widespread patient expectation.

Other specific benefits of private rooms include:

- Enhanced infection control and capacity for patient insolation;
- Reduction in patient moves to accommodate acuity, diagnosis, infection control, or gender, and a corresponding decreased cleaning burden for staff;
- Improved throughput from the emergency department and efficiencies for Admissions staff;
- Physical space and accommodations for family members and other visitors including space for overnight stays;
- Superior patient engagement, confidentiality, and privacy as the treatment team can meet and discuss issues at the bedside with the patient;
- Sufficient space to accommodate clinical equipment, supplies and storage; and
- Reduced ambient noise pollution, especially at night, which improves treatment and recovery for many patients and reduces staff stress.

MODERNIZE FACILITIES

JHBMC's second primary goal is to provide modernized and upgraded facilities that offer the highest level of patient safety, quality and operational performance. Currently, many programs and services at JHBMC occur in spaces and units that are undersized, outdated, and would greatly benefit from a strategic redesign where targeted unit adjacencies can be pursued.

The following sections discuss the current conditions of JHBMC's:

- Obstetrics Facilities
- NICU
- Burn Center
- Intensive Care Units
- Medical/Surgical Inpatient Rooms
- Operating Rooms
- Helipad
- Campus Support & Logistics Infrastructure

Obstetrics Unit - Current Conditions

The current Obstetrics Unit serves three categories of patients: ante-partum, post-partum, and post-operative gynecological surgery patients. The unit is located in the A Building, which was built in 1937. The infrastructure in the A Building is outdated and undersized, electrical and IT closets are too small to accommodate current requirements, and the HVAC systems are not adequately-sized to meet heating and cooling demands. Due to existing shaft sizes and other structural impediments, the infrastructure deficiencies in the A Building cannot be resolved through renovation.

In 2014, construction of the North Pavilion at JHBMC was completed, which includes the Adult Emergency Department, a Clinical Decision/Observation Unit and a combined Pediatric Emergency Department/Inpatient unit. The move of Pediatrics to the North Pavilion allowed for renovation of the vacated space to become an extension of the OB unit. This provided some relief of pressing space deficiencies and ensured private rooms for OB patients, but the overarching issues of inadequate space in the rooms and on the unit, outdated facilities, and a lack of adjacency for key services continue to impact the functionality of the unit.

Labor and Delivery Rooms

The existing Labor and Delivery Rooms are located in the AA Building, a different, adjacent building to the south of the A Building. The deficiencies of this unit are outlined below:

The Triage rooms average 104 SF, while current standards mandate 120 SF of clear floor space.[3] In addition to being undersized, the rooms are poorly oriented for protecting patient privacy.

[3] **Average room size is compared to the FGI guidelines for minimum clear floor space. The FGI does not**

The Labor and Delivery Rooms average 238 SF. Current standards mandate a clear floor area of 340 SF. The ceilings do not have adequate overhead lighting and cannot support an adequate lighting system; consequently, large floor lights take up space and leave cords as a fall hazard. Due to space constraints, required clinical equipment does not fit in the rooms, presenting access challenges for staff, especially during a complicated delivery. Further, the room size limits space for family members to be in the room during a birth, which is standard current practice.

C-Section Rooms

The existing C-section Rooms average 360 SF. Current standards mandate 440 SF of clear floor space. The size and layout of the rooms makes set-up for procedures difficult. Also, the recovery room is accessed through the sub-sterile area, meaning patients, staff, and visitors must walk through the sub-sterile area to get to the PACU, resulting in infection control and privacy issues.

NICU - Current Conditions

The JHBMC NICU is located in the AA Building, which was constructed in the 1960s and last renovated in the mid-1990s.

Although all of JHBMC's programs and services will benefit from private rooms, there are certain services for which the improvements are essential; the NICU is one such service. The unit currently contains 25 bassinets in two rooms. It is extremely undersized, averaging approximately 70 SF per bassinet while newer facilities, like the NICU at the JHH East Baltimore campus, average 168 SF per bassinet. The unit at JHBMC is an "open ward," with neonates of varying levels of acuity located next to each other in open space. The current layout results in overcrowding and congestion, with inadequate space for providers, patients and families. The staff have difficulty accessing routine clinical supplies, computers and other technology and encounter challenges bringing necessary equipment to the patient's bedside or isolating a sick neonate as needed. Additionally, there is no private space for new mothers to breast feed.

specify a minimum room size, but rather, how much clear floor space is required in each room type and the required clearances around the bed. Given that the available clear floor space within a room is always less than the size of the room itself, this comparison helps to explain how much larger a given room would need to be to meet FGI criteria.

Burn Center – Current Conditions

The current Burn Center functions as an admitting area, urgent care center, intensive care unit, step-down unit and rehabilitation center. It is comprised of 10 critical care Rooms and 10 step down beds (2 private and 8 semi-private). The higher acuity patients are treated and cared for in the 10-bed Burn Intensive Care Unit. Patients with less demanding clinical needs and acuity are transferred or admitted directly to the 10-bed Burn and Wound Unit.

While the JHBMC Burn Center is recognized as one of the top centers in the country, the current physical space and infrastructure are outdated and inadequate. The JHBMC Burn Center needs larger, private patient rooms and other amenities to address infection control, patient safety, comfort, healing and rehabilitation. The entire unit needs to be significantly larger to accommodate all of the activity required to care for these critically ill patients.

Patient Rooms

The patient rooms cannot accommodate the various equipment required for procedures that take place in the room, water and air temperatures cannot be increased as quickly as necessary for patient comfort, and the room sizes cannot properly accommodate family members, which is crucial.

Burn ICU

In the Burn ICU, the heat shield technology is out-of-date and no longer supported. Burn patients are vulnerable to changes in body temperature and have trouble recovering; this equipment is need to maintain body temperature during dressing changes and other procedures.

Step-Down Patient Rooms

Most of the rooms on the step-down unit are semi-private, hampering patient privacy and infection control in a population already at high risk of infection. Contemporary units are designed as private rooms for infection control and patient privacy reasons, as well as to support family-centered care.

Hydrotherapy Room

Within the Burn Center, there is a hydrotherapy room (also called a “tub room” or “shower room”) where patients go multiple times during the course of their stay for the removal of dead and damaged skin. The room can accommodate up to two patients at a time; however, a dividing wall does not offer sufficient privacy. The hydrotherapy room was renovated in summer 2014 to make it easier to properly disinfect surfaces, to update water filtration and HVAC, and to support infection control and improve the comfort of burn patients. It remains insufficiently sized, with inadequate protection of patient privacy, and unable to offer adequate temperature control and enhanced technology.

THE LACK OF A PROCEDURE ROOM

The Burn Center currently lacks the space and facilities to perform procedures with anesthesia. Access to a dedicated procedure room would allow for procedures to take

place in a sterile environment, minimize the risk of infection, and reduce the need to go to the operating room.

Rehabilitation Gym
Built in 1999, the rehabilitation gym is used for both inpatient and outpatient therapy. The volume of patients, especially during prime appointment times, exceeds the capacity of the space. Crowding in the gym impinges on patient privacy and results in a more stressful experience for both patients and staff.

Staff Support Space
In the current Burn Center, there is no provision for staff to store personal belongings, including changes of clothes, and no facility for them to shower.

Intensive Care Units – Current Conditions

The existing Intensive Care Units do not meet current size standards for patient care. The rooms are grossly undersized, averaging approximately 184 SF (compared to the average JHH ICU room size of 256 SF) and do not accommodate necessary equipment or family members, who are increasingly considered an integral part of patient care. In addition, there is not enough staff workspace to accommodate the increasing number of staff that need to communicate and collaborate on the units.

Medical/Surgical Inpatient Rooms – Current Conditions

Currently, 60 percent of the inpatient beds at JHBMC inpatient beds are semi-private. There has been no major renovation of these rooms in over 25 years. Like many other units, JHBMC's semi-private rooms lack adequate space for needed equipment, optimal patient care or family support. The JHBMC semi-private rooms are 255 SF (for two patients), compared to 209 SF for a private room at JHH. Between 8 and 15 semi-private beds on a given day are out of service due to patients that require isolation. This has an adverse impact on emergency department throughput.

Operating Rooms, Prep, PACU – Current Conditions

Operating Rooms

All 14 operating rooms at JHBMC are located in the Francis Scott Key Pavilion ("FSK") on the third floor, which opened in 1994.

Operating Rooms #1-10 were built during FSK's original construction. The operating room sizes range from 410 SF to 529 SF (average is 454 SF). Many of the rooms are undersized compared to current standards.

Operating Rooms #11, #12, #14, and #15 are located in FSK but were constructed in 2009 and are more appropriately sized. This suite includes an intraoperative CT between Operating Room #12 and #14.

Francis Scott Key Pavilion Operating Room Size			
1994 Original Construction (#1-10)		2009 Construction (#11, 12, 14, 15)	
OR #1	447 SF	OR #11	502 SF
OR #2	445 SF	OR #12	627 SF
OR #3	412 SF	OR #14	649 SF
OR #4	410 SF	OR #15	658 SF
OR #5	526 SF		
OR #6	440 SF		
OR #7	447 SF		
OR #8	444 SF		
OR #9	436 SF		
OR #10	529 SF		
Average	454 SF		

Many of the operating rooms from the 1994 original construction barely exceed FGI requirements for minimum clear floor area of 400 SF, and fall far short of operating room square footage guidelines for image-guided surgery or other more modern surgical procedures that require additional personnel and/or large equipment (estimated to need, on average, about 600 SF).

Undersized operating rooms are a problem not only because the amount of equipment in operating rooms has increased over time, but also because the size of equipment has increased, such as robots, C-arms, electronic monitoring, status tracking systems, and

intraoperative imaging equipment. These pieces of equipment require space, power and data to be in the proper locations. As space becomes more limited, proper placement of equipment and personnel becomes more difficult. Other undesirable consequences of undersized operating rooms include:

- Case cart storage infringes on circulation and access to the operating room
- Cables for the various equipment placed on the floor presents a tripping hazard, as well as potential damage to cords
- Space can be inadequate for proper documentation, either because of all of the equipment and supplies in the room, or because documentation cannot be done in an optimal location with proper access to the patient
- Lack of storage space within the operating rooms necessitates staff leaving the room during procedures to get equipment

Pre-Operative Preparation Area (PREP Area)
There are some procedures, such as arterial blocks, that can be performed in the Prep Area prior to entry to the operating room. However, the current Prep Area is undersized and configured in such a way that these pre-operative procedures must often be performed in the operating room itself, making operating room utilization less efficient.

Post-Anesthesia Care Unit (PACU)
Currently the PACU is one large space, with no divisions for phases of recovery. Phase 1 patients often require closer supervision and visualization by staff. Phase 2 patients usually have a family member with them and are beginning to eat and drink, get dressed, hear discharge instructions and prepare to leave. Currently, these patients are combined and could not be separated without significantly decreasing the size of the unit or without significant renovation. In better designed, larger space, patients in different phases will be physically separated, which will facilitate safe and appropriate care.

Helipad – Current Conditions

The existing helipad is on the ground, north of the Bayview Medical Office Building, and east of A Building. The flight path is difficult because the helipad is surrounded by buildings. Patients arriving by helicopter are transported to the emergency department by ambulance.

Campus Support & Logistics Infrastructure – Current Conditions

Loading Dock and Materials Staging
The loading dock, located in a building constructed in 1937, has been reviewed by two consultants who have recommended that two to three additional bays be added to support medical center receiving, due to these current challenges:

- The current loading dock does not allow for clear segregation of clean and dirty supplies.

- Linen exchange carts are loaded in hallway that is also used for materials distribution and transport.
- The dock apron is not weather enclosed so all activities are not in conditioned space.
- The food service dock is immediately adjacent to the trash dumpster and has the potential for clean/soiled cross-contamination.

In addition, oxygen storage is inadequate to meet hospital needs and hazardous waste is located on the dock adjacent to combustibles.

Elevators
The number of elevators is inadequate for patient and materials transport. Further, there is no way to separate clean and dirty materials or to create dedicated patient transport elevators. FGI guidelines state that consideration should be given to dedicating and separating elevator types by function, such as those for public, patients, staff, and materials (clean versus soiled). The diverse uses of elevators affect operational efficiency, can cause cross-contamination, and threaten infection control efforts.

Materials Distribution
Internal hallways prevent some pallet delivery and require inefficient work flows for materials distribution. Internal circulation creates challenges requiring staff to use longer or inefficient routes.

Lack of Central Storage
Due to a lack of space, there is no central storage and no centralized equipment distribution system. Equipment for patient care, such as scales, beds, wheelchairs, crash carts, and IV poles, is stored in several smaller areas throughout the hospital. When equipment is needed, retrieval is delayed by staff having to search multiple locations and there not being a centralized process.

DELIBERATIVE PROCESS

VISION

Leadership of JHBMC and JHM engaged in an extensive process over the last ten years to determine the optimal configuration and use of the campus over the next several decades and to explore the possible paths to achieve that vision and continue to meet the needs of the community while also fulfilling its academic mission.

Participants developed and agreed upon a Vision:

This project will advance Johns Hopkins' vision for JHBMC as an academic medical center that is expert also at meeting the unique needs of the local community. That is, the effort represents a continuation of investment in JHBMC as a major community hospital serving the southeastern communities of Baltimore City and Baltimore County and as a key teaching arm and research facility for the School of Medicine and the home of selected specialty services as part of the Johns Hopkins Medicine Academic Division. It was also agreed that consolidation of certain specialty services to a single campus, JHBMC or JHH, should be pursued where appropriate, and that a high degree of clinical integration should exist between the campuses in order to achieve operational efficiency and flexibility.

DEVELOP NEW CAMPUS MASTER PLAN

The architectural firm Ayers Saint Gross was hired in 2009 to develop a new Master Plan for the JHBMC campus. This work commenced with a broad evaluation of the campus including all existing buildings, vehicular and pedestrian circulation, parking, materials management, etc.

Along with the development of the Master Plan, several intensive studies were undertaken to understand the particular clinical program needs of JHBMC. Specific consideration was given to the clinical program needs and space limitations of JHH, synergistic adjacencies on both campuses, and whether some programs should be consolidated to one location to eliminate redundancy, reduce costs, and improve efficiency.

At this point in the process, two Primary Goals for the JHBMC redevelopment were identified:

1.) Maximally Transition JHBMC to All Private Patient Rooms
2.) Modernize and Upgrade Outdated Facilities

In order to accomplish these Primary Goals, six Project Objectives were defined:

1.) Maximize Number of Private Patient Rooms in Medical/Surgical Units
2.) Maximize Inpatient Activity in Modernized Space
3.) Maximize Number of Critical Care Patients in Modernized Space
4.) Right-Size Inpatient Units to Accommodate Current Operational Models

5.) Maximize Opportunities for Improved Operational Efficiency and Patient Experience
6.) Optimize Materials Flow and Distribution

DEVELOP AND REVIEW ALTERNATIVE SOLUTIONS

The first alternative considered to achieve the goals of redevelopment was the renovation of existing space. Early in the process, it was determined that the essential goals of the project could not minimally be met through this option:

- At best, only 48% of the licensed beds would be in private rooms, a minimal improvement over the current 40% and not close at all to the goal of 100%.
- By keeping clinical services including inpatient beds in older buildings, substantial, costly upgrades to those buildings would be required, including new roofs, upgraded or new elevators, and upgraded HVAC systems.
- The lack of available swing space would make a renovate-in-place plan very challenging and require a reduction in overall bed capacity throughout the entire construction period, which would last more than 10 years.

The conclusion of this analysis was that some new construction is an essential element of the project in order to achieve the goals of the project. Once leadership established that the most effective solution for meeting the strategic goals and mission of the hospital was a New Inpatient Building, Array Architects was hired to help determine the size, shape, and cost of a new building that would support JHBMC's essential goals.

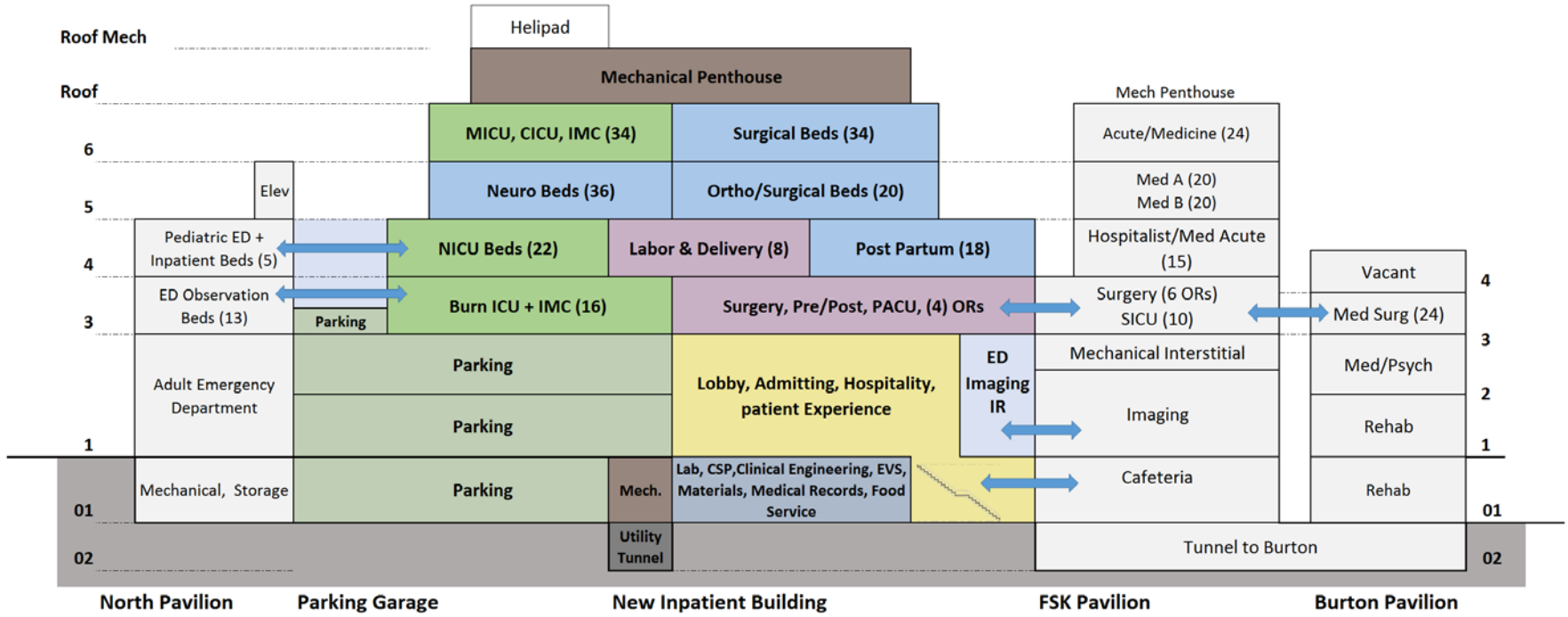
DETAILED NEW INPATIENT BUILDING DESCRIPTION:

An aerial photo of the existing mid-campus is included below, with the proposed location of the New Inpatient Building (“NIB”) outlined in red.

A rendering of the NIB is depicted below:

The New Inpatient Building (NIB) will be six stories above grade and one story below grade. A conceptual drawing is included below:

KEY	
⟷	Connection To Existing Buidling
	Critical Care Beds
	Medical, Surgical, Obstetrics Beds
	L&D, ORs, Pre/Post, PACU


Roof Mech
Roof
6
5
4
3
1
01
02
Helipad
Mechanical Penthouse
MICU, CICU, IMC (34)
Surgical Beds (34)
Neuro Beds (36)
Ortho/Surgical Beds (20)
Elev
Pediatric ED + Inpatient Beds (5)
NICU Beds (22)
Labor & Delivery (8)
Post Partum (18)
ED Observation Beds (13)
Parking
Burn ICU + IMC (16)
Surgery, Pre/Post, PACU, (4) ORs
Adult Emergency Department
Parking
Parking
Lobby, Admitting, Hospitality, patient Experience
ED Imaging IR
Mechanical, Storage
Parking
Mech.
Lab, CSP,Clinical Engineering, EVS, Materials, Medical Records, Food Service
Utility Tunnel
Mech Penthouse
Acute/Medicine (24)
Med A (20)
Med B (20)
Hospitalist/Med Acute (15)
Surgery (6 ORs)
SICU (10)
Mechanical Interstitial
Imaging
Cafeteria
Tunnel to Burton
Vacant
Med Surg (24)
Med/Psych
Rehab
Rehab
4
3
2
1
01
02
North Pavilion
Parking Garage
New Inpatient Building
FSK Pavilion
Burton Pavilion

Inpatient space in the NIB will be located on Levels 3 through 6. It will include 94 private Medical/Surgical rooms, 46 private Intensive Care rooms, and 18 private Obstetrics rooms, for a total of 158 private rooms.

Level	Beds	Unit	Subcategory	M/S	ICU	OB
6	34	Medical Cardiac ICU	12 MICU 12 CICU 10 CIMC	10	24	-
	34	Surgical Acute Unit		34	-	-
5	36	Neurosciences Unit	12 ICU 6 Intermediate 18 Acute	24	12	-
	20	Orthopedic/Surgical Unit		20	-	-
4	18	OB/GYN		-	-	18
	22	NICU		-	-	-
3	16	Burn Unit	10 ICU 6 Intermediate	6	10	-
			TOTAL	94	46	18

As a result of the project, the number of acute care inpatient beds operated at JHBMC will decrease from 342 to 315**.** The total number of operating rooms will remain at 14, replacing 4 existing undersized and outdated ORs with 4 newly-constructed ORs.

The features of the one level below grade (Level 01), six levels above grade (Level 1-6), the roof, other facility renovations, and utilities infrastructure are detailed below.

LEVEL 01 – SUPPORT AREAS

Level 01 provides support space for Central Sterile Processing (CSP), Environmental Services (EVS), and Medical Records in the New Inpatient Building. This will allow those functions to move out of the A and FSK buildings. The vacated space in the existing buildings will then be reconfigured to improve the Loading Dock and Materials Management flow.

With the new design, the CSP physical space will be expanded. As a result, the packing and prepping of the OR case carts can occur at one, consolidated location within CSP, instead of at multiple locations per the current model. The carts can then be transported to the OR with the appropriate level of standardization and security. This will greatly enhance the efficiency of CSP operations. In addition, CSP will be physically located directly under the ORs, which will reduce transport time.

Level 01 also allows for the relocation of the Core Lab out of A and AA buildings and into the NIB. The existing space and infrastructure cannot support the growing programmatic needs of the lab. In addition, the increasing equipment needs result in additional heat load in the space. The current HVAC is inadequate for cooling the space.

Clinical Engineering, supporting clinical equipment needs and repairs, will also be relocated to Level 01. This move, combined with the relocation and downsizing of Medical Records and the relocation of Central Sterile Processing, allows for renovations and then repurposing of the existing space for Supply Storage, Environmental Services Support, Materials Management, and Kitchen Storage. These renovations and relocations of support services allow them to become more efficient.

LEVEL 1 – PARKING GARAGE, LOBBY, ADMITTING, HOSPITALITY, PATIENT EXPERIENCE, IMAGING

Currently, most patients at JHBMC use the East Parking Garage. Given that the location of the new inpatient tower will shift west, a parking garage for patients and visitors is needed in close proximity to patient care and support areas. The project proposes a new 540-car garage on the northern end of the Mid-Campus Lot.

The garage will occupy Levels B, 1 and 2 of the west wing of the NIB. Patients arriving for outpatient procedures will continue to park in the East Parking Garage, but patients and visitors to the NIB will park in the new garage. The garage will help support some of the frailest patients at JHBMC, as it will create a space for patients receiving care in the Burton Pavilion (where many services for the aging population are provided) and the Asthma and Allergy Center to park with less distance to walk and less exposure to the elements.

The main lobby level will have a direct indoor connection to the new parking garage and will include patient amenities (chapel, retail pharmacy, etc.)

There will be a direct connection from the NIB to Level 1 of the FSK Pavilion which will allow continuous interior access to the Imaging, Emergency Department, and

Ambulatory Services.

Level 1 will also include imaging services including General Radiology, CT, Interventional Radiology and Ultrasound. Imaging services will be located directly adjacent to the Emergency Department. This is an important programmatic design feature, as the ED refers a high percentage of patients to imaging services (52% in FY2017). Locating these services in close proximity will yield many efficiencies including reducing the amount of time for patient transport, decreasing a patient's average length of stay in the ED, and improving general operational workflows.

The Neuro Interventional Radiology room will be relocated (from FSK 1) to the NIB imaging suite, directly adjacent to the Emergency Department. This will allow stroke patients who present or are transferred to the ED to be diagnosed and treated as quickly as possible. This increases the patient's chances of recovery by reducing the time from diagnosis to procedure. The NIB will also have a second IR room that can be used for Neuro cases but will also be well suited for non-neuro cases. The current prep and recovery area, located on FSK 1, is inadequate because it does not have bays and lacks a dedicated toilet room for patients. This will also relocate to the new imaging suite.

LEVEL 2 – INTERSTITIAL SPACE

In order to keep the floor levels consistent with the FSK, which has an interstitial space above Level 1 and skips Level 2, there is no Level 2 in the NIB.

LEVEL 3 – BURN UNIT, OPERATING ROOMS, PREP, PACU, BRIDGE

Level 3 aligns with and has horizontal connection to FSK Level 3. There will be improved, streamlined access to the Surgery suite through the NIB. The design will collocate the Prep, PACU, and Operating Rooms on the same floor, which will greatly reduce transport time and will streamline patient care.

The ORs will be configured as an extension of the existing OR block, extending the clean core and sub-sterile corridors, while increasing the width of the sterile core in order for it to be more functional and improving internal circulation.

In addition to the connection between the restricted OR areas of the FSK and NIB, there will be a public connector that will allow patients and visitors to cross back and forth between the NIB and public areas of the FSK. A connecting bridge to the Burton Pavilion will also be provided at this level. Level 3 is the highest level at which the NIB and FSK connect.

WAITING AREA, PREP, PACU

The NIB will have an appropriately sized Surgery waiting and registration area that meet functional needs and HIPAA requirements.

The new Prep/PACU space includes private bays for Prep and Phase II recovery, important for both HIPAA compliance and patient satisfaction. The PACU Phase I recovery area has semi-private bays which allow staff to have better visualization of the

recovering patients.

The Prep area will also include larger bays that can accommodate the anesthesia staff when they are performing pre-surgery procedures (such as arterial blocks), some of which currently must be performed in the OR because the space in the Prep area is inadequate.

OPERATING ROOMS

Level 3 includes four new operating rooms to replace four existing, undersized operating rooms. The new ORs will be designed with enough physical space to support all staff, equipment, supplies and other supporting clinical infrastructure. The OR redesign will enhance operational efficiency as staff will have quick and easy access to necessary equipment and supplies, and it will reduce multiple deliveries of supplies, equipment, and medication to the OR that currently occur. This will reduce labor required for deliveries and improve efficiency in the OR, also resulting in improved patient care.

The new replacement ORs will be on average 600 SF, allowing for complex surgeries that require a lot of equipment and staff (i.e. Neurosciences and Orthopedic surgeries) with one new dedicated Burn OR that will have special humidity and temperature controls as well as direct access to the new Burn ICU.

This will increase the number of larger, more modern ORs from 4 to 8, and reduce the complement of older, smaller ORs from 10 to 6. Thus, more of the ORs in operation will be large enough for cases that require more space, equipment, and personnel, and thereby increase flexibility in scheduling those cases.

BURN UNIT

The Burn Unit will be located in the NIB on Level 3, directly adjacent to a new dedicated Burn operating room. This increases efficiencies by eliminating patient transport and improving general operational workflows.

Additional features include:

ICU PATIENT ROOM

The Facilities Guideline Institute (FGI) recommendations, used by The Joint Commission on Accreditation of Health Care Facilities and the Centers for Medicare and Medicaid to evaluate programs and conditions, call for a minimum of 200 SF for an ICU patient room. The ideal ICU room will be significantly larger (additional 100 SF) to accommodate equipment, an area for donning and doffing gowns, and a walk-in shower/bathroom to use when the hydrotherapy room is not available. Instead of large heaters hanging above patient beds, rooms will have special coils in the walls to provide radiant heat. This technology is safer and makes it easier to regulate room temperature, which is crucial for patients with severe burns. A larger ICU room also allows space for families to visit more comfortably, which is critical for a patient's emotional and physical recovery. Ideally, the room will include a convertible couch or recliner for loved ones to spend the night—something the current Burn ICU does not have. Larger rooms

also provide space for staff to provide more in-depth education and bed-side training prior to discharge, which facilitates safe, comfortable discharges and may reduce the length of stay and readmissions.

STEP-DOWN PATIENT ROOM

Contemporary units are designed as private rooms for infection control and patient privacy reasons, as well as to support family-centered care. An updated step-down patient room will be private with a walk-in shower/bathroom and a convertible couch or recliner for families to visit or spend the night. Similar to the ICU, these rooms also will have special coils in the walls to provide radiant heat and better regulate room temperature.

PROCEDURE/HYDROTHERAPY ROOM

A combined procedure/hydrotherapy room will continue serving as a hydrotherapy room while also allowing for the provision of anesthesia in order to perform procedures. On the current unit, there is no procedure room and the hydrotherapy room cannot accommodate procedures. Many procedures are performed at the bedside (escharotomy, central line placement, etc). Access to a dedicated procedure room will improve the sterility of these procedures, minimize the risk of infection and reduce the need to go to the operating room. The combined procedure and hydrotherapy room will have the ability to provide moderate sedation for painful procedures, an irrigation system, heated walls and its own Pyxis system (for medications and anesthesia).

REHABILITATION GYM

The current burn rehabilitation gym serves both inpatients and outpatients. A larger space is necessary to accommodate the volume of patients, as well as the large equipment used for physical and occupational therapy. Most of the current equipment is past its useful life, and while it is still functional, needs to be replaced. Updated equipment in the NIB will include an elliptical machine, lift gate for lifting patients, hi-low mats, hi-low tables, bedside Total Contact® face scanner, work simulation machines and a new weight training station. The new rehabilitation gym will also include a pulsed lavage room for wound care, remote monitoring for patient vital signs, a separate room for making splints and masks, and a separate waiting area for family members.

CONSULTATION/EXAMINATION ROOM

The updated Burn Center will include a consultation/exam room, allowing providers who specialize in burn injuries to evaluate patients who may not need to be admitted to the hospital, and offer physical therapists, occupational therapists, and other specialists a place to provide patient consultations. Additionally, the consultation/exam room will serve as a location for staff to provide family education about complex dressing changes and offer laser Doppler imaging to determine the depth of burn wounds instead of using procedure rooms, which are not always available.

STAFF LOCKER ROOM & SHOWER

Burn Center nurses typically work three 12-hour shifts each week. They work dressed in plastic-coated gowns, masks, hats and protective gloves, and a single

dressing change on a badly burned patient can take as long as four hours. Patient rooms must be kept at higher temperatures because burn patients are vulnerable to temperature changes. In the current Burn Center, there is no provision for staff to store personal belongings, including changes of clothes, and no facility for them to shower. This space is included in the design of the new Burn Center.

Once the NIB is completed and the existing Burn Unit is vacated, the space will be renovated to become a new, 10 bed state-of-the-art Surgical Intensive Care Unit, resulting in all of JHBMC's ICU beds being in new or newly-renovated space.

LEVEL 4 – Labor & Delivery, Obstetrics Unit, NICU

Level 4 will be the Women and Children's floor of the NIB, connecting directly to Level 4 of the North Pavilion, where the Pediatric Emergency Department and Pediatric Inpatient Unit are located.

Level 4 of the NIB will include

- 18 Ante/Post Partum Beds
- 8 Labor and Delivery Rooms
- 5 Triage Rooms
- 6 Newborn Nursery Bassinets
- 2 C-section Operating Rooms
- 22 NICU beds

A core design feature of Level 4 is the co-located of maternal and child services and the strategic adjacencies it enables. Currently, the Obstetrics inpatient unit is located in a different building (A Building) than the Labor and Delivery procedure suite (AA Building). This makes patient transportation and clinical operations inconvenient and inefficient. On Level 4, all inpatient obstetrics services and facilities will be relocated from the oldest buildings on campus – the A and AA buildings – to the New Inpatient Building. The new construction will strategically locate the Labor and Delivery rooms and the Obstetrics unit directly adjacent to one another, which will greatly reduce transport time and improve clinical outcomes and patient safety.

OBSTETRICS INPATIENT UNIT

In the new 18-bed Obstetrics unit, the inpatient rooms will be right-sized to accommodate all patient, family and clinical requirements. Doing so will allow babies to remain in rooms with their mothers, and will also enhance clinical operations and infection control.

LABOR AND DELIVERY ROOMS

The new design provides for larger rooms with ample physical space for family support and proper placement of clinical equipment. The additional space will also better support the clinical teams, especially when additional staff, such as the NICU team, is called in for support.

TRIAGE ROOMS
The new design includes two incremental triage rooms for a total of five. Having additional capacity will improve patient safety and decrease wait times and other delays resulting from inadequate capacity.

C-SECTION OPERATING ROOMS
The C-section rooms will be right-sized, allowing for enough physical space for all necessary supplies, equipment and staff. The rooms will have an infant resuscitation area between them in order to stabilize critically ill neonates prior to transferring them to the new NICU, which will be immediately adjacent.

NEWBORN NURSERY BASSINETS
A modest six-bed well baby nursery, which is in line with today's model where most mothers and newborns room together for the majority of their stay, is located on the Ante/Post-Partum Unit.

NICU
The twenty-two bed all private room NICU is designed with additional space for multiple purposes. First, additional space for parents to room in with their babies will now be available. Second, additional parent support space will allow parents to participate in the care of their babies. Third, additional space will facilitate the isolation of babies with infection control needs.

The conditions in the existing NICU (in the AA building) do not allow any of these important activities to occur. In the new NICU, equipment, supplies, nutrition and medications will all have dedicated and separate physical space, which will greatly improve operational efficiency and performance.

The new design will collocate the NICU, L&D and Obstetrics units, improving access and greatly reducing the time needed to transport delivering mothers and neonates to the appropriate care environment.

The NICU will also feature a Neonatal Delivery Room Resuscitation Area that will provide for an appropriate resuscitation space as well as dedicated space for equipment, which will enhance patient safety.

OTHER FEATURES
Other specialty rooms that support the OB patients are located on the floor, including a Parent Education conference room, Lactation training space and a private room for family consultation room. Level 4 will also feature a Nutrition Room. Currently, staff prepare formula and other nutrition products in areas not designated for nutrition. This can lead to errors and contamination, which could compromise an infant's health and safety. The new design will have dedicated nutrition rooms for breastfeeding and formula preparation, which will minimize opportunities for errors or contamination.

The co-located of all maternal and child services also allows JHBMC to have more secure system for safeguarding infants and children. The services can be better monitored and the unit can be locked, with fewer people entering and leaving the locked unit than when the services were housed separately.

LEVEL 5 – ORTHOPEDIC/SURGICAL BEDS AND NEUROSCIENCES

The 36-bed Neurosciences mixed acuity unit and 20-bed orthopedic/surgical inpatient unit are located on Level 5, with a shared rehabilitation gym, predominantly used by these patients, conveniently located between the two units.

The 36 Neurosciences beds are comprised of 12 Intensive Care beds, 6 Intermediate Care beds and 18 medical/surgical beds of which two rooms have airborne isolation capability. The Orthopedics inpatient unit has two rooms with airborne isolation capability as well. Both units are designed with ample staff and multidisciplinary work and teaching space and appropriately allocated clinical support space.

LEVEL 6 – MEDICAL/SURGICAL INPATIENT BEDS

A 34-bed Medical mixed acuity unit and 34-bed Surgical Acute unit will reside on Level 6 with a shared rehabilitation gym. These patients may also use the gym located on Level 5.

The Medicine Unit is comprised of 12 Medical Intensive care beds, 12 Cardiac Intensive Care beds and a 10 bed Medical/Cardiac Intermediate Care unit.

ROOF – MECHANICAL, HELIPAD

A large mechanical penthouse will reside on the roof above Level 6, which will house the thirteen air handling units that will serve the building. The penthouse will also include: the main electrical room that will distribute normal and essential power, all medical gas equipment, miscellaneous HVAC equipment to condition the electrical rooms, penthouse and elevator machine rooms, as well as general exhaust fans.

A new helipad will be located on the roof of the mechanical penthouse and will replace the existing helipad is on the ground, north of the Bayview Medical Office Building and east of A Building. The new helipad will allow incoming patients to be transported directly into the hospital via elevators from the roof, which will reduce transport time as well streamlining the operational workflow.

OTHER FACILITY RENOVATIONS

The project includes other infrastructure upgrades necessary to update and operationalize existing buildings with clinical services. Renovations to the Francis Scott Key (FSK) Pavilion and the A Building will be as follows:

- FSK – Level 01: reconfiguration of Food Service
- FSK – Level 1 and 3: new connections to the NIB
- FSK – Level 3: new 10 bed SICU in the vacated Burn Unit space including a new connection to the NIB
- FSK – Level 3: new Telemetry Hub
- FSK and A Building – Level 01: reconfiguration of support services including Materials Management, EVS, Linen, and Loading Dock

Complete the DEPARTMENTAL GROSS SQUARE FEET WORKSHEET (Table B) in the CON TABLE PACKAGE for the departments and functional areas to be affected.

Applicant Response:

Please see Exhibit 1B for Table B.

9. CURRENT PHYSICAL CAPACITY AND PROPOSED CHANGES

Complete the Bed Capacity (Table A) worksheet in the CON Table Package if the proposed project impacts any nursing units.

Applicant Response:

Please see Exhibit 1A for Table A.

10. REQUIRED APPROVALS AND SITE CONTROL

A. Site size: ___1.1___ acres

B. Have all necessary State and local land use approvals, including zoning, for the project as proposed been obtained? YES_____ NO __X__ (If NO, describe below the current status and timetable for receiving necessary approvals.)

Site is governed by a Planned Unit Development Ordinance (PUD). PUD permits proposed use, but is subject to Baltimore City planning review. Planning review will be concurrent with design and document development, as it is a prerequisite for the building permit.

C. Form of Site Control (Respond to the one that applies. If more than one, explain.):

(1) Owned by: _____
Please provide a copy of the deed.

(2) Options to purchase held by: _____
Please provide a copy of the purchase option as an attachment.

(3) Land Lease held by: JHBMC
Please provide a copy of the land lease as an attachment.

Land title held by FSK Land Corp., an affiliate of the Johns Hopkins Health System Inc. The buildings are new, and the New Inpatient Building will be owned by JHBMC Inc.

Please see Exhibit 4

(4) Option to lease held by: _____
Please provide a copy of the option to lease as an attachment.

(5) Other: _____
Explain and provide legal documents as an attachment.

11. PROJECT SCHEDULE

In completing this section, please note applicable performance requirement time frames set forth at COMAR 10.24.01.12B & C. Ensure that the information presented in the following table reflects information presented in Application Item 7 (Project Description).

	Proposed Project Timeline	
Single Phase Project		
Obligation of 51% of capital expenditure from CON approval date		months
Initiation of Construction within 4 months of the effective date of a binding construction contract, if construction project		months
Completion of project from capital obligation or purchase order, as applicable		months
Multi-Phase Project for an existing health care facility (Add rows as needed under this section)		
One Construction Contract		months
Obligation of not less than 51% of capital expenditure up to 12 months from CON approval, as documented by a binding construction contract.		months
Initiation of Construction within 4 months of the effective date of the binding construction contract.		months
Completion of 1st Phase of Construction within 24 months of the effective date of the binding construction contract		months
Fill out the following section for each phase. (Add rows as needed)		
Completion of each subsequent phase within 24 months of completion of each previous phase		months
Multiple Construction Contracts for an existing health care facility (Add rows as needed under this section)		
PHASE 1: SITE ENABLING		
Obligation of not less than 51% of capital expenditure for the 1st Phase within 12 months of the CON approval date	12	months
Initiation of Construction on Phase 1 within 4 months of the effective date of the binding construction contract for Phase 1	2	months
Completion of Phase 1 within 24 months of the effective date of the binding construction contract.	5	months
PHASE 2: INPATIENT BUILDING, GARAGE AND POWER PLANT		
Obligation of not less than 51% of capital expenditure for the 2nd Phase of construction within 12 months after completion of immediately preceding phase	3	months
Initiation of Construction on Phase 2 within 4 months of the effective date of binding construction	2	months

	contract for that phase		
	Completion of Phase 2 within 24 months of the effective date of the binding construction contract	36	months
	PHASE 3: FURNISH, EQUIP AND ACTIVATE CLINICAL BUILDING		
	Obligation of not less than 51% of capital expenditure for the 3RD Phase of construction within 12 months after completion of immediately preceding phase	-8	months
	Initiation of Construction on Phase 3 within 4 months of the effective date of binding construction contract for that phase	-3	months
	Completion of Phase 3 within 24 months of the effective date of the binding construction contract	16	months
	PHASE 4: BACKFILL RENOVATIONS AND ACTIVATION		
	Obligation of not less than 51% of capital expenditure for the 4th Phase of construction within 12 months after completion of immediately preceding phase	-4	months
	Initiation of Construction on Phase 4 within 4 months of the effective date of binding construction contract for that phase	4	months
	Completion of Phase 4 within 24 months of the effective date of binding construction contract for that phase	14	months

12. PROJECT DRAWINGS

A project involving new construction and/or renovations must include scalable schematic drawings of the facility at least a 1/16” scale. Drawings should be completely legible and include dates.

Project drawings must include the following before (existing) and after (proposed) components, as applicable:

A. Floor plans for each floor affected with all rooms labeled by purpose or function, room sizes, number of beds, location of bathrooms, nursing stations, and any proposed space for future expansion to be constructed, but not finished at the completion of the project, labeled as “shell space”.

B. For a project involving new construction and/or site work a Plot Plan, showing the "footprint" and location of the facility before and after the project.

C. For a project involving site work schematic drawings showing entrances, roads, parking, sidewalks and other significant site structures before and after the proposed project.

D. Exterior elevation drawings and stacking diagrams that show the location and relationship of functions for each floor affected.

Applicant Response:

Please see Exhibit 5.

13. FEATURES OF PROJECT CONSTRUCTION

A. If the project involves new construction or renovation, complete the Construction Characteristics (Table C) and Onsite and Offsite Costs (Table D) worksheets in the CON Table Package.

B. Discuss the availability and adequacy of utilities (water, electricity, sewage, natural gas, etc.) for the proposed project, and the steps necessary to obtain utilities. Please either provide documentation that adequate utilities are available or explain the plan(s) and anticipated timeframe(s) to obtain them.

Central Chilled Water System
Generation – Additional chilled water generation capacity is required to support the New Inpatient Building (NIB). The existing peak cooling load of the campus is estimated to be 3,740 tons. The addition of the NIB will increase the peak cooling load to approximately 5,140 tons. At a minimum one additional chiller is required for sufficient redundant capacity (in the event of an existing chiller outage). The new nominal chiller capacity will be 2,600 tons with associated chilled water pump, condenser water pump and cooling tower.
Distribution – The existing chilled water distribution system is adequately sized to support the addition of the NIB. New 12" diameter supply and return piping will be extended from existing chilled water Vault No. 1 near the intersection of Nathan Shock Drive and Bioscience Drive.

Central Steam System
Generation – The existing steam generation system located in the Power Plant has sufficient capacity to serve the NIB.
Distribution - The existing steam distribution system is adequately sized to support the addition of the NIB. New 8" diameter steam and 3" diameter condensate return piping will to be extended from an existing steam vault near the intersection of Nathan Shock Drive and Bioscience Drive.

Electrical System
Distribution - The existing electrical system is adequately sized to support the addition of the NIB. The buildings 13.2kV power will be provided from the existing campus distribution loop. New cable and duct bank will be extended from an existing manhole near the building footprint.

Domestic Water System
Distribution - The existing domestic water distribution system is adequately sized to support the addition of the NIB. Domestic water will be provided via a 12" water line. This water line shall be tee tapped into the existing 12" main near the intersection of Bayview Blvd and Hopkins Bayview Circle.

Sanitary Collection System
Collection - The existing sanitary system is adequately sized to support the addition of the NIB. The sanitary connection will be an 8" line and will connect to an existing 8" sanitary pipe that currently serves the same physical area. The project will also install a new 10" sanitary line between two existing manholes to the west of Bayview Blvd to increase the capacity in that area and support the additional flows resulting from the new building.

Storm Water System
Collection - The existing storm water system is adequately sized to support the addition of the NIB. There will be two storm water connections. The first is a 15" drain line and will connect to an existing manhole in Nathan Shock Drive. The second is a 15" drain line connected to an existing manhole in Bayview Blvd. Both connections will support the NIB, as well as the proposed bioretention facilities related to each line and the surrounding site.

Applicant Response:

Please see Exhibit 1C for Table C and Exhibit 1D for Table D.

PART II - PROJECT BUDGET

Complete the Project Budget (Table E) worksheet in the CON Table Package.

Note: Applicant must include a list of all assumptions and specify what is included in all costs, as well the source of cost estimates and the manner in which all cost estimates are derived.

Applicant Response:

Please see Exhibit 1E for Table E.

PART III - APPLICANT HISTORY, STATEMENT OF RESPONSIBILITY, AUTHORIZATION AND RELEASE OF INFORMATION, AND SIGNATURE

1. List names and addresses of all owners and individuals responsible for the proposed project.

   Richard G. Bennett, M.D.
   President
   Johns Hopkins Bayview Medical Center
   4940 Eastern Avenue
   Baltimore, Maryland 21224

2. Is any applicant, owner, or responsible person listed above now involved, or has any such person ever been involved, in the ownership, development, or management of another health care facility? If yes, provide a listing of each such facility, including facility name, address, the relationship(s), and dates of involvement.

   Past:
   Haven Nursing Home, Inc. (Owner) – 3939 Penhurst Avenue, Baltimore, MD 21215, (1995 – 2013)
   Penhurst Healthcare, Inc. (DBA Kenesaw Nursing Home), (Owner) 2601 Roslyn Ave., Baltimore, MD 21216 (1997 -2003)
   Broadmead Lifecare Community (Board Member), 13801 York Rd., Cockeysville, MD 21030 (1988 – 1996)
   Deaton Specialty Hospital and Home (Board Member), 611 S. Charles St, 21230 (1994 - 1996)
   Keswick Multi-Center (Board Member), 700 W. 40th St., Baltimore, MD 21209 (2000 – 2012

3. In the last 5 years, has the Maryland license or certification of the applicant facility, or the license or certification from any state or the District of Columbia of any of the facilities listed in response to Question 2, above, ever been suspended or revoked, or been subject to any disciplinary action (such as a ban on admissions) ? If yes, provide a written explanation of the circumstances, including the date(s) of the actions and the disposition. If the applicant(s), owners, or individuals responsible for implementation of the Project were not involved with the facility at the time a suspension, revocation, or disciplinary action took place, indicate in the explanation.

   No

4. Other than the licensure or certification actions described in the response to Question 3, above, has any facility with which any applicant is involved, or has any facility with which any applicant has in the past been involved (listed in response to Question 2, above) ever received inquiries from a federal or any state authority, the Joint Commission, or other regulatory body regarding possible non-compliance with Maryland, another state, federal, or Joint Commission requirements for the provision of, the quality of, or the payment for health care services that have resulted in actions leading to the possibility of penalties, admission bans, probationary status, or other sanctions at the applicant facility or at any facility listed in response to Question 2? If yes, provide, for each such instance, copies of any settlement reached, proposed findings or final findings of non-compliance and related documentation

including reports of non-compliance, responses of the facility, and any final disposition or conclusions reached by the applicable authority.

No

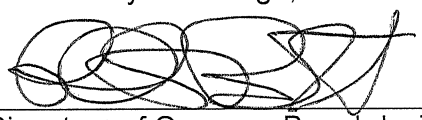
5. Has any applicant, owner, or responsible individual listed in response to Question 1, above, ever pled guilty to, received any type of diversionary disposition, or been convicted of a criminal offense in any way connected with the ownership, development, or management of the applicant facility or any of the health care facilities listed in response to Question 2, above? If yes, provide a written explanation of the circumstances, including as applicable the court, the date(s) of conviction(s), diversionary disposition(s) of any type, or guilty plea(s).

No

One or more persons shall be officially authorized in writing by the applicant to sign for and act for the applicant for the project which is the subject of this application. Copies of this authorization shall be attached to the application. The undersigned is the owner(s), or Board-designated official of the applicant regarding the project proposed in the application.

I hereby declare and affirm under the penalties of perjury that the facts stated in this application and its attachments are true and correct to the best of my knowledge, information, and belief.

02/02/2018
Date


Signature of Owner or Board-designated Official

President, Johns Hopkins Bayview Medical Center
Position/Title

Richard G. Bennett, M.D.
Printed Name

PART IV - CONSISTENCY WITH GENERAL REVIEW CRITERIA AT COMAR 10.24.01.08G(3):

INSTRUCTION: Each applicant must respond to all criteria included in COMAR 0.24.01.08G(3), listed below.

An application for a Certificate of Need shall be evaluated according to all relevant State Health Plan standards and other review criteria.

If a particular standard or criteria is covered in the response to a previous standard or criteria, the applicant may cite the specific location of those discussions in order to avoid duplication. When doing so, the applicant should ensure that the previous material directly pertains to the requirement and the directions included in this application form. Incomplete responses to any requirement will result in an information request from Commission Staff to ensure adequacy of the response, which will prolong the application's review period.

10.24.01.08G(3)(a). <u>The State Health Plan</u>.

To respond adequately to this criterion, the applicant must address each applicable standard from each chapter of the State Health Plan that governs the services being proposed or affected, and provide a direct, concise response explaining the project's consistency with each standard. <u>In cases where demonstrating compliance with a standard requires the provision of specific documentation, documentation must be included as a part of the application.</u>

Every acute care hospital applicant must address the standards in **COMAR 10.24.10: Acute Care Hospital Services**. A Microsoft Word version is available for the applicant's convenience on the Commission's website. Use of the *CON Project Review Checklist for Acute Care Hospitals General Standards* is encouraged. This document can be provided by staff.

Other State Health Plan chapters that may apply to a project proposed by an acute care hospital are listed in the table below. A pre-application conference will be scheduled by Commission Staff to cover this and other topics. It is highly advisable to discuss with Staff which State Health Plan chapters and standards will apply to a proposed project before application submission. Applicants are encouraged to contact Staff with any questions regarding an application.

COMAR 10.24.10 ACUTE CARE CHAPTER
.04A. GENERAL STANDARDS

The following general standards encompass Commission expectations for the delivery of acute care services by all hospitals in Maryland. Each hospital that seeks a Certificate of Need for a project covered by this Chapter of the State Health Plan must address and document its compliance with each of the following general standards as part of its Certificate of Need application. Each hospital that seeks a Certificate of Need exemption for a project covered by this Chapter of the State Health Plan must address and demonstrate consistency with each of the following general standards as part of its exemption request.

Standard .04A (1) – Information Regarding Charges.

Information regarding hospital charges shall be available to the public. After July 1, 2010, each hospital shall have a written policy for the provision of information to the public concerning charges for its services. At a minimum, this policy shall include:

(a) Maintenance of a Representative List of Services and Charges that is readily available to the public in written form at the hospital and on the hospital's internet web site;
(b) Procedures for promptly responding to individual requests for current charges for specific services/procedures; and
(c) Requirements for staff training to ensure that inquiries regarding charges for its services are appropriately handled.

Applicant Response:

A copy of JHBMC's policy regarding the provision of information about charges is attached as Exhibit 6. JHBMC provides information about estimated charges on our website:
http://www.hopkinsmedicine.org/johns_hopkins_bayview/planning_your_visit/billing_insurance/estimated_charges.html

These estimates of charges for frequently occurring services and procedures are updated quarterly, and copies are available upon request from financial counseling staff. Patients with inquiries related to hospital charges prior to or on the day of service can contact Financial Counseling for a copy of the list of representative charges, or request current charges for specific service/procedure(s). A copy of the estimated charges is also mailed upon request.

Staff is trained regularly to respond appropriately to the requests for information regarding charges and is aware of the location of the information. Financial staff is educated about the criteria to build the charge report and how to update the list of representative charges quarterly on our website.

Standard .04A(2) – <u>Charity Care Policy</u>.

Each hospital shall have a written policy for the provision of charity care for indigent patients to ensure access to services regardless of an individual's ability to pay.

(a) The policy shall provide:

(i) Determination of Probable Eligibility. Within two business days following a patient's request for charity care services, application for medical assistance, or both, the hospital must make a determination of probable eligibility.

(ii) Minimum Required Notice of Charity Care Policy.

1. **Public notice of information regarding the hospital's charity care policy shall be distributed through methods designed to best reach the target population and in a format understandable by the target population on an annual basis;**
2. **Notices regarding the hospital's charity care policy shall be posted in the admissions office, business office, and emergency department areas within the hospital; and**
3. **Individual notice regarding the hospital's charity care policy shall be provided at the time of preadmission or admission to each person who seeks services in the hospital.**

Applicant Response:

JHBMC provides quality care to patients regardless of their ability to pay. The charity care policy is attached as Exhibit 7.

(a)(i) Applicants are given an indication of probable eligibility at least within two business days of their inquiry, but usually the same day: "All hospital applications will be processed within two business days and a determination will be made as to probable eligibility." Page 3 of 19 of the Financial Assistance Policy, number 3a.

(a)(ii)(1-3) Minimum notice regarding the hospital's charity care policy and procedures is required by the JHBMC Financial Assistance Policy:

> "JHHS hospitals will publish the availability of Financial Assistance on a yearly basis in their local newspapers, and will post notices of availability at patient registration sites, Admissions/Business Office and Billing Office, and at the emergency department within each facility. Notice of availability will be posted on each hospital website, will be mentioned during oral communications, and will be sent to patients on patient bills. A Patient Billing and Financial Assistance Information Sheet will be provided to inpatients before discharge and will be available to all patients upon request. Page 1 of 19 of the Financial Assistance

Policy, “Purpose”, paragraph 3.

JHBMC complies with the policy as follows:

- JHBMC’s financial assistance policy is posted on the hospital website: http://www.hopkinsmedicine.org/patient_care/pay_bill/assistance_policies.html
- Notice of the Hospital’s policy on charity care and financial assistance is published in the Baltimore Sun on an annual basis and was last published Saturday, May 6, 2017. A copy of the publication is included as Exhibit 8.
- JHBMC provides each patient registered for emergency care, same day care, or inpatient care a copy of our Financial Assistance Information Sheet (Exhibit 9).
- Signs are also posted in English and Spanish explaining the availability of financial assistance and providing contact information.
- The financial assistance application, a copy of which is included as Exhibit 10, is given to every self-pay patient with instructions on how to apply, and contact information is available on the web link noted above. The same information is provided to all other patients upon request. This information is also available in Spanish.
- Financial Counselors and Social Workers are trained to answer patient questions regarding financial assistance and linkage to other community assistance resources prior to discharge.
- Registration staff is trained to answer questions regarding financial assistance and who to contact with billing questions or other financial questions.
- Patient Financial Services staff is also trained to answer questions and provide information to patients regarding financial assistance and billing.

(b) A hospital with a level of charity care, defined as the percentage of total operating expenses that falls within the bottom quartile of all hospitals, as reported in the most recent Health Service Cost Review Commission Community Benefit Report, shall demonstrate that its level of charity care is appropriate to the needs of its service area population.

Applicant Response:

According to the FY16 Health Services Cost Review Commission (HSCRC) Community Benefit Financial Report, JHBMC's charity care as a percent of total operating expenses was 2.13%. JHBMC ranks 20th out of 52 Maryland non-profit hospitals, placing JHBMC in the second quartile.

Standard .04A (3) – <u>Quality of Care.</u>

An acute care hospital shall provide high quality care.
(a) Each hospital shall document that it is:
(i) Licensed, in good standing, by the Maryland Department of Health and Mental Hygiene;
(ii) Accredited by the Joint Commission; and
(iii) In compliance with the conditions of participation of the Medicare and Medicaid programs.

Applicant Response:

JHBMC complies with all mandated federal, state, and local health and safety regulations and applicable state certification requirements. JHBMC is fully accredited by Joint Commission and in compliance with Medicare and Medicaid programs.

A copy of the most recent Joint Commission accreditation and DHMH license is attached as Exhibit 11.

(b) A hospital with a measure value for a Quality Measure included in the most recent update of the Maryland Hospital Performance Evaluation Guide that falls within the bottom quartile of all hospitals' reported performance measured for that Quality Measure and also falls below a 90% level of compliance with the Quality Measure, shall document each action it is taking to improve performance for that Quality Measure.

Applicant Response:

Johns Hopkins Bayview Medical Center (JHBMC) has identified, collects, monitors and acts upon key quality performance indicators on a monthly basis. These measures include outcome measures; such as mortality, readmission, complication rate, length of stay and cost; serious safety events identified through our participation in the CMS Partnership for Patients Program; through review of our Maryland Hospital Acquired Conditions, the AHRQ Patient Safety Indicators as well as through use of our own internal incident reporting systems; core measures data; HCAHPS results; and Employee Safety Reports.

In looking at the Hospital Quality Measures that are available to us, we noted that our performance was better than average for 19 of the measures, average for 23 of the measures, and below average for 22 of the measures. For those measures which are below average, some significant improvements have already been made.

Please Exhibit 12 for additional information.

COMAR 10.24.10 ACUTE CARE CHAPTER
.04B. PROJECT REVIEW STANDARDS

Standard .04B(1) – Geographic Accessibility.

A new acute care general hospital or an acute care general hospital being replaced on a new site shall be located to optimize accessibility in terms of travel time for its likely service area population. Optimal travel time for general medical/surgical, intensive/critical care and pediatric services shall be within 30 minutes under normal driving conditions for 90 percent of the population in its likely service area.

Applicant Response:

Standard does not apply.

Standard .04B(2) – <u>Identification of Bed Need and Addition of Beds.</u>

Only medical/surgical/gynecological/addictions ("MSGA") beds and pediatric beds identified as needed and/or currently licensed shall be developed at acute care general hospitals.

(a) Minimum and maximum need for MSGA and pediatric beds are determined using the need projection methodologies in Regulation .05 of this Chapter.

(b) Projected need for trauma unit, intensive care unit, critical care unit, progressive care unit, and care for AIDS patients is included in the MSGA need projection.

(c) Additional MSGA or pediatric beds may be developed or put into operation only if:

(i) The proposed additional beds will not cause the total bed capacity of the hospital to exceed the most recent annual calculation of licensed bed capacity for the hospital made pursuant to Health-General §19-307.2; or

(ii) The proposed additional beds do not exceed the minimum jurisdictional bed need projection adopted by the Commission and calculated using the bed need projection methodology in Regulation .05 of this Chapter.

(iii) The proposed additional beds exceed the minimum jurisdictional bed need projection but do not exceed the maximum jurisdictional bed need projection adopted by the Commission and calculated using the bed need projection methodology in Regulation .05 of this Chapter and the applicant can demonstrate need at the applicant hospital for bed capacity that exceeds the minimum jurisdictional bed need projection; or

(iv) The number of proposed additional MSGA or pediatric beds may be derived through application of the projection methodology, assumptions, and targets contained in Regulation .05 of this Chapter, as applied to the service area of the hospital.

Applicant Response:

(a) Yes—see below.

(b) Yes

(c) This project does not result in additional beds—there will be a net reduction in beds, therefore (i), (ii), and (iii) do not apply. Item (iv) does not apply either, in that beds are not being added. The project is consistent with the MSGA bed need calculation, shown below.

Licensed Beds Before and After the Project

JHBMC is currently licensed to operate 342 acute care beds for FY2018, including 283 MSGA beds, 22 obstetrical beds, 20 psychiatric beds, and 5 pediatric beds. JHBMC proposes to reduce the number of acute care beds at the conclusion of the project and operate 315 acute care beds: 272 MSGA beds, 18 obstetrical beds, 20 psychiatric beds, and 5 pediatric beds. JHBMC seeks to decrease MSGA bed capacity in the renovated facility by 11 MSGA beds (i.e., 283 current licensed MSGA beds to 272 in the renovated facility). This reduction is primarily the result of reductions in potentially avoidable utilization, but also the shift of inpatient discharges to outpatient observation cases. JHBMC also seeks to decrease the licensed obstetrical capacity by 4 beds.

MSGA Bed Need Calculations

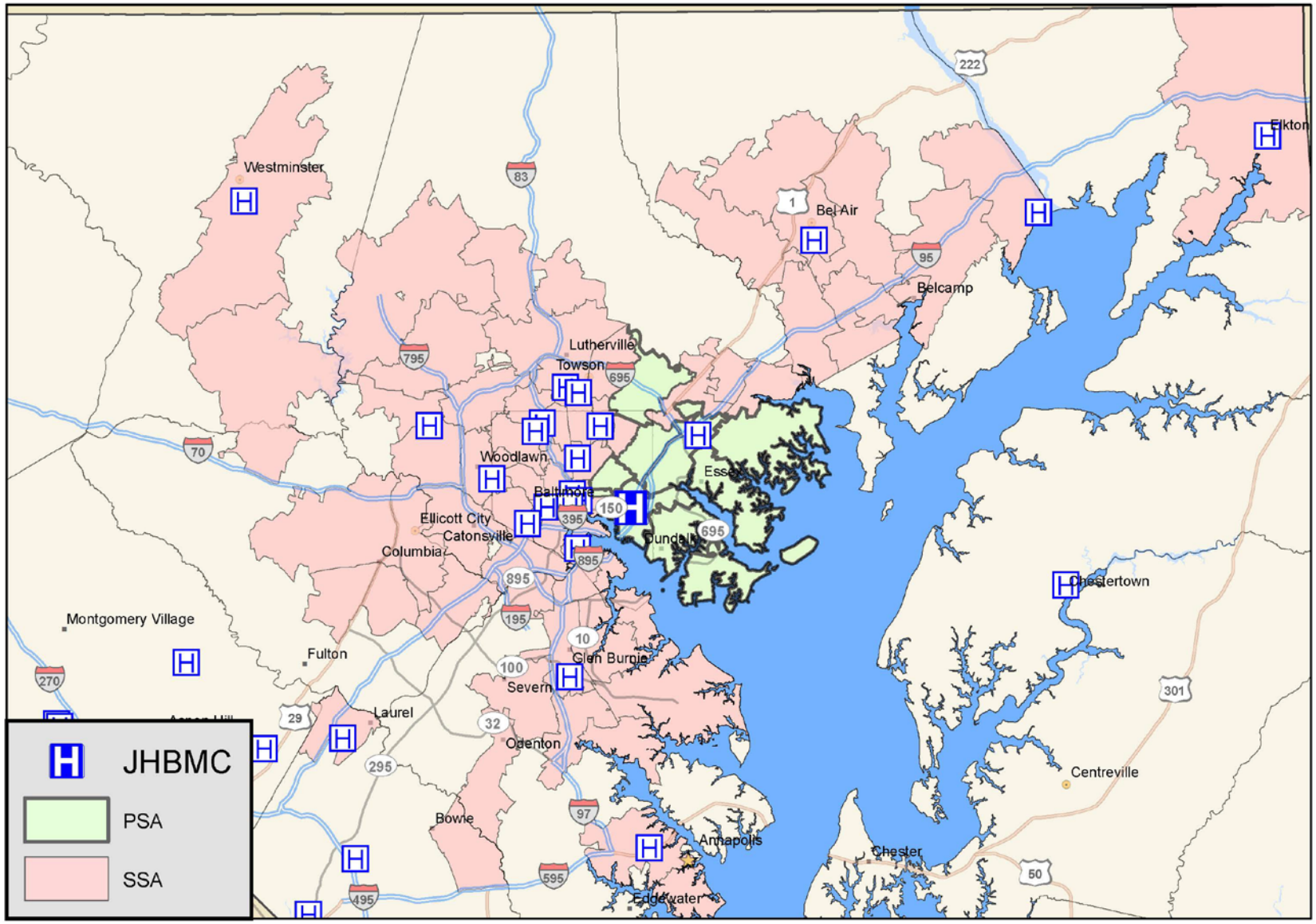
The applicant utilized CY 2016 Health Services Cost Review Commission (“HSCRC”) inpatient data to project the need for MSGA beds. The primary (zip codes contributing the top 60% of discharges) and the secondary (zip codes contributing the next 25% of discharges) MSGA Service Areas are detailed and mapped below:

JHBMC MSGA Primary and Secondary Service Area
Discharges per Zip Code
Discharges defined by Age 15+, and APR DRG
CY2016

Zip Code	Total Discharges	Cumulative %
21222	3,823	22.1%
21224	2,445	36.2%
21206	786	40.8%
21221	762	45.2%
21213	568	48.4%
21219	542	51.6%
21205	462	54.2%
21220	417	56.6%
21234	287	58.3%
21237	268	59.9%
21236	243	61.3%
21218	205	62.4%
21231	205	63.6%
21215	154	64.5%
21202	151	65.4%
21217	142	66.2%
21223	125	66.9%
21225	109	67.6%
21207	108	68.2%
21214	102	68.8%
21216	100	69.4%
21229	98	69.9%
21040	91	70.4%
21122	91	71.0%
21212	84	71.5%
21230	80	71.9%
21239	80	72.4%
21014	75	72.8%
21061	75	73.2%
21001	74	73.7%
21085	72	74.1%
21009	64	74.5%
21208	63	74.8%
21227	63	75.2%
21015	62	75.5%
21078	61	75.9%
21128	61	76.2%
21228	60	76.6%
21044	53	76.9%
21201	53	77.2%
21117	52	77.5%
21060	51	77.8%
21042	47	78.1%
21144	47	78.3%
21045	42	78.6%
21093	39	78.8%
21157	39	79.0%
21050	38	79.3%
21030	37	79.5%

21043	37	79.7%
21133	36	79.9%
21784	36	80.1%
21211	35	80.3%
20707	32	80.5%
21244	32	80.7%
21204	31	80.9%
21146	30	81.0%
21209	30	81.2%
21047	29	81.4%
21162	29	81.5%
21287	29	81.7%
20715	27	81.9%
21075	27	82.0%
21090	27	82.2%
21210	27	82.3%
21401	26	82.5%
21113	25	82.6%
21286	24	82.8%
21403	24	82.9%
21017	23	83.0%
21076	23	83.2%
21136	23	83.3%
21226	23	83.4%
21921	23	83.6%
21084	22	83.7%
21108	22	83.8%
21502	21	83.9%
21702	21	84.1%
21740	20	84.2%
20904	19	84.3%
21087	19	84.4%
21771	19	84.5%
21801	19	84.6%
21037	18	84.7%
21046	18	84.8%
21052	18	84.9%
20706	17	85.0%
Subtotal	**14,717**	
All Other	**2,592**	
Grand Total	**17,309**	

JHBMC MSGA Total Service Area



The aggregate of both the Primary and Secondary MSGA Service Areas will be referred to as JHBMC's MSGA Service Area. The applicant then counted the number of discharges by age cohort (15-64, 65-74, and 75+) by zip codes in JHBMC's MSGA Service Area at any Maryland hospital and, also, the number of discharges at JHBMC. These are shown in Exhibit 13.

From these data, the applicant calculated bed need using the following methodology:

1) For each zip code, JHBMC used population data from Truven Health Analytics for 2012, 2017 and 2022. JHBMC then calculated the compound average growth rate ("CAGR") for the population age 15+ for the difference between 2012 and 2017 to calculate the 2016 population. JHBMC also calculated the CAGR for the difference between 2017 and 2022. JHBMC used this CAGR to calculate the projected population in 2025.

2) The applicant calculated the 2016 use rates that the ZIP Code populations experienced to all hospitals by age cohort (15-64, 65-74, and 75+) by dividing the number of discharges in 2016 by the 2016 population.

3) The applicant applied these use rates to the 2025 population by zip code and age cohort to project the number of discharges from each zip code in 2025.

4) The applicant summed the total number of projected 2025 discharges of all of the age cohorts by ZIP Code.

5) The applicant applied JHBMC's 2016 market share that it had in each zip code to the adjusted 2025 discharges to project the number of 2025 discharges that will occur at JHBMC*.* Please see Exhibit 14.

6) Since these zip codes comprise JHBMC's Primary and Secondary Service Areas, the applicant adjusted the projected discharges to account for out of Service Area discharges by adding the current CY2016 out of service area discharges. This resulted in a subtotal of all JHBMC projected MSGA discharges.

7) The applicant then applied a reduction in discharges due to population health efforts to reduce potentially avoidable discharges and the shift of inpatient discharges to outpatient observation cases. The applicant projects that there will be a 17% reduction in discharges by 2025 due to the aforementioned population health efforts and shift. The reduction based on this resulted in the "Total Adjusted 2025 Discharges".

8) JHBMC assumes an MSGA ALOS ("ALOS") of 5.0 in 2025.

9) The applicant applied the projected ALOS to the Total Adjusted 2025 Discharges to project the 2025 Patient Days.

10) The applicant divided the total number of 2025 projected patient days by 365 to obtain the Average Daily Census ("ADC"), which resulted in an MSGA ADC of 219.

11) The applicant divided the ADC by an assumed occupancy rate of 80%.

The projections in Exhibit 14 result in a projected need for 274 MSGA beds. JHBMC is proposing 272 MSGA beds.

MSGA Discharges: JHBMC MSGA Service Area Summary Projected Volume

MSGA Service Area 2025 Discharges	16,610
Out of Area 2025 Discharges	2,592
Total 2025 Discharges	19,202
Less IP Volume Decline to OP Shift and Reduced PAU	-3,182
Total Adjusted 2025 Discharges	16,020

Bed Need Calculation

Total 2025 Discharges	16,020
2016 MSGA ALOS	4.6
2025 MSGA ALOS	5
2025 Patient Days	80,100
ADC	219
% Occupancy	80%
Beds Needed in 2025	274

Standard .04B(3) – <u>Minimum Average Daily Census for Establishment of a Pediatric Unit.</u>

An acute care general hospital may establish a new pediatric service only if the projected average daily census of pediatric patients to be served by the hospital is at least five patients, unless:

(a) The hospital is located more than 30 minutes travel time under normal driving conditions from a hospital with a pediatric unit; or

(b) The hospital is the sole provider of acute care general hospital services in its jurisdiction.

Applicant Response:

Standard does not apply.

Standard .04B(4) – <u>Adverse Impact.</u>

A capital project undertaken by a hospital shall not have an unwarranted adverse impact on hospital charges, availability of services, or access to services. The Commission will grant a Certificate of Need only if the hospital documents the following:

(a) If the hospital is seeking an increase in rates from the Health Services Cost Review Commission to account for the increase in capital costs associated with the proposed project and the hospital has a fully-adjusted Charge Per Case that exceeds the fully adjusted average Charge Per Case for its peer group, the hospital must document that its Debt to Capitalization ratio is below the average ratio for its peer group. In addition, if the project involves replacement of physical plant assets, the hospital must document that the age of the physical plant assets being replaced exceed the Average Age of Plant for its peer group or otherwise demonstrate why the physical plant assets require replacement in order to achieve the primary objectives of the project; and

(b) If the project reduces the potential availability or accessibility of a facility or service by eliminating, downsizing, or otherwise modifying a facility or service, the applicant shall document that each proposed change will not inappropriately diminish, for the population in the primary service area, the availability or accessibility to care, including access for the indigent and/or uninsured.

Applicant Response:

(a)

Johns Hopkins Bayview Medical Center (JHBMC) plans to pursue a partial rate application or Global Budget Revenue (GBR) modification with the Health Services Cost Review Commission (HSCRC) to fund the incremental depreciation and interest costs of the project. This will result in a projected 5.26% increase in regulated revenue as demonstrated below:

Depreciation Cost	$	17,309,000	A
Interest Cost		13,000,000	B
Total Capital Cost	$	30,309,000	C=A + B
JHBMC FY18 Mark-Up		1.1594	D
Adjusted Annual Depreciation	$	35,140,256	E=C*D
FY2018 Approved GBR	$	667,642,346	F
% Increase in FY18 GBR		5.26%	G=E/F

Based on FY2017 approved unit rates and actual unit volumes, JHBMC's unit rates are approximately 20.2% below its Inter-Hospital Cost Comparison (ICC) peer group

average. After adjusting rates to reflect 100% of projected depreciation and interest costs after markup ($35,140,256), JHBMC's unit rates are approximately 15.6% below the peer group average. See the table below.

Johns Hopkins Bayview Medical Center
Comparison of Hospital Charges to Peer Group

Johns Hopkins Bayview Medical FY2017 Pro-Forma Revenue			Approved Rates Compared to Peer Group		Capital-Adjusted Rates Compared to Peer Group	
FY2017 Pro-Forma Revenue [1]	FY2017 Revenue at Capital Adjusted Rates[2]	FY17 Revenue at Peer Group Average Rates [3]	Over/(Under) Average Rates	Percent Variance	Over/(Under) Average Rates	Percent Variance
$610,192	$645,332	$764,517	$(154,325)	-20.2%	$(119,185)	-15.6%

(1) Calculated as FY2017 HSCRC approved unit rates x FY2017 actual unit volume
(2) Capital-adjusted rates calculated by increasing the FY2017 Pro-Forma Revenue by $35,140,256
(3) Calculated as average FY2017 ICC peer group unit rates x JHBMC FY2017 actual unit volume. ICC peer group hospitals include: Bon Secours Hospital, Harbor Hospital Center, Johns Hopkins Bayview Medical Center, Mercy Medical Center, Prince Georges Hospital, Sinai Hospital, University of Maryland Medical Center Midtown, Union Memorial Hospital

Given JHBMC's relative unit rates and the funding mechanisms within the GBR system, JHBMC expects to demonstrate it can maintain a reasonable charge structure including the requested funding for incremental capital expenditures.

As of the end of fiscal year 2017, JHBMC's average age of plant was 10.6 years (which benefits from several major medical equipment purchases in recent years having shorter useful lives, and not investments in building improvements). Standard and Poor's rating service reports the median ratio for hospitals for calendar year 2016 (the latest information available) was a similar 10.6 years. However, adjusted only to include buildings and land improvements, JHBMC's average age of plant ratio increases to 16.1 years. JHBMC's last major inpatient clinical building was completed in 1994. By the time of the expected opening of the New Inpatient Building, it will be nearly 30 years old. In addition, the Medical Center continues to utilize clinical space in buildings dating back to the 1930s. Recognizing that JHBMC's existing facility will continue to be used for decades, the maintenance, upgrading and renovations of all aspects of the facility have been an ongoing effort. However, as documented in the Need, Cost Effectiveness, and Availability of More Cost Effective Alternatives sections of this CON application, it is impractical to upgrade the current facility to achieve contemporary health care building standards given the limits in the current structural grid and other space deficiencies.

(b) Standard does not apply.

Standard .04B(5) – <u>Cost-Effectiveness.</u>

A proposed hospital capital project should represent the most cost effective approach to meeting the needs that the project seeks to address.

(a) To demonstrate cost effectiveness, an applicant shall identify each primary objective of its proposed project and shall identify at least two alternative approaches that it considered for achieving these primary objectives. For each approach, the hospital must:

(i) To the extent possible, quantify the level of effectiveness of each alternative in achieving each primary objective;

(ii) Detail the capital and operational cost estimates and projections developed by the hospital for each alternative; and

(iii) Explain the basis for choosing the proposed project and rejecting alternative approaches to achieving the project's objectives.

Applicant Response:

The proposed NIB project represents the most cost-effective approach to meeting the needs that the project seeks to address.

For over a decade, the Senior Leadership of JHBMC and the Johns Hopkins Health System have engaged in extensive studies to determine the best use of the campus over the next several decades. The architectural and planning firm Ayers Saint Gross was hired in 2009 to develop a Master Plan for the JHBMC campus. During that study, all of the campus's existing buildings were assessed and all aspects of the overall campus were analyzed including; vehicular and pedestrian circulation, parking needs, building usage and utilities infrastructure needs for the future.

During the same period, JHBMC also engaged with the firm St. Onge Company to do an in-depth analysis of the supply chain systems at the Hospital. This analysis would help to inform the development of the Master Plan by considering the movement of materials, food, linen, supplies, pharmaceuticals, etc. throughout the buildings and the campus.

Along with the development of the Master Plan, several intensive studies have been ongoing in order to understand the programmatic needs of JHBMC and to have those needs reflected in JHBMC's 10 Year Plan. Specific consideration was also given to the clinical program needs of JHH and whether programs would be consolidated to one location to eliminate redundancy.

As a result of the entirety of this work, the JHBMC NIB Project was designed to accomplish two Primary Goals:

1.) Maximally Transition JHBMC to All Private Patient Rooms
2.) Modernize and Upgrade Outdated Facilities

In order to accomplish these primary goals, six Project Objectives were defined:

1.) Maximize Number Of Private Patient Rooms In Medical/Surgical Units
2.) Maximize Inpatient Activity In Modernized Space
3.) Maximize Number Of Critical Care Patients In Modernized Space
4.) Right-Size Inpatient Units To Accommodate Current Operational Models
5.) Maximize Opportunities For Improved Operational Efficiency And Patient Experience
6.) Optimize Materials Flow And Distribution

To accomplish these six Project Objectives, three different options were assessed:

- Option 1: Renovate in Place
- Option 2: New Construction: Smaller Footprint and Taller Building
- Option 3: New Construction: Larger Footprint and Lower Building

Option 1: Renovate in Place

Upon evaluating the ability of the Renovate in Place option to achieve the six Project Goals, it become evident that only renovating the existing hospital in place is not a viable final solution from both an implementation and budgetary perspective.
Under the best-case scenario of renovating in place, the hospital would only increase the percentage of medical and surgical private rooms from 40% to 48%. Renovations to all of the existing buildings (A, AA, Burton and FSK Pavilions) would also require substantial upgrades to the infrastructure including new roofs, upgraded or new elevators, upgraded or new mechanical, electrical and plumbing systems. The lack of available swing space would require reducing the overall bed capacity throughout the entire construction period, which would be a multiple of construction timeline for a new building. The Neurosciences and Orthopedic/Surgical inpatient units would never be able to expand given the lack of available space within the current hospital.

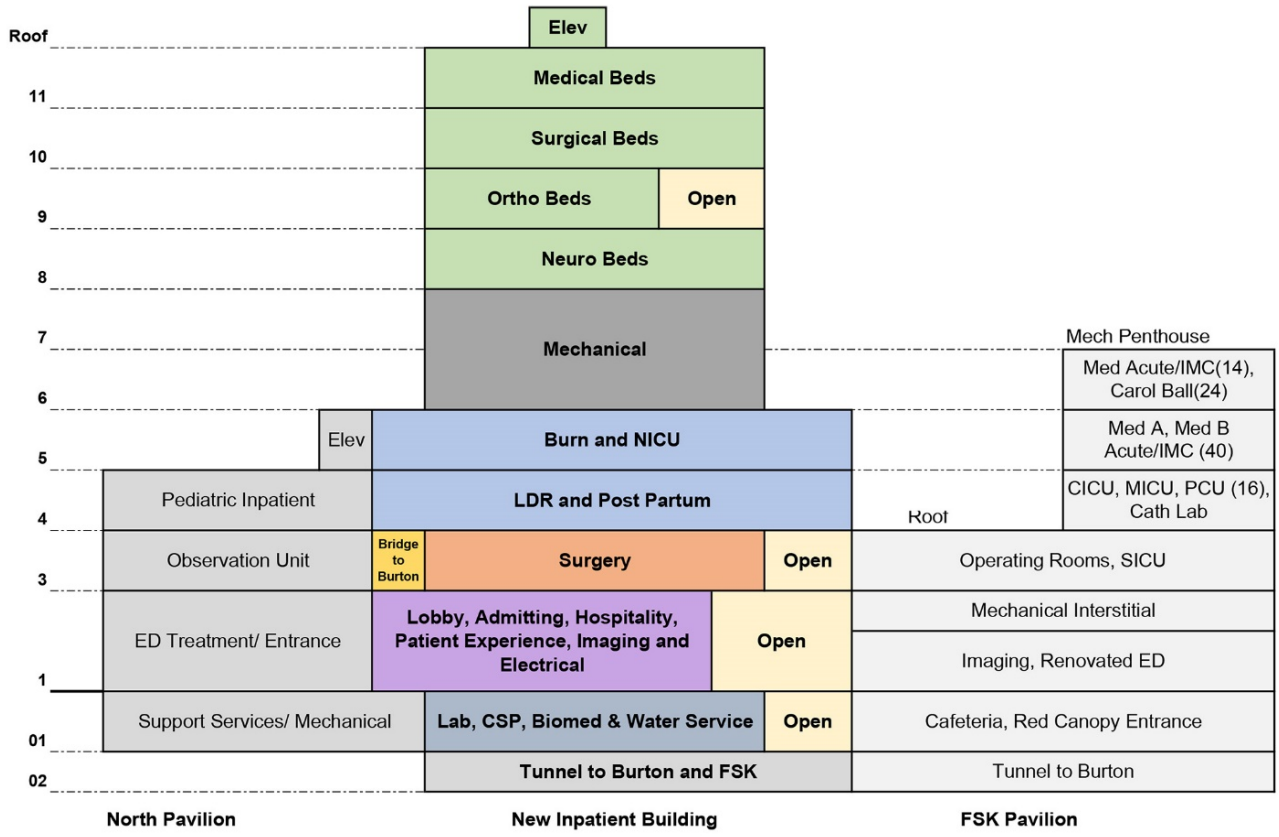
In addition to the goal of all private medical and surgical rooms, many inpatient units in FSK require additional clinical support space since operational models have changed since the building was originally constructed, in 1994. For example, to meet Joint Commission criteria, medication rooms must be enclosed and have designated counter space for medication preparation. In addition, JHHS medication safety standards require automated medication dispensing machines and one medication room for every twelve inpatient beds. These criteria cannot be met currently and it will be impossible to achieve these basic clinical support needs on existing units in the future unless inpatient rooms are used because all of the core support space on the units is already filled with required rooms and functions.

The cost of “renovating in place” was not formally estimated because it would not achieve the project objectives. Further the renovation timeline would likely be a multiple of other operations, given the excessive amount of unit-by-unit segmentation that would occur, making its level of disruption on clinical operations untenable.

Option 2: New Construction: Smaller Footprint and Taller Building

Once the JHHS and JHBMC Senior Leadership established that the most effective solution for meeting the projects objectives and fulfilling the mission of JHBMC, New Inpatient Building (“NIB”) programming and planning began. Array Architects, a firm specializing in healthcare design and architecture, was selected to do detailed programming, study potential program adjacencies and to determine the size, shape, complexity and cost of a new building that would support the JHBMC’s strategic vision moving forward. Array began a rigorous process of meetings with multi-disciplinary groups of end users, including a wide range of administrative and clinical staff. The meetings explored current and future state processes, and how to solve suboptimal operational and physical conditions, connecting the NIB to the existing FSK building in the most seamless and efficient way possible. The process also developed a solution for the decompression and reconfiguration of Materials Management and Support Services spaces on Level 01 the FSK, AA and the A buildings by relocating Central Sterile processing from FSK to the NIB. This necessary reconfiguration cannot occur without the new building.

CONCEPTUAL HIGH RISE STACK (Smaller Footprint, Taller Building)



The first NIB schematic developed (see stacking schematic below) was taller, had a smaller footprint, and a detached garage to the north west of the building. The lower floors of the building included support/logistics space (Level 01), lobby, patient support and expanded Imaging (Level 1), the OR connection to FSK (level 3), LDR + OB with a connection to the North Pavilion Pediatric floor and the Burn program + NICU on Level 5. Levels 8 through 11 were planned to be individual inpatient units. Locations of the various programs were determined by best possible adjacencies given the available areas of each level and the required square footage of the each program. In this scheme, the mechanical space was located in the middle of the building so that air would be distributed up and down, allowing shaft sizes to be minimized.

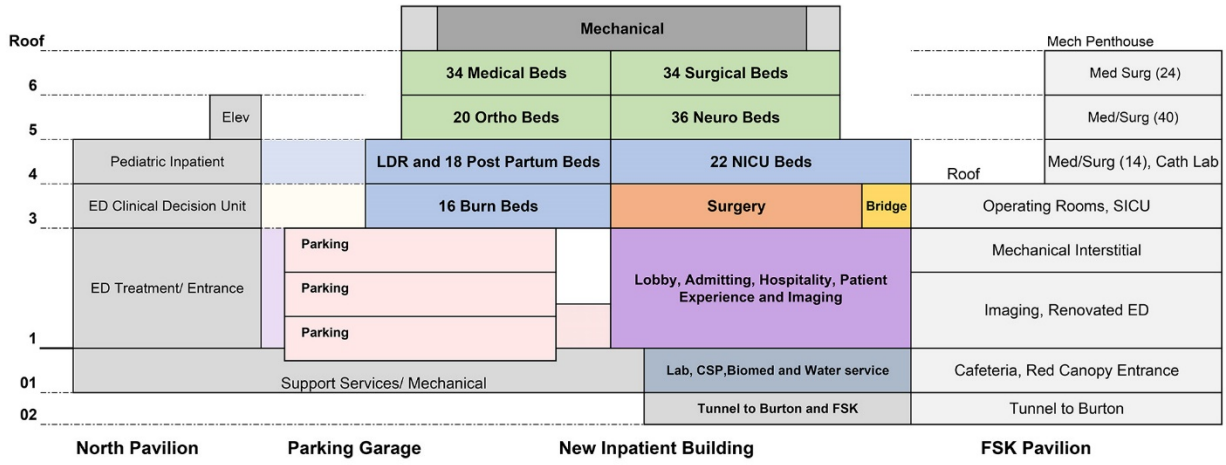
However, when assessing the ability of Option 2 to achieve the Project Objectives, various criteria were not met. First, the Option 2 design limited the number of critical care patients that could be bedded in Modernized Space to only neonatal, neurosciences, and burn. Second, it limited opportunities for operation efficiency and patient satisfaction, such as preventing the NICU and Labor & Delivery Unit from being positioned adjacent to one another, overly restricting the size of the Neurosciences unit, placing Orthopedics and the NICU next to one another, and preventing the use of an indoor connector between the building and the parking garage.

Option 3: New Construction: Larger Footprint and Lower Building

Subsequently a lower scheme with a larger footprint, but fewer stories, was developed that allowed many more optimal adjacencies to occur:

- All Labor & Delivery, Obstetrics services and the NICU are planned to be on one level.
- Neurosciences and Orthopedic units are on one level with the ability to share a rehab gym.
- The garage is partially within the building footprint on Levels 1 and 2, allowing a direct interior connection from parking garage to the building.
- Medical and Cardiac Critical Care and IMC beds on the top floor of the building are co-located for future flexibility. The SICU will be rebuilt in the FSK building, so that all critical care units are new and "state of the art".

CONCEPTUAL LOW RISE STACK



This version of the stack is what has become the basis of design for the proposed NIB. This design will allow JHBMC to move into the future having solved many of the operational and clinical challenges that need to be corrected JHBMC to serve it's patients in the most effective and efficient manner possible.

The table below, Comparison of Cost Effective Alternative Approaches, provides a detailed assessment of each option and whether it achieved, or did not achieve, each of the six Project Objectives.

Comparison of Cost Effective Alternative Approaches			
Measure	**Option 1: Renovate in Place**	**Option 2: New Construction Smaller Footprint/Taller Building**	**Option 3: New Construction Larger Footprint/ Lower Building**
Achieving Project Objectives			
1.) Maximize Number Of Private Patient Rooms In Medical/Surgical Units	**Does Not Achieve Project Objective** Maximum amount of private beds possible is only 48%.	**Achieves Project Objective** All patient rooms will be private with exception of the Chemical Dependency Unit.	**Achieves Project Objective** All patient rooms will be private with exception of the Chemical Dependency Unit.
2.) Maximize Inpatient Activity In Modernized Space	**Does Not Achieve Project Objective** Significant limitations related to unit size could not feasibly be Modernized.	**Achieves Project Objective** Design would allow for vast majority of inpatient acitivity in Modernaized Space.	**Achieves Project Objective** Design would allow for vast majority of inpatient acitivity in Modernaized Space.
3.) Maximize Number Of Critical Care Patients In Modernized Space	**Does Not Achieve Project Objective** Lack of swing space prohibits ICUs from being renovated without major disruption. Suboptimal room sizes cannot be improved.	**Does Not Achieve Project Objective** Only the Neonatal, Neuro, and Burn Critical Care beds would be relocated to Modernized Space.	**Achieves Project Objective** All Critical Care beds will be relocated to Modernaized Space with exception of the SICU, which will be built to meet current FGI standards, in space currently occupied by the Burn ICU.
4.) Right-Size Inpatient Units To Accommodate Current Operational Models	**Does Not Achieve Project Objective** Existing inpatient units are not large enough to right-size without reducing bed count.	**Achieves Project Objective** Once inpatient beds are relocated, vacated units can be used as swing space for construction and surplus patient rooms can be taken off line and used for required clinical support space.	**Achieves Project Objective** Once inpatient beds are relocated, vacated units can be used as swing space for construction and surplus patient rooms can be taken off line and used for required clinical support space.
5.) Maximize Opportunities For Improved Operational Efficiency And Patient Experience	**Does Not Achieve Project Objective** Lack of swing and surplus space prohibits changes that would help to achieve this goal.	**Does Not Achieve Project Objective** With less available area on each level, certain adjacencies would not be possible to achieve: • NICU and LDR suite adjacency not possible. • Neuro barely fits on single level and Ortho adjacent to the NICU. • Parking garage has separate structure, making indoor connection not feasible.	**Achieves Project Objective** With the larger floor areas many optimal adjacencies can occur: • LDR suite, Obstetrics, and NICU adjacent. • Neuro, Ortho, and shared rehab gym adjacent. • Parking garage indoor connection to lobby for increased patient/visitor experience and comfort.
6.) Optimize Materials Flow And Distribution	**Does Not Achieve Project Objective** The inability to swing any functions into new space prohibits the reconfiguration of the Level 01 Loading Dock area to improve materials flow.	**Does Not Achieve Project Objective** Limited improvements to the Level 01 materials management space are possible.	**Achieves Project Objective** More materials management space can be relocated; additional vacated space allows a comprehensive plan to reorganize the logistics and materials distribution on Level 01 to be executed.
Estimated Project Cost	N/A	$489M	$489M
Estimated Project Timeline	N/A	80 months	80 months
Disruption of Services During Construction and Renovation	**Not Operationally Tenable**	**New construction on adjacent site drastically reduces disruption to current services.**	**New construction on adjacent site drastically reduces disruption to current services.**

(b) An applicant proposing a project involving limited objectives, including, but not limited to, the introduction of a new single service, the expansion of capacity for a single service, or a project limited to renovation of an existing facility for purposes of modernization, may address the cost-effectiveness of the project without undertaking the analysis outlined in (a) above, by demonstrating that there is only one practical approach to achieving the project's objectives.

Applicant Response:

Standard does not apply.

(c) An applicant proposing establishment of a new hospital or relocation of an existing hospital to a new site that is not within a Priority Funding Area as defined under Title 5, Subtitle 7B of the State Finance and Procurement Article of the Annotated Code of Maryland shall demonstrate:

(i) That it has considered, at a minimum, an alternative project site located within a Priority Funding Area that provides the most optimal geographic accessibility to the population in its likely service area, as defined in Project Review Standard (1);

(ii) That it has quantified, to the extent possible, the level of effectiveness, in terms of achieving primary project objectives, of implementing the proposed project at each alternative project site and at the proposed project site;

(iii) That it has detailed the capital and operational costs associated with implementing the project at each alternative project site and at the proposed project site, with a full accounting of the cost associated with transportation system and other public utility infrastructure costs; and

(iv) That the proposed project site is superior, in terms of cost-effectiveness, to the alternative project site or sites located within a Priority Funding Area.

Applicant Response:

Standard does not apply.

Standard .04B (6) – <u>Burden of Proof Regarding Need.</u>

> **A hospital project shall be approved only if there is demonstrable need. The burden of demonstrating need for a service not covered by Regulation .05 of this Chapter or by another chapter of the State Health Plan, including a service for which need is not separately projected, rests with the applicant.**

Applicant Response:

Please see response to “10.24.01.08G(3)(b). Need.” for applicable need analysis.

Standard .04B(7) – <u>Construction Cost of Hospital Space.</u>

The proposed cost of a hospital construction project shall be reasonable and consistent with current industry cost experience in Maryland. The projected cost per square foot of a hospital construction project or renovation project shall be compared to the benchmark cost of good quality Class A hospital construction given in the Marshall Valuation Service® guide, updated using Marshall Valuation Service® update multipliers, and adjusted as shown in the Marshall Valuation Service® guide as necessary for site terrain, number of building levels, geographic locality, and other listed factors. If the projected cost per square foot exceeds the Marshall Valuation Service® benchmark cost, any rate increase proposed by the hospital related to the capital cost of the project shall not include the amount of the projected construction cost that exceeds the Marshall Valuation Service® benchmark and those portions of the contingency allowance, inflation allowance, and capitalized construction interest expenditure that are based on the excess construction cost.

Applicant Response:

The JH-BMC project includes both new construction and renovation. Each will be presented separately. The following compares the project costs to the Marshall Valuation Service ("MVS") benchmark for new construction.

I. New Construction
Marshall Valuation Service
Valuation Benchmark
Hospital Basements

Type		Hospital
Construction Quality/Class		Good/A
Stories		2
Perimeter		860
Average Floor to Floor Height		15.1
Square Feet		57,159
f.1	Average floor Area	28,580
A. Base Costs		
	Basic Structure	$162.00
	Elimination of HVAC cost for adjustment	0
	HVAC Add-on for Mild Climate	0
	HVAC Add-on for Extreme Climate	0
Total Base Cost		$162.00
Adjustment for Departmental Differential Cost Factors		1.18

Adjusted Total Base Cost		$191.37
B. Additions		
	Elevator (If not in base)	$0.00
	Other	$0.00
Subtotal		$0.00
Total		$191.37
C. Multipliers		
Perimeter Multiplier		0.92404899
	Product	$176.83
Height Multiplier		1.04
	Product	$184.38
Multi-story Multiplier		1.000
	Product	$184.38
D. Sprinklers		
	Sprinkler Amount	$3.31
Subtotal		$187.70
E. Update/Location Multipliers		
Update Multiplier		1.02
	Product	$191.45
Location Multiplier		1.02
	Product	$195.28
Calculated Square Foot Cost Benchmark		**$195.28**

The MVS estimate for this project is impacted by the Adjustment for Departmental Differential Cost Factor. In Section 87 on page 8 of the Valuation Service, MVS provides the cost differential by department compared to the average cost for an entire hospital. The calculation of the average factor is shown below.

Department/Function	BGSF	MVS Department Name	MVS Differential Cost Factor	Cost Factor X SF
Level 02				
Pipe Tunnel	1,187	Mechanical Equipment and Shops	0.7	831

Vertical Circulation (Stairs/Elevators)	670	Internal Circulation, Corridors	0.6	402
Exterior Walls	364		1	364
Level 01				
Storage	4,821	Storage and Refrigeration	1.6	7,714
Bed Storage / Repair	1,555	Storage and Refrigeration	1.6	2,488
Laboratory Services	11,013	Laboratories	1.15	12,665
Clinical Engineering	4,275	Laboratories	1.15	4,916
Medical Record	3,211	Medical Records	0.98	3,147
Dining Expansion	4,092	Dietary	1.52	6,220
Mailroom	664	Offices	0.96	637
Linen and EVS Supply	3,092	Laundry	1.68	5,195
Water Service / Mechanical	4,337	Mechanical Equipment and Shops	0.7	3,036
CSP	8,811	Central Sterile Supply	1.54	13,569
Vertical Circulation (Stairs/Elevators)	1,658	Internal Circulation, Corridors	0.6	995
Circulation	4490	Internal Circulation, Corridors	0.6	2,694
MEP Spaces	653	Mechanical Equipment and Shops	0.7	457
Elevator Machine Room	250	Mechanical Equipment and Shops	0.7	175
Exterior Walls	2016		1	2,016
	57,159		1.18	67,520

II. Marshall Valuation Service
Valuation Benchmark
Upper Floors

Type		Hospital
Construction Quality/Class		Good/A
Stories		6
Perimeter		1,490
Average Floor to Floor Height		15.6
Square Feet		303,123
f.1	Average floor Area	60,625

A. Base Costs

	Basic Structure	$374.00
	Elimination of HVAC cost for adjustment	0
	HVAC Add-on for Mild Climate	0
	HVAC Add-on for Extreme Climate	0
Total Base Cost		$374.00

Adjustment for Departmental Differential Cost Factors		1.12
Adjusted Total Base Cost		$418.64
B. Additions		
	Elevator (If not in base)	$0.00
	Other	$0.00
Subtotal		$0.00
Total		$418.64
C. Multipliers		
Perimeter Multiplier		0.91104963
	Product	$381.41
Height Multiplier		1.08
	Product	$412.94
Multi-story Multiplier		1.015
	Product	$419.14
D. Sprinklers		
	Sprinkler Amount	$2.50
Subtotal		$421.63
E. Update/Location Multipliers		
Update Multiplier		1.02
	Product	$430.07
Location Multiplier		1.02
	Product	$438.67
Calculated Square Foot Cost Benchmark		**$438.67**

The MVS estimate for this component is also impacted by the Adjustment for Departmental Differential Cost Factor. In Section 87 on page 8 of the Valuation Service, MVS provides the cost differential by department compared to the average cost for an entire hospital. The calculation of the average factor is shown below.

Department/Function	BGSF	MVS Department Name	MVS Differential Cost Factor	Cost Factor X SF
ACUTE PATIENT CARE				

Level 1				
Lobby	7,397	Public Space	0.8	5,918
Retail	4,754	Public Space	0.8	3,803
Admit	4,694	Offices	0.98	4600.12
Imaging	11,391	Radiology	1.22	13,897
Chapel	1,405	Public Space	0.8	1,124
Vertical Circulation (Stairs/Elevators)	1,853	Internal Circulation, Corridors	0.6	1,112
Circulation	6,449	Internal Circulation, Corridors	0.6	3,869
MEP Spaces	1,534	Mechanical Equipment and Shops	0.7	1,074
Exterior Walls	2,824		1	2,824
Level 3				
Surgical Services	37,541	Operation, Facility	1.68	63,069
Burn Center	20,224	Inpatient Unit	1.06	21,437
Rehab Gym	2,076	Physical Medicine	1.09	2,263
Patient/Visitor/Staff Support	9,906	Offices	0.96	9,510
Vertical Circulation (Stairs/Elevators)	2,442	Internal Circulation, Corridors	0.6	1,465
MEP Spaces	2,058	Mechanical Equipment and Shops	0.7	1,441
Exterior Walls	1,559		1	1,559
Level 4				
Neonatal Intensive Care	16,561	Inpatient Unit	1.06	17,555
Labor & Delivery	16,920	Obstetrical Suite Only	1.44	24,364
AP/PP	15,454	Obstetrical Suite Only	1.44	22,253
Patient/Visitor/Staff Support	11,173	Offices	0.96	10,726
Vertical Circulation (Stairs/Elevators)	2,419	Internal Circulation, Corridors	0.6	1,451
MEP Spaces	2,412	Mechanical Equipment and Shops	0.7	1,688
Exterior Walls	1,546		1	1,546
Level 5				
Neuro	26,437	Inpatient Unit	1.06	28,023
Ortho	16,286	Inpatient Unit	1.06	17,263
Rehab Gym	4,030	Physical Medicine	1.09	4,393
Patient/Visitor/Staff Support	5,881	Offices	0.96	5,646
Vertical Circulation (Stairs/Elevators)	2,312	Internal Circulation, Corridors	0.6	1,387
MEP Spaces	2,421	Mechanical Equipment and Shops	0.7	1,695
Exterior Walls	1,217		1	1,217
Level 6				
Medicine ICU, Medicine IP	24,865	Inpatient Unit	1.06	26,357
Surgical IP	24,815	Inpatient Unit	1.06	26,304
Patient/Visitor/Staff Support	4,147	Offices	0.96	3,981
Vertical Circulation (Stairs/Elevators)	2,266	Internal Circulation, Corridors	0.6	1,360

MEP Spaces	2,405	Mechanical Equipment and Shops	0.7	1,684
Exterior Walls	1,450		1	1,450
Total	303,123		1.12	339,307

III. Marshall Valuation Service
Valuation Benchmark
Mechanical Penthouse

Type			Mechanical Penthouse
Construction Quality/Class			Excellent/A-B
Stories			7
Perimeter			1,432
Average Floor to Floor Height			24.00
Square Feet			47,603
	Average floor Area		47,603
A. Base Costs			
	Basic Structure	$	92.00
	Elimination of HVAC cost for adjustment		0
	HVAC Add-on for Mild Climate		0
	HVAC Add-on for Extreme Climate		0
Total Base Cost			$92.00
B. Additions			
	Elevator (If not in base)		$3.04
	Other		$0.00
Subtotal			$3.04
Total			$95.04
C. Multipliers			
Perimeter Multiplier			0.924029656
	Product	$	87.82
Height Multiplier			1.276
	Product		$112.05
Multi-story Multiplier			1.020
	Product		$114.29
D. Sprinklers			
	Sprinkler Amount		$0.00
Subtotal			$114.29

E. Update/Location Multipliers

Update Multiplier	1.02
Product	$116.58
Location Multiplier	1.02
Product	$118.91
Calculated Square Foot Cost Standard	**$118.91**

IV. Consolidated Benchmark

"Tower" Component	$438.67	303,123	$ 132,970,286.59
Basement	$195.28	57,159	$ 11,162,012.85
Mechanical Penthouse	$118.91	47,603	$ 5,660,533.85
Consolidated	**$ 367.24**	407,885	$ 149,792,833.29

V. Cost of New Construction

A. Base Calculations	Actual	Per Sq. Foot
Building	$182,241,000	$446.80
Fixed Equipment	$0	$0.00
Site Preparation	$16,530,000	$40.53
Architectural Fees	$13,768,000	$33.75
Permits	$1,851,000	$4.54
Capitalized Construction Interest	Calculated Below	Calculated Below
Subtotal	$214,390,000	$525.61

However, as related below, this project includes expenditures for items not included in the MVS average.

	Project Costs		Associated Cap Interest
Site Demolition Costs	$1,485,158	Site	
Storm Drains	$1,562,467	Site	
Rough Grading	$1,859,838	Site	
Hillside Foundation	$230,703	Site	
Paving	$2,357,937	Site	
Exterior Signs	$0	Site	
Landscaping	$675,646	Site	

Walls	$0	Site	
Yard Lighting	$1,251,965	Site	
Temp Parking	$0	Site	
Temporary ED Drop Off Circle During Construction	$191,119	Site	
Offsite Costs Excluded from the MVS - Utilities	$6,592,771	Site	
LEED Silver Green Building Premium	$12,896	Site	
MBE Participation Cost Premium	$12,896	Site	
Garage Connection	$749,858	Building	$57,910
Bridge to Burton Pavilion	$2,287,350	Building	$176,648
Parking Garage (Under NIB)	$723,465	Building	$55,872
Arrival Plaza - Drop-off with Canopy	$382,950	Building	$29,575
Green Roof Premium	$627,702	Building	$48,476
Temporary ED Entrance	$892,688	Building	$68,941
Building Demolition at NIB Connections	$846,655	Building	$65,386
Extraordinary Basement program cost	$7,958,356	Building	$614,611
Tight lot line / Urban construction premium	$5,658,583	Building	$437,003
Helipad (get spray foam system)	$1,697,400	Building	$131,088
Reverse Osmosis H2O System due to water quality issues	$119,025	Building	$9,192
Extraordinary Costs for Burn Unit AHU	$949,820	Building	$73,353
Concrete Structure in lieu of Steel Structure	$1,402,664	Building	$108,325
Demolition of Adjacent Structures	$846,268	Building	$65,356
Pneumatic Tube Infrastructure	$833,175	Building	$64,345
Sheeting and Shoring Premium	$1,999,620	Building	$154,427
Mat Foundation Premium	$727,719	Building	$56,201
Exterior Skin Premium	$2,433,743	Building	$187,954
Seimsmic Reinforcement	$621,421	Building	$47,991
LEED Silver Green Building Premium	$6,019,302	Building	$464,861

MBE Participation Cost Premium	$6,019,302	Building	$464,861
Total Cost Adjustments	$60,030,459		$3,382,378

Explanation of Extraordinary Costs

- Signs, canopy, jurisdictional hook-up fees, paving and roads including roads necessary for the temporary ED drop-off circle, storm drains, rough grading, landscaping, hillside foundations, yard lighting (and security devices), and demolition – These costs are specifically excluded from the Marshall & Swift Valuation base square foot cost for a Class A – Good General Hospital per Section 1, page 3 of the Marshall Valuation Service.
- Restricted Site for the parking garage, the NIB and the renovations: – The Parking garage, New Inpatient Building and renovations of existing facilities are on a very restricted site. The construction shall be completed in phases beginning with relocating an existing parking lot to a new temporary location across the street from its current location to accommodate the site work and excavation associated with the NIB and the new garage structure. Therefore, because of the congestion of the site and the necessity to build within limited footprints surrounded by existing buildings, the construction will be restricted. It will also have a lack of onsite, storage, parking and laydown space. This will add costs to onsite labor and equipment as well as add costs to materials resulting from added storage and handling costs over and above the average construction costs. In order to maintain our presence at the current site, these additional costs are unavoidable.
- Temporary ED Entrance and the Arrival Plaza drop off canopy – The existing entrance needs to be relocated temporarily during construction. Additionally, a temporary tented structure will be erected to shield the patients from the temporary drop off circle to the temporary ED entrance.
- Parking garage under the building and below ground - Cost of the foundations and columns for the garage under the hospital are more expensive due to the decision to place the parking garage as an integral portion of the NIB.
- Building Façade – The building skin design as detailed in Table C incorporates the architecture of the existing surrounding buildings as well as what is considered necessary in today's market for a Class A – Good General Hospital. The additional glass window walls are above the MVS baseline of brick and ribbon wall.
- Reverse Osmosis Water System - Hopkins utilizes specialty reverse osmosis systems to produce high purity, disinfected water. This system applies to disinfecting medical products and equipment, and sterilization before medical procedures. Given the specialized nature of this system, we have identified it as an extraordinary cost.
- LEED Silver Premium – Bayview has included a 4% premium (based on Building Costs only) to meet Baltimore City requirements due to constructing this building to LEED Silver standards. The potential for a 0%-7% premium is recognized by MVS in Section 99, Page 1.

- Green Roof – Bayview has included a separate premium for the green roof on the NIB. While this is a part of the LEED premium, the costs for it are over and above the 4% premium noted above. In combination with the LEED premium, the NIB is still well under the potential 7% premium noted by MVS in Section 99, Page 1.
- MBE Requirement – Bayview will execute all aspects of this project with MBE goals that exceed 15%. The "Hopkins Local" program is designed to encourage small, minority, disadvantaged - and women-owned businesses to participate in our projects in order to grow skills and capacity in the local and MBE community. According to the Maryland Office of Legislative Audits November 2016 report on school construction costs, "The State and industry professionals note that the MBE law increases required reporting requirements, which may be especially burdensome for small businesses. As such, bid competition may decrease as these firms may elect not to bid on projects subject to MBE requirements. Reduced competition can indirectly increase school construction costs." Hopkins estimates that the premium attributable to our inclusion program is approximately 4%.
- Extraordinary Basement Costs – Based on the MVS calculations which purportedly adjust for the specific services located in the basement, the MVS allows the following basement costs for our project:
    - New Construction - $195.28 per square foot
    - Renovation - $218.22 per square foot

  After careful review of our third-party cost estimates, it appears that both of these items are inadequate. The basement of our new construction is atypical from many hospitals that include low-level administrative offices and storage space. In contrast, our new inpatient building construction includes the following tenants: Pathology and Clinical Engineering lab services, Central Sterile Processing, Linen and Environmental Services, and Kitchen/Dining Room Expansion. The fit out for all of these services is very mechanical, electrical and plumbing intensive, which yields the cost to construct very expensive. For comparative purposes, we identified the estimated cost per square foot for the basement using our third-party estimates. The amounts were as follows:
    - New Construction - $329.80
    - Renovation - $275.66

  This results in approximately $134.52 per square foot of new construction basement renovation costs and $57.44 of basement renovation costs that are not adequately valued in the MVS calculator. These amounts equate to $7,958,356 of new construction and $1,652,236 of renovation costs in basement spaces that are extraordinarily above the MVS amounts.
- Utilities – This item is discussed in the Application and involves the installation of utilities that are in excess of 5' beyond the building. The services impacted include communications and fiber optic lines; electric lines and manholes; storm drain systems, sanitary systems; and steam and chilled water systems. Since these costs are beyond the 5' building lot line, these costs are specifically excluded from the Marshall & Swift Valuation base square foot cost for a Class A – Good General

Hospital per Section 1, page 3 of the Marshall Valuation Service. They are included in the site preparation costs.

- Seismic design – The NIB is considered a Risk Category IV and the structural design shall meet the requirements associated with seismic design class B for Baltimore City code. The costs associated with the additional structural requirements to meet the seismic codes are described in section 45, pg. 1 of MvS and included in this budget as an extraordinary expense.
- Garage Connection and Bridge to Burton Pavilion – This project includes a bridge connector from the parking garage to the Hospital. An overhead bridge, not usual in the average hospital project. While a pedestrian bridge is necessary in this project, these costs are specifically excluded from the MVS base square foot cost for a Class A – Good General Hospital per Section 15, page 25 of the Marshall Valuation Service.
- Helipad - Rooftop Heliport (with dedicated elevators) - As the designated Burn Center for the State of Maryland and a Level I Trauma Center for adults, BMC must have a functional heliport with dedicated elevators. Due to its urban location and the congestion of the site, BMC has concluded that the only place for the heliport is the roof. Heliports are not in the Hospital Cost standard. Clearly, a rooftop heliport with two dedicated elevators is not in the standard.
- Burn Unit – As the designated Burn Center for the State of Maryland, the costs to provide the building infrastructure and equipment needed to provide the highest level of care for the burn patient is included in this project and not included in the MVS standard hospital cost for a Class A - Good General Hospital.
- Sheet and Shore Basement Excavation and Backfill Premium - Mass excavation to building subgrade and backfill is included in MVS, but it does not recognize the limited area of the site. In the normal case the excavation would be sloped back, earth materials would be retained on site and then these stockpiled materials would be used for backfill. With limited site area these direct construction activities are affected requiring the sloped back excavation to be replaced by a structural system of sheeting and shoring such that the excavation is a vertical cut. With insufficient work space earth backfill materials cannot be stockpiled on site but instead need to be hauled and disposed of offsite. Backfill materials will then have to be purchased and hauled to the site.
- Select building demolition - At various points where the building addition interfaces with the existing building there is a need to perform select building demolition. The renovation phase also includes considerable renovation to existing buildings. MVS does not consider any demolition costs.
- Pneumatic tube systems - The costs for the pneumatic tube system are included in the construction cost estimate and not in the Owner's equipment costs. These costs are excluded from the Marshall & Swift Valuation base square foot cost for a Class A - Good General Hospital.
- Mat Foundation and Under Slab Drainage – Based on the ground water tables found on site, the use of a mat foundation is the best option to resist the hydrostatic pressure. An under slab drainage system will be required as well. Mat foundations and under slab drainage are not included in the MVS.

- Premium for Concrete Frame Construction – Concrete frame construction is significantly more costly than steel frame. Only the premium is being considered an extraordinary cost. For the NIB the additional cost premium is estimated it to be $3.10/square foot.
- Capitalized Construction Interest and Financing Costs on Extraordinary Costs – $20,187,000 in capitalized interest shown on the project budget sheet is for the entire costs of the project. We have allocated it between new construction and renovation. However, because the Capitalized Construction Interest only associate with the costs in the "Building" budget line are considered in the MVS analysis, it is appropriate to adjust the cost of each of the above items that are in the Building costs to include the associated capitalized construction interest.

Hospital	New	Renovation	Total		
Building Cost	$182,241,000	$0			
Subtotal Cost (w/o Cap Interest)	$214,390,000	$0	$214,390,000		
Subtotal/Total	100.0%	0.0%	Cap Interest	Loan Placement Fees	
Total Project Cap Interest &Financing [(Subtotal Cost/Total Cost) X Total Cap Interest]	$16,557,000	$0	$16,557,000		$0
Building/Subtotal	85.0%				
Building Cap Interest & Loan Place.	$14,074,184				
Associated with Extraordinary Costs	$3,382,378				
Applicable Cap Interest & Loan Place.	$10,691,806				

- Architectural and Engineering Fees Related to Extraordinary Costs – A&E Fees are typically a percentage of the total cost of Building, fixed equipment, and site preparation, including extraordinary costs. Consequently, like capitalized interest, if the extraordinary costs are removed from the comparison, their related A&E Fees should also be removed. This was accomplished by calculating the percent that the original A&E Fees comprised of the Building and site prep costs, multiplying that percentage times the sum of the extraordinary costs, and subtracting that number from the original A&E fees.

  Eliminating all of the extraordinary costs reduces the project costs that should be compared to the MVS estimate. As noted below, the project's cost per square foot is within reason of the MVS benchmark.

Adjusted Project Cost	**Adjusted Project Costs**	**Per Square Foot**
Building	$138,443,937	$339.42
Fixed Equipment		$0.00
Site Preparation	$309,500	$0.76
Architectural Fees	$9,609,952	$23.56
Permits	$1,851,000	$4.54
Subtotal	$150,214,389	$368.28

Capitalized Construction Interest	$10,691,806	$26.21
Total	$160,906,195	$394.49

MVS Benchmark	**$367.24**
The Project	**$394.49**
Difference	**$27.25**
%	**7.42%**

II. Renovation
Marshall Valuation Service
Valuation Benchmark
Hospital Basements

Type		Hospital Basements
Construction Quality/Class		Good/A
Stories		1
Perimeter		-
Average Floor to Floor Height		13.8
Square Feet		27,791
f.1	Average floor Area	27,791
A. Base Costs		
	Basic Structure	$162.00
	Elimination of HVAC cost for adjustment	0
	HVAC Add-on for Mild Climate	0
	HVAC Add-on for Extreme Climate	0
Total Base Cost		$162.00
Adjustment for Departmental Differential Cost Factors		1.37
Adjusted Total Base Cost		$221.93
B. Additions		
	Elevator (If not in base)	$0.00
	Other	$0.00
Subtotal		$0.00
Total		$221.93
C. Multipliers		

Perimeter Multiplier		0.90854194
	Product	$201.63
Height Multiplier		1.04
	Product	$209.75
Multi-story Multiplier		1.000
	Product	$209.75
D. Sprinklers		
	Sprinkler Amount	$0.00
Subtotal		$209.75
E. Update/Location Multipliers		
Update Multiplier		1.02
	Product	$213.94
Location Multiplier		1.02
	Product	$218.22
Calculated Square Foot Cost Benchmark		**$218.22**

II. Marshall Valuation Service
Valuation Benchmark
Upper Floors

Type		Hospital
Construction Quality/Class		Good/A
Stories		3
Perimeter		255
Average Floor to Floor Height		16.0
Square Feet		21,563
f.1	Average floor Area	10,782
A. Base Costs		
	Basic Structure	$374.00
	Elimination of HVAC cost for adjustment	0
	HVAC Add-on for Mild Climate	0
	HVAC Add-on for Extreme Climate	0
Total Base Cost		$374.00
Adjustment for Departmental Differential Cost Factors		0.97

Adjusted Total Base Cost		$364.32
B. Additions		
	Elevator (If not in base)	$0.00
	Other	$0.00
Subtotal		$0.00
Total		$364.32
C. Multipliers		
Perimeter Multiplier		0.908331532
	Product	$330.92
Height Multiplier		1.09
	Product	$361.54
Multi-story Multiplier		1.000
	Product	$361.54
D. Sprinklers		
	Sprinkler Amount	$3.92
Subtotal		$365.46
E. Update/Location Multipliers		
Update Multiplier		1.02
	Product	$372.77
Location Multiplier		1.02
	Product	$380.22
Calculated Square Foot Cost Standard		**$380.22**

III. Marshall Valuation Service
Valuation Benchmark
Utility Building

Type	Hospital
Construction Quality/Class	Good/A
Stories	2
Perimeter	541
Average Floor to Floor Height	33.63
Square Feet	24,530

	Average floor Area		12,265
A. Base Costs			
	Basic Structure	$	374.00
	Elimination of HVAC cost for adjustment		0
	HVAC Add-on for Mild Climate		0
	HVAC Add-on for Extreme Climate		0
Total Base Cost			$374.00
B. Additions			
	Elevator (If not in base)		$0.00
	Other		$0.00
Subtotal			$0.00
Total			$374.00
C. Multipliers			
Perimeter Multiplier			0.959303375
	Product	$	358.78
Height Multiplier			1.478425
	Product		$530.43
Multi-story Multiplier			1.000
	Product		$530.43
D. Sprinklers			
	Sprinkler Amount		$4.09
Subtotal			$534.52
E. Update/Location Multipliers			
Update Multiplier			1.02
	Product		$545.21
Location Multiplier			1.02
	Product		$556.11
Calculated Square Foot Cost Standard			**$556.11**

IV. Consolidated Benchmark

MVS Benchmark	**Sq. Ft.**	**Total Cost Based on MVS**

Standard					
"Tower" Component		$380.22	21,563	$	8,198,778.34
Utility Building		$556.11	24,530	$	13,641,418.76
Basement		$218.22	27,791	$	6,064,590.38
Consolidated	**$**	**377.68**	73,884	$	27,904,787.49

V. Cost of Renovation

A. Base Calculations	**Actual**	**Per Sq. Foot**
Building	$27,885,000	$377.42
Fixed Equipment	$0	$0.00
Site Preparation	$0	$0.00
Architectural Fees	$2,155,000	$29.17
Permits	$303,000	$4.10
Capitalized Construction Interest	Calculated Below	Calculated Below
Subtotal	$30,343,000	$410.68

However, as related below, this project includes expenditures for items not included in the MVS average.

	Project Costs		**Associated Cap Interest**
Demolition & Abatement	$2,261,475	Building	$179,767.25
Remodel Premium	$4,968,863	Building	$394,980.68
Selective Demolition at the Loading Dock	$50,586	Building	$4,021.11
Extraordinary Basement program cost	$1,652,236	Building	$131,338.14
Restricted Site	$607,243	Building	$48,270.41
LEED Silver Green Building Premium	$733,784	Building	$58,329.33
MBE Participation Cost Premium	$733,784	Building	$58,329.33
Total Cost Adjustments	$11,007,970		$875,036

Explanation of Extraordinary Costs

- Signs, canopy, jurisdictional hook-up fees, paving and roads including roads necessary for the temporary ED drop-off circle, storm drains, rough grading, landscaping, hillside foundations, yard lighting (and security devices), and demolition – These costs are specifically excluded from the Marshall & Swift Valuation base square foot cost for a Class A – Good General Hospital per Section 1, page 3 of the Marshall Valuation Service.

- Renovation Remodel Premium – In prior experience, the cost to remodel an existing building can be far more expensive than the cost to construct a new building. In section 99 page 1 of the MVS guide, MVS recognized this in the following statement, "All costs in this manual are based on new construction. Typical repair work will run 10 to 20% higher because off restricted area, movement of materials, temporary supports, shoring, etc. and other contingencies not encountered in new construction, excluding demolition and removal." The buildings being renovated under this CON have been active for more than 25 years. In that time, the building has been subject to additional renovation and repair projects that only complicate the work to be completed. In addition, all areas must be renovated while maintaining ongoing operations in the buildings, which further influences the cost of the renovations. In lieu of the factors listed above, Bayview has included a 17% premium related to the renovations.

- Extraordinary Basement Costs – Based on the MVS calculations which purportedly adjust for the specific services located in the basement, the MVS allows the following basement costs for our project:

    - New Construction - $195.28 per square foot
    - Renovation - $218.22 per square foot

  After careful review of our third-party cost estimates, it appears that both of these items are inadequate. The basement of our new construction is atypical from many hospitals that include low-level administrative offices and storage space. In contrast, our new inpatient building construction includes the following tenants: Pathology and Clinical Engineering lab services, Central Sterile Processing, Linen and Environmental Services, and Kitchen/Dining Room Expansion. The fit out for all of these services is very mechanical, electrical and plumbing intensive, which yields the cost to construct very expensive. For comparative purposes, we identified the estimated cost per square foot for the basement using our third party estimates. The amounts were as follows:

    - New Construction - $329.80
    - Renovation - $275.66

  This results in approximately $134.52 per square foot of new construction basement renovation costs and $57.44 of basement renovation costs that are not adequately valued in the MVS calculator. These amounts equate to $7,958,356 of new construction and $1,652,236 of renovation costs in basement spaces that are extraordinarily above the MVS amounts.

- Restricted Site for the parking garage, the NIB and the renovations: – The Parking garage, New Inpatient Building and renovations of existing facilities are on a very restricted site. The construction shall be completed in phases beginning with relocating an existing parking lot to a new temporary location across the street from its current location to accommodate the site work and excavation associated with the NIB and the new garage structure. Therefore, because of the congestion of the site and the necessity to build within limited footprints surrounded by existing buildings, the construction will be restricted. It will also have a lack of onsite, storage, parking and laydown space. This will add costs to onsite labor and equipment as well as add costs to materials resulting from added storage and

handling costs over and above the average construction costs. In order to maintain our presence at the current site, these additional costs are unavoidable.

- LEED Silver Premium – Bayview has included a 4% premium (based on Building Costs only) to meet Baltimore City requirements due to constructing this building to LEED Silver standards. The potential for a 0%-7% premium is recognized by MVS in Section 99, Page 1.

- MBE Requirement – Bayview will execute all aspects of this project with MBE goals that exceed 15%. The "Hopkins Local" program is designed to encourage small, minority, disadvantaged - and women-owned businesses to participate in our projects in order to grow skills and capacity in the local and MBE community. According to the Maryland Office of Legislative Audits November 2016 report on school construction costs, "The State and industry professionals note that the MBE law increases required reporting requirements, which may be especially burdensome for small businesses. As such, bid competition may decrease as these firms may elect not to bid on projects subject to MBE requirements. Reduced competition can indirectly increase school construction costs." Hopkins estimates that the premium attributable to our inclusion program is approximately 4%.

- Capitalized Construction Interest and Financing Costs on Extraordinary Costs – $20,187,000 in capitalized interest shown on the project budget sheet is for the entire costs of the project. We have allocated it between new construction and renovation. However, because the Capitalized Construction Interest only associate with the costs in the "Building" budget line are considered in the MVS analysis, it is appropriate to adjust the cost of each of the above items that are in the Building costs to include the associated capitalized construction interest.

Hospital	New	Renovation	Total	
Building Cost	$0	$27,885,000		
Subtotal Cost (w/o Cap Interest)	$0	$30,343,000	$30,343,000	
Subtotal/Total	0.0%	100.0%	Cap Interest	Loan Placement Fees
Total Project Cap Interest &Financing	$0	$2,412,000	$2,412,000	$0
Building/Subtotal		91.9%		
Building Cap Interest & Loan Place.		$2,216,611		
Associated with Extraordinary Costs	$0	$875,036		
Applicable Cap Interest & Loan Place.		$1,341,575		

- Architectural and Engineering Fees Related to Extraordinary Costs – A&E Fees are typically a percentage of the total cost of Building, fixed equipment, and site preparation, including extraordinary costs. Consequently, like capitalized interest, if the extraordinary costs are removed from the comparison, their related A&E Fees should also be removed. This was accomplished by calculating the percent that the original A&E Fees comprised of the Building and site prep costs, multiplying that percentage times the sum of the extraordinary costs, and subtracting that number from the original A&E fees.

Eliminating all of the extraordinary costs reduces the project costs that should be compared to the MVS estimate. As noted below, the project's cost per square foot is within reason of the MVS benchmark.

Adjusted Project Cost	**Adjusted Project Costs**	**Per Square Foot**
Building	$16,877,030	$228.43
Fixed Equipment		$0.00
Site Preparation	$0	$0.00
Architectural Fees	$1,304,285	$17.65
Permits	$303,000	$4.10
Subtotal	$18,484,315	$250.18
Capitalized Construction Interest	$1,341,575	$18.16
Total	$19,825,890	$268.34

MVS Benchmark	$377.68
The Project	$268.34
Difference	-$109.35
%	-28.95%

Standard .04B(8) – <u>Construction Cost of Non-Hospital Space.</u>

The proposed construction costs of non-hospital space shall be reasonable and in line with current industry cost experience. The projected cost per square foot of non-hospital space shall be compared to the benchmark cost of good quality Class A construction given in the Marshall Valuation Service® guide for the appropriate structure. If the projected cost per square foot exceeds the Marshall Valuation Service® benchmark cost, any rate increase proposed by the hospital related to the capital cost of the non-hospital space shall not include the amount of the projected construction cost that exceeds the Marshall Valuation Service® benchmark and those portions of the contingency allowance, inflation allowance, and capitalized construction interest expenditure that are based on the excess construction cost. In general, rate increases authorized for hospitals should not recognize the costs associated with construction of non-hospital space.

Applicant Response:

The JH-BMC project includes a garage, part of which under the new building. The following compares the project costs to the Marshall Valuation Service ("MVS") benchmark for the garage.

I. New Construction
Marshall Valuation Service
Valuation Benchmark
Underground Parking Structures

		Underground Parking Structures
Type		
Construction Quality/Class		A-B
Stories		1
Perimeter		980
Average Floor to Floor Height		13.8
Square Feet		52,322
f.1	Average floor Area	52,322
A. Base Costs		
	Basic Structure	$90.93
	Elimination of HVAC cost for adjustment	0
	HVAC Add-on for Mild Climate	0
	HVAC Add-on for Extreme Climate	0
Total Base Cost		$90.93
Adjusted Total Base Cost		$90.93
B. Additions		
	Elevator (If not in base)	$0.00
	Other	$0.00
Subtotal		$0.00
Total		$90.93
C. Multipliers		
Perimeter Multiplier		0.90255292
	Product	$82.07
Height Multiplier		1.04
	Product	$85.37
Multi-story Multiplier		1.000
	Product	$85.37
D. Sprinklers		
	Sprinkler Amount	$3.27
Subtotal		$88.64

E. Update/Location Multipliers		
Update Multiplier		1.03
	Product	$91.30
Location Multiplier		1.02
	Product	$93.13
Calculated Square Foot Cost Standard		**$93.13**

II. New Construction
Marshall Valuation Service
Valuation Benchmark
Parking (Parkade) Structures

Type		Parking (Parkade) Structures
Construction Quality/Class		Good/A
Stories		3
Perimeter		906
Average Floor to Floor Height		8.6
Square Feet		137,732
f.1	Average floor Area	45,911
A. Base Costs		
	Basic Structure	$70.41
	Elimination of HVAC cost for adjustment	0
	HVAC Add-on for Mild Climate	0
	HVAC Add-on for Extreme Climate	0
Total Base Cost		$70.41
Adjusted Total Base Cost		$70.41
B. Additions		
	Elevator (If not in base)	$0.00
	Other	$0.00
Subtotal		$0.00
Total		$70.41
C. Multipliers		
Perimeter Multiplier		0.9059008
	Product	$63.78

Height Multiplier	0.90
Product	$57.09
Multi-story Multiplier	1.000
Product	$57.09
D. Sprinklers	
Sprinkler Amount	$2.36
Subtotal	$59.45
E. Update/Location Multipliers	
Update Multiplier	1.04
Product	$61.83
Location Multiplier	1.01
Product	$62.45
Calculated Square Foot Cost Standard	**$62.45**

III. Consolidated Benchmark

		MVS Benchmark	Sq. Ft.		Total Cost Based on MVS
Standard					
Above Grade		$62.45	137,732	$	8,601,566.03
Under Building		$93.13	52,322	$	4,872,605.06
Consolidated	**$**	**70.90**	190,054	$	13,474,171.08

IV. Cost of New Construction

A. Base Calculations	Actual	Per Sq. Foot
Building	$18,055,000	$95.00
Fixed Equipment	$0	$0.00
Site Preparation	$0	$0.00
Architectural Fees	$1,252,000	$6.59
Permits	$193,000	$1.02
Capitalized Construction Interest	Calculated Below	Calculated Below
Subtotal	$19,500,000	$102.60

However, as related below, this project includes expenditures for items not included

in the MVS average.

	Project Costs		Associated Cap Interest
Premium for Garage under the Hospital Building	$1,477,930	Building	$92,313.77
Tight lot line / Urban construction premium	$497,404	Building	$31,068.61
Mat Foundation Premium	$339,318	Building	$21,194.30
Seismic Reinforcement	$289,551	Building	$18,085.81
Temp Parking	$4,076,937	Building	$254,651.77
MBE Participation Cost Premium	$454,954	Building	$28,417.15
Total Cost Adjustments	$7,136,094		$445,731

Explanation of Extraordinary Costs

- Parking garage under the building and below ground - Cost of the foundations and columns for the garage under the hospital are more expensive due to the decision to place the parking garage as an integral portion of the NIB.
- Restricted Site for the parking garage, the NIB and the renovations: – The Parking garage, New Inpatient Building and renovations of existing facilities are on a very restricted site. The construction shall be completed in phases beginning with relocating an existing parking lot to a new temporary location across the street from its current location to accommodate the site work and excavation associated with the NIB and the new garage structure. Therefore, because of the congestion of the site and the necessity to build within limited footprints surrounded by existing buildings, the construction will be restricted. It will also have a lack of onsite, storage, parking and laydown space. This will add costs to onsite labor and equipment as well as add costs to materials resulting from added storage and handling costs over and above the average construction costs. In order to maintain our presence at the current site, these additional costs are unavoidable.
- Mat Foundation and Under Slab Drainage – Based on the ground water tables found on site, the use of a mat foundation is the best option to resist the hydrostatic pressure. An under slab drainage system will be required as well. Mat foundations and under slab drainage are not included in the MVS.
- Seismic design – The NIB is considered a Risk Category IV and the structural design shall meet the requirements associated with seismic design class B for

Baltimore City code. The costs associated with the additional structural requirements to meet the seismic codes are described in section 45, pg. 1 of MVS and included in this budget as an extraordinary expense.

- Temp Parking – Construction of the garage will require JH-BMC to construct temporary parking for employees and visitors.
- MBE Requirement – Bayview will execute all aspects of this project with MBE goals that exceed 15%. The "Hopkins Local" program is designed to encourage small, minority, disadvantaged - and women-owned businesses to participate in our projects in order to grow skills and capacity in the local and MBE community. According to the Maryland Office of Legislative Audits November 2016 report on school construction costs, "The State and industry professionals note that the MBE law increases required reporting requirements, which may be especially burdensome for small businesses. As such, bid competition may decrease as these firms may elect not to bid on projects subject to MBE requirements. Reduced competition can indirectly increase school construction costs." Hopkins estimates that the premium attributable to our inclusion program is approximately 4%.

Standard .04B(9) – <u>Inpatient Nursing Unit Space.</u>

Space built or renovated for inpatient nursing units that exceeds reasonable space standards per bed for the type of unit being developed shall not be recognized in a rate adjustment. If the Inpatient Unit Program Space per bed of a new or modified inpatient nursing unit exceeds 500 square feet per bed, any rate increase proposed by the hospital related to the capital cost of the project shall not include the amount of the projected construction cost for the space that exceeds the per bed square footage limitation in this standard, or those portions of the contingency allowance, inflation allowance, and capitalized construction interest expenditure that are based on the excess space.

Applicant Response:

Inpatient Unit/Location (in the NIB, unless noted otherwise)	**Beds**	**NSF**	**NSF/Bed**
Burn Critical Care and IMC/ Level 3	16	11,085	693
Surgical ICU/ Level 3 FSK Pavilion	10	6,988	699
Neonatal ICU/ Level 4	22	10,626	483
OB/ Antepartum + Postpartum/ Level 4	18	8,947	497
Medical/ Surgical Neurosciences (including 12 ICU beds) - Level 5	36	17,902	497
Medical/ Surgical - Level 5	20	9,990	500
Medical ICU (24 ICU) and Medical IMC (10)/ Level 6	34	16,962	499
Medical/ Surgical - Level 6	34	16,430	483

The proposed Inpatient Burn Critical Care and Stepdown Unit on NIB Level 3 exceeds the 500 NSF space standard by 3,100 NSF for several reasons that are a direct result of the space required to care for these critically ill and vulnerable patients.

- Every ICU rooms requires protective isolation, including an ante room to maintain pressurization and space for staff and family to don isolation gear (adds 810 NSF)
- Patient rooms are larger than the required minimum to accommodate additional equipment, in-room procedures, and adequate family space as this patient type typically has a very long length of stay (adds approximately 900 NSF).
- Patient toilet rooms are larger than typical ICU rooms because they include showers, in order to encourage patients that can shower to do so (adds 360 NSF).

- Staff monitoring and proximity to the patients is critical, therefore three staff work areas are required when two would be typical (adds 400 NSF) .
- The care team for these patients is multidisciplinary and space for staff to collaborate while in close proximity to the patients is required, therefore the staff work areas are larger than typical to accommodate the entire care team (adds approximately 160 NSF)
- A tub room is required by the Facilities Guidelines Institute (adds 252 NSF)
- Because more staff is required on the unit a larger staff break room has been provided (adds approx. 150 SF).

The proposed Surgical ICU on FSK Level 3 exceeds the 500 NSF space standard by 1,988 NSF for reasons that relate to the space required to care for these critically ill patients and the existing conditions of the physical space in the FSK Pavilion.

- Current conditions do not allow for the design of an efficient floor plan that meets the 500 NSF /bed requirement.
- Many of the inpatient rooms and support spaces are larger than necessary, due to the column configuration and window locations of the existing building.
- The unit will have (10) patient rooms, to match the current bed count of the SICU. Small inpatient units are inefficient because they require all of the support spaces that units with more beds require, which causes the NSF per bed to increase.

The additional area required for the new Burn Center ICU/IMC and Surgical ICU, will allow these units to function in a manner that is optimal for patients, family and staff. JHBMC does not propose any rate relief related to the construction cost of this additional space.

Standard .04B(10) – Rate Reduction Agreement.

A high-charge hospital will not be granted a Certificate of Need to establish a new acute care service, or to construct, renovate, upgrade, expand, or modernize acute care facilities, including support and ancillary facilities, unless it has first agreed to enter into a rate reduction agreement with the Health Services Cost Review Commission, or the Health Services Cost Review Commission has determined that a rate reduction agreement is not necessary.

Applicant Response:

JHBMC is not subject to a rate reduction agreement with the HSCRC.

On July 14, 2014, JHBMC entered an Agreement with the Maryland Health Services Cost Review Commission regarding Global Budget Revenue (GBR) covering the period from July 1, 2013 through June 30, 2014. The agreement renews every year unless cancelled by the HSCRC or JHBMC. A copy of the 2014 HSCRC Agreement can be accessed on the HSCRC website as follows:

Original Agreement:
http://www.hscrc.state.md.us/Documents/global-budgets/Global-Budget-Revenue-Agreement-Hopkins-07-17-14.pdf

Addendum 1:
http://www.hscrc.state.md.us/Documents/global-budgets/HOPKINS-Addendum-to-Section-5-of-Global-Budget-Agreements-6-9-2016.pdf

Addendum 2:
http://www.hscrc.state.md.us/Documents/global-budgets/Hopkins-Second-Addendum-to-GBRAgreeement-102516.pdf

Under the GBR, current proposals to achieve revenue growth in relation to volume growth is considered a market share adjustment and is recognized at 50% variability in the year after the growth in volume. In the financial projections included in this CON application, JHBMC assumes that any changes in patient volumes as a result of market shift will be adjusted for in the GBR at 50% variability in the year the volume changes occur.

The expected growth in revenue at 50% revenue variability while volumes grow at 100% variability will result in a reduction in JHBMC's average charges over the projection period, thereby improving its price competitiveness and savings to Medicare.

Standard .04B(11) – Efficiency.

A hospital shall be designed to operate efficiently. Hospitals proposing to replace or expand diagnostic or treatment facilities and services shall:

(a) Provide an analysis of each change in operational efficiency projected for each diagnostic or treatment facility and service being replaced or expanded, and document the manner in which the planning and design of the project took efficiency improvements into account; and

(b) Demonstrate that the proposed project will improve operational efficiency when the proposed replacement or expanded diagnostic or treatment facilities and services are projected to experience increases in the volume of services delivered; or

(c) Demonstrate why improvements in operational efficiency cannot be achieved.

Applicant Response:

Increased efficiency is integral to two of the primary goals of the project, expansion of private rooms and modernization of dated, inadequately sized facilities. The project is expected to improve efficiency significantly in multiple ways.

I. PRIVATE ROOMS:

The feature that will have perhaps the greatest impact on efficiency is the transition to nearly all private patient rooms. This conversion will yield significant benefits for both patients and staff, including enhanced operational performance, adequate physical space for equipment, storage and supplies, and an improved environment of care to support patient treatment and healing. See the following details:

- Admissions - with the transition to private rooms, patients will no longer have to be re-located during their hospital stay in order to accommodate acuity, diagnosis, infection control, or gender. This will improve throughput from the emergency department and reduce the significant staff demand and disruption to patients caused by moving rooms due to compatibility. These benefits represent significant workflow efficiencies both for the admissions department and associated clinical staff, in addition to the efficiencies associated with decreased room changeovers.

- Operational Work Flows – rooms in the NIB are designed with adequate physical space and storage for all necessary equipment and supplies. Currently, staff spend time locating needed resources in the existing cluttered semi-private rooms, in the hallways, or on another unit. This requires additional labor especially for transport when needed, decreases the efficiency of the staff, and it can in some situations compromise patient care by causing delays. Further, with adequately sized rooms, staff will no longer have to work around equipment and supplies in crowded semi-private rooms. With the new design, equipment, technology, and space for storage will all be conveniently located in same suite, greatly improving the efficiency of

operational workflows.

- Clinical Rounds – with private rooms, clinical team rounds can take place at the bedside, instead of an alternative location, improving communication and increasing engagement of patients and families.

- NICU – although each program and service will benefit from private rooms, there are certain services for which the improvements are essential. The NICU is a key example. Currently, the unit is dramatically undersized and can be characterized as an “open ward” with neonates of varying levels of acuity located in the same open space. The current layout results in overcrowding and congestion, with inadequate space for providers, patients and families. The unit has too many patient beds and excess equipment impeding access to critical resources. Due to the inadequate physical space, staff have difficulty accessing routine clinical supplies, computers and other technology. Further, staff encounter challenges just bringing necessary equipment to the patient’s bedside, or isolating a sick neonate as needed. With the new design, patient beds, equipment, supplies, nutrition and medications will all have dedicated and separate physical space, which will greatly improve operational efficiency and performance.

JHBMC NICU – EXISTING LAYOUT

PRIVATE ROOMS IN THE JHH NICU—SIMILAR TO THE DESIGN OF THE NEW NICU UNIT AT JHBMC

II. INPATIENT UNITS:

The new inpatient units will be compliant with minimum size requirements and incorporate the following efficiencies:

- Adequate space for interdisciplinary care – the new inpatient units will include adequate adjacent space for multi-disciplinary teams to co-locate and convene as needed, facility more effective and timely collaboration on patient treatment plans. This will decrease length of stay for some patients, and it will also in some cases result in care that is better coordinated and a plan that is communicated to the patient and family on a more timely basis.

- Labor & Delivery Unit - the current obstetrics inpatient unit is undersized and poorly designed. Due to space constraints, required clinical equipment cannot fit in the room and is often located outside in the hallway, presenting access challenges for staff. The NIB design effectively addresses this challenge by increasing the size of rooms. Rooms will now be compliant with FGI space guidelines.

- Obstetrics Unit - JHBMC's inpatient post/ante partum rooms are undersized and inadequate to support basic clinical needs. For instance, there is insufficient physical space for both a bassinette and a visitor to stay overnight. The new rooms will be right-sized to accommodate all patient, family and clinical requirements. Doing so will also enhance operational efficiencies.

- Automated Dispensing System – the new facility design will include dedicated space on the units for clean supplies, soiled holding, and medication supply rooms. Automated dispensing systems such as Pyxis machines will be a key feature of these new medication supply rooms. All of these capabilities will be located within approximately 60-80 feet of each inpatient room, representing a significant enhancement over the existing layout, resulting in staff efficiency and better patient care.

- Equipment – the new unit design will allow for faster cleaning of equipment. Currently, equipment must be transported down to the 01 Level for Central Sterile Processing (CSP), a time-consuming process. In the NIB, equipment will instead be cleaned on the floor adjacent to the inpatient units. This will allow for quicker turnover time, enhancing overall operational efficiency.

III. ADJACENT / CO-LOCATED SERVICES:

Various programs and services will be strategically located within the new inpatient building in order to optimize efficiency and clinical outcomes. See the following examples:

- Obstetrics – Labor & Delivery – the new design will enhance patient transport processes. Currently, the inpatient OB unit is located in a different building – the A building – than the L&D suite (AA Building). The new design will position the Obstetrics inpatient unit and the L&D rooms directly adjacent to one another, which will reduce the time needed to transport pregnant and delivering mothers.

- Neonatal Intensive Care Unit (NICU) – the new design will collocate the NICU, L&D and Obstetrics units, improving access and greatly reducing the time needed to transport delivering mothers and neonates to the appropriate care environment.

- Imaging Services

    - In the NIB, imaging services will be located directly adjacent to the Emergency Department. This represents a critical design feature as the ED

refers a high percentage of patients to imaging services (52% in FY17). Locating these services in close proximity will yield many efficiencies including reducing the amount of time for patient transport, decreasing a patient's average length of stay in the ED and improving general operational workflows.

  - Neuro Interventional Radiology (IR) – in the NIB, neuro IR rooms will be relocated to within the imaging suite, directly adjacent to the Emergency Department. This will allow for stroke patients who present in the ED to be diagnosed and treated as quickly as possible. This increases efficiencies by eliminating patient transport, reducing a patient's average length of stay and improving general operational workflows.

- Orthopedics and Neurosciences – the new design includes a rehabilitation gym to be co-located on the same floor as Orthopedics and Neurosciences. This will enhance efficiency by reducing the amount of time to transport patients between these locations.

- Burn Unit – in the new design, the Burn unit will be located directly adjacent to a new dedicated Burn operating room. This increases efficiencies by eliminating patient transport, reducing a patient's average length of stay and improving general operational workflows.
- Surgery / OR Suite – the new design will co-locate the PACU and OR on the same floor, which will greatly reduce the time needed to transport surgical patients and streamline patient care.

IV. OTHER STRATEGIC DESIGN FEATURES:

There are various other key design features of the new inpatient building that will improve operational efficiencies including the following:

- Surgery / OR Suite – the new design includes four new operating rooms to replace the existing, undersized operating rooms. The existing ORs that are being replaced are undersized, making it challenging for some specialties to operate, and there are some types of cases that simply cannot be performed there. The new ORs will be designed with enough physical space to support all staff, equipment, supplies and other supporting clinical infrastructure. The OR redesign will enhance operational efficiency as staff will have quick and easy access to necessary equipment and supplies, and it will reduce multiple deliveries to the OR that currently occur. This will reduce labor required for deliveries and improve efficiency in the OR, also resulting in improved patient care.

- Neuro Interventional Radiology (IR) / Bi-plane Suite – patient volume for neurosciences continues to grow at JHBMC. However, there is currently no space for expansion. The new design addresses this challenge by increasing the number of neuro IR rooms to two, and designing these rooms for efficiency. Specifically, the additional room will be a bi-plane suite. A second bi-plane room will allow JHBMC to

run simultaneous or staggered elective cases with two or more attending physicians. This will allow neuro IR to leverage its existing resources – both personnel and equipment – to serve a growing volume of patients, without having to hire more providers or purchase additional equipment. Further, the bi-plane room is multi-functional and has all the capabilities of a single-plane room. This includes various IR procedures such as line placements, drain insertions, peripheral angiograms, vertebroplasty, lumbar punctures, CT myelograms etc. The bi-plane suite's multi-functional design will contribute to more efficient clinical operations.

- Central Sterile Processing (CSP) - with the new design, the CSP department physical space will be expanded. This will optimize CSP processing, particularly for "higher-security" supplies such as with OR cases. Specifically, the packing and prepping of the OR case carts can occur at one, consolidated location at CSP, instead of at multiple locations per the current model. The carts can then be transported to the OR with the appropriate level of standardization and security. This will greatly enhance the efficiency of CSP operations. In addition, CSP will be located directly under the ORs, which will reduce transport time.

- Conducive space for multi-disciplinary teams to co-locate, facilitating more effective and timely collaboration on patient treatment plans.

V. JHM DELIVERY SYSTEM:

The new design incorporates several enterprise-level strategies intended to enhance the operational efficiency of the Johns Hopkins Health System at large. See the following:

- Department of Orthopedics – the new design is essential to JHM's strategy for orthopedics. Currently, JHBMC operates the Johns Hopkins Health System's sole academic-based joint replacement program, with all services consolidated at the JHBMC campus. This strategy yields great efficiencies, as JHM does not have to operate parallel or duplicate joint replacement services at another site and faculty physicians are not traveling between the campuses as frequently. However, in order for this consolidation of services to be successful, JHMBC facilities must be comparable to what is available at JHH for this service. Private rooms and adequately sized ORs are minimal requirements.

- NICU – the new design will allow JHBMC to execute a coordinated, health system-level strategy. The JHBMC campus will serve lower-risk, lower-acuity patients, while higher-acuity neonates would be directed to the JHH campus. Further, by expanding capacity in the NICU, the new design will allow JHBMC to support JHH when JHH is experiencing volume challenges. Through this strategy, JHM will be able to allocate operational and clinical resources to its NICU services more efficiently, thereby enhancing performance at both campuses. Moreover, with the new design, JHBMC's NICU will have the same, high-quality facilities and amenities as at other Johns Hopkins entities, thereby contributing to a greater continuity of services and programs across all of JH health system.

Standard 04B(12) – <u>Patient Safety.</u>

The design of a hospital project shall take patient safety into consideration and shall include design features that enhance and improve patient safety. A hospital proposing to replace or expand its physical plant shall provide an analysis of patient safety features included for each facility or service being replaced or expanded, and document the manner in which the planning and design of the project took patient safety into account.

Applicant Response:

Construction of the New Inpatient Building and related renovations will result in a safer environment of care for patients and staff and a more reliable infrastructure that will minimize disruptions in care and reduce the need for mechanical support.

I. PROJECT PATIENT SAFETY GOALS:

During the planning process for the new inpatient building, leadership at JHBMC identified the following patient safety goals:

- Minimize physical, environmental and other safety-related risks for patients and staff
- Reduce the risk of infection by improving operational processes like building circulation and transitioning to all private patient rooms
- Provide sufficient and appropriate work space for clinical and support staff
- Standardize work flows and processes to promote ease of access and "usability"
- Build an environment of care with features that elevate satisfaction, protection and security for patients, families and employees
- Create an environment that enhances engagement with patients and families as full members of the interdisciplinary care team

II. GENERAL DESIGN FEATURES:

The following design features will be deployed to improve high-quality and safe patient care.

Private Rooms –Transitioning to nearly all private rooms is one of the two primary goals for this project, and it will contribute significantly to patient safety. The current semi-private rooms are associated with various environment of care deficiencies including promoting a cluttered physical space, elevating the risk of infection, causing delays in moving patients from the ED while waiting for an appropriate room, and causing patients to be moved during their admission to accommodate gender, infection, and level of care requirements. Here in greater detail are some of the safety benefits of private rooms:

- Elimination of various infection and contamination risks associated with semi-private rooms such as having potentially contagious patients share a bathroom or having to

perform procedures at the bedside in a cramped space with another patient in the room.

- Capacity to quickly admit patients who require isolation due to infection control issues. This represents a significant patient safety benefit to protect the health and wellness of other patients and staff and to move patients more quickly from the ED to an inpatient bed.

- Ability to adopt more consistent and uniform practices and procedures for infection control. With patient rooms that are all the same size and shape, infection control processes can be standardized throughout the NIB to optimize performance and maximize patient safety.

- Ample space for bed, clinical equipment, supplies and storage to enhance operational processes, workflows and through-put.

- Sufficient physical space and accommodations for patient families and visitors; recumbent sleep areas for family members and visitors to stay overnight.

- Superior confidentiality and privacy; allowing the patient care team to round and discuss cases in the room with the patient present, and allowing the patient and family to be more involved in the patient's care with enhanced engagement and communication with the provider team.

Infection Control – beyond the transition to all private patient rooms, the NIB includes various other features designed to enhance infection control processes and procedures at JHBMC including:

- Hand Hygiene - the new facility design will enhance hand hygiene. New hand washing stations, each equipped with a sink and towel dispenser and hands-free operation, will be available in every patient room and throughout the corridors. Waterless hand disinfectants will be available at the entrance of each patient room as well.

- ICU - each ICU room (except for the NICU) will be equipped with a toilet and lavatory located in a separate room for patient use. In addition to reducing the risk of infection, this feature will also allow staff to dispose of contaminated waste without having to transport through hospital corridors.

- Isolation Rooms – currently, due to constrained physical space and overcrowding, JHBMC has limited capacity to isolate sick patients. This can contribute to hospital-acquired infections and other complications. The new design will include dedicated isolation rooms with negative pressure and integrated space for supplies on the following units:

    - Adult Acute units will have four negative pressure isolation rooms
    - Adult ICU's will have two negative pressure isolation rooms
    - MICU will have four negative pressure isolation rooms

    - Pediatric Acute units will have two negative pressure isolation rooms

- Automated Dispensing System – the new facility design will include dedicated space on the units for clean supplies, soiled holding and medication supply rooms in order to minimize the possibility of cross-contamination. Automated dispensing systems such as Pyxis machines will be a key feature of the new medication supply rooms. All of these capabilities will be located within approximately 60-80 feet of each inpatient room, representing a significant enhancement over the existing layout. This improvement provides staff with easier and quicker access to clinical resources, allowing for more efficient clinical care and enhanced patient safety.

Co-location - various programs and services including the following will be strategically located in the new inpatient building to optimize the transportation and movement of patients and improve safety:

- Obstetrics – Labor & Delivery – currently, the inpatient OB unit is located in a different, adjacent building – the A building – from the L&D procedure suite (AA Building). The new design will position the Obstetrics inpatient unit and the L&D rooms directly adjacent to one another.

- Imaging - in the NIB, imaging services will be located directly adjacent to the Emergency Department. This represents a critical design feature as the ED refers a high percentage of patients to imaging services (52% in FY17). Locating these services in close proximity will yield efficiencies including reducing the amount of time for patient transport, decreasing a patient's average length of stay in the ED and improving general operational workflows.

- Neuro Interventional Radiology (IR) – in the NIB, neuro IR rooms will be relocated to within the imaging suite, directly adjacent to the Emergency Department. This will allow for stroke patients who present in the ED to be diagnosed and treated as quickly as possible. This increases safety by eliminating patient transport, reducing a patient's average length of stay and improving general operational workflows.

- Burn Unit – in the new design, the Burn unit will be located directly adjacent to a new dedicated Burn operating room. This will reduce patient transport.

Information Technology – the new inpatient building construction includes plans to leverage various forms of information technology to enhance patient safety. See the following examples:

- Computers with electronic medical records and patient information systems that are easily accessible for staff and "patient-facing" to enhance patient-provider interactions
- New advanced communication systems such as clinical communication devices that will eliminate overhead paging and monitor alarms to enhance staff communications
- Increased use of medical management systems like Pyxis to reduce medication errors
- New television-based, interactive instructional programs to improve patient

education around discharge orders
- New internet-based cameras in the operating rooms to allow virtual monitoring of procedures. This capability provides numerous benefits from facilitating a more rapid identification of critical events to allowing anesthesiologists to cover multiple rooms.
- Enhanced Wi-Fi capabilities throughout the renovated campus to better support technologies including panic alarms, video relay systems for non-English speaking patients, patient monitoring cameras and other communication systems.

Environment of Care – new upgrades and a modernized care delivery environment at JHBMC will greatly contribute to the provision of safe patient care. See the following examples:

- Patient and Family-Centered Care – the NIB includes numerous features designed to further advance patient and family-centered concepts and improve patient safety such as:

    - Private space in patient rooms for families and visitors to actively participate in the patient's care as well as dedicated space for clinical team collaboration and patient/family education
    - Direct, unencumbered access for patients to bathrooms by locating bathrooms on the headwall side of each patient room.
    - New harnesses and lifts for disabled patients will be built into the patient rooms. This improves safety by decreasing the risk of patient falls and certain injuries to staff. Further, by enhancing patient mobility, this feature will also improve clinical outcomes such as reducing hospital-acquired pressure ulcers and other complications related to immobility.
    - For bariatric patients, there will be a dedicated room on each adult acute, ICU and pediatric unit. Additionally, all patient and toilet room doors will be wider than building code to facilitate easy access for bariatric beds and patients.
    - Clear signage for easier wayfinding to reduce travel time and enhance patient satisfaction
    - Enhanced handicap access including ground-level building entrances with bi-parting sliding doors and bridge-level entrances will have power-operated doors.

- Noise Abatement - the NIB includes features for noise and vibration control to reduce the sound from routine operations and the physical plant. Minimizing noise pollution is an important strategy for enhancing patient safety and clinical outcomes by improving a patient's capacity for meaningful rest and recovery. Specific features include:

    - Sound-dampening panels in patient care areas to reduce sound from clinical staff
    - Patient room doors equipped with vision panels so that staff can observe inside while allowing the door remains closed, thereby reducing noise
    - Dropped ceiling soffits in staff work areas will reduce noise pollution
    - Rubber flooring in the NICU will dampen noise and vibration
    - Elimination of voice-announced fire alarm systems in the ICU. In the new

building, announcements will only occur at staff workstations to reduce noise.
    - Deployment of advanced communication devices such as clinical communication devices to eliminate noise from traditional paging and audible alarms systems.

- Flooring – the new building will be constructed using various advanced materials and resources designed to maximize patient safety. For instance, Vinyl Enhanced Tile (VET) flooring will be standard throughout the NIB. VET flooring is non-slip and provides superior traction as compared to traditional tiles, which will reduce patient falls and other accidents.

- Lighting – the NIB includes a new automated lighting system in patient rooms designed to improve safety for both patients and staff.

- Security - the NIB was designed with features to mitigate certain high security risks such as infant abduction. In particular, the new building will include an infant abduction prevention system, characterized by a sealed periphery and fully secured control of access to the Obstetrics unit. Additionally, “panic” buttons will be installed throughout the NIB at every staff work station in order to alert security officers to potential incidents.

- ICU Patient Visibility – new staff work stations will be decentralized and located directly outside of patient rooms in order to maximize the visibility and monitoring of patients in the ICU.

III. SERVICE LINE DESIGN FEATURES:

The new inpatient building includes design features that will enhance the provision of safe patient care across various service lines and clinical programs. See the following highlights:

Interventional Radiology -

- IR Room Design - the two new neuro IR rooms will be bi-plane fluoroscopy suites, which can be used for an expanded set of endovascular treatments, as compared to the current model. The rooms will be adjacent to each allow, which allows for the performance of two intra-arterial stroke cases simultaneously, a requirement for the program’s Joint Commission certification as a Comprehensive Stroke Center (CSC). Finally, the neuro IR rooms will be located in close proximity to the ED, in order to minimize the time from when a patient enters the ED to the start of the procedure, enhancing safe and effective patient care.

Obstetrics -

- Triage Rooms - the renovations include two incremental triage rooms for a total of five. This design change will improve patient safety by expanding capacity and access. T\he availability of more triage rooms will decrease wait times and other delays resulting from limited capacity.

- L&D ORs - the NIB design will address major safety challenges posed by the current operating rooms. The future C-section rooms will be larger than the current ones, allowing for enough physical space for all necessary supplies, equipment and staff.

Pediatrics / NICU -

- Neonatal delivery room resuscitation area - the unit does not currently have a suitable, dedicated area to care for neonatal critical care patients in the operating rooms. The new design will provide for an appropriate resuscitation space as well as dedicated space for equipment, which will enhance patient safety.

- Nutrition Room - currently, staff prepare formula and other nutrition products in areas not designated for nutrition. This can lead to medication errors and contamination which could compromise an infant's health and safety. The new design will have dedicated nutrition rooms for breastfeeding and formula preparation, which will minimize opportunities for errors or contamination.

Acute Care -

The new building generally provides a uniform and consistent design for all acute care rooms, including the ICUs. This will help minimize certain types of medical errors such as those occurring during a critical event. In addition, the Supply, Nutrition and Linen (SNL) rooms are in the same general area on each unit, and will have adequate physical space for storage. Staff will no longer have to search for necessary clinical supplies in a different room or unit. This will reduce the risk of treatment errors.

Operating Rooms (ORs) -

The design and construction of four new operating rooms, to replace four existing outdated and undersized operating rooms, will improve patient safety. The current ORs are undersized, which represents a significant challenge for maintaining a sterile environment, particularly for longer surgical cases.

Of the fourteen operating rooms currently in use, ten were built in 1994 during original construction of the Francis Scott Key Pavilion. They range in size from 410 square feet (SF) to 529 SF, with an average size of 454 SF and eight out of ten less than 500 SF. The additional four ORs were opened in 2010. They range from 502 to 658 SF in size and are much better able to accommodate modern equipment and technology.

Equipment used in ORs today takes up significantly more space than it did in the past. Examples of such equipment include robots, C-arms, electronic monitoring and status tracking systems, and intraoperative imaging equipment. This equipment requires space, power, and information technology support, all in the proper locations. Undersized ORs create undesirable and unsafe conditions by:

- Infringing on circulation and access to the room
- Electrical cables creating tripping hazards and risking damage

- Inadequate space for documentation in the room
- Inadequate space for anesthesia clinical staff (in 2018 FGI will mandate 50 SF in each OR be dedicated to anesthesia to address this issue)

Additionally, undersized ORs are simply inadequate for some types of cases, particularly for certain specialties such as cardiovascular, orthopedic, and neurological procedures, which can create scheduling challenges.

The four new operating rooms being constructed as part of this project will replace four of the oldest and smallest existing operating rooms. This will expand the number of larger, more modern ORs from 4 to 8, and reduce the complement of older, smaller ORs from 10 to 6. This will reduce overcrowding, increase capacity for performing cases that require more space, and increase flexibility in scheduling more complex cases requiring more equipment and personnel.

One of the four new operating rooms will be dedicated for burn patients. This room will include the capability for staff to adjust temperature and humidity, which is a critical design feature to optimize the treatment, recovery and safety of burn patients.

The new design includes a larger, expanded PACU with enhanced capacity. The new PACU will have enough physical space for all supplies, equipment and staff as well as the ability to accept overflow patients from other clinical areas as needed. Further, the new design will collocate the PACU and ORs on the same floor, which will greatly reduce the time needed to transport surgical patients and will streamline patient care.

Standard .04B(13) – <u>Financial Feasibility.</u>

A hospital capital project shall be financially feasible and shall not jeopardize the long-term financial viability of the hospital.

(a) Financial projections filed as part of a hospital Certificate of Need application must be accompanied by a statement containing each assumption used to develop the projections.

(b) Each applicant must document that:

(i) Utilization projections are consistent with observed historic trends in use of the applicable service(s) by the service area population of the hospital or State Health Plan need projections, if relevant;

(ii) Revenue estimates are consistent with utilization projections and are based on current charge levels, rates of reimbursement, contractual adjustments and discounts, bad debt, and charity care provision, as experienced by the applicant hospital or, if a new hospital, the recent experience of other similar hospitals;

(iii) Staffing and overall expense projections are consistent with utilization projections and are based on current expenditure levels and reasonably anticipated future staffing levels as experienced by the applicant hospital, or, if a new hospital, the recent experience of other similar hospitals; and

(iv) The hospital will generate excess revenues over total expenses (including debt service expenses and plant and equipment depreciation), if utilization forecasts are achieved for the specific services affected by the project within five years or less of initiating operations, with the exception that a hospital may receive a Certificate of Need for a project that does not generate excess revenues over total expenses even if utilization forecasts are achieved for the services affected by the project when the hospital can demonstrate that overall hospital financial performance will be positive and that the services will benefit the hospital's primary service area population.

Applicant Response:

As presented in Table H (Exhibit 1H), the proposed project is financially feasible. The financial feasibility is based on the following assumptions:

- Utilization projections of hospital services are based on JHBMC's historical market share applied to service area utilization, taking into account changes in population and utilization rates. (see Table F in Exhibit 1F)

- Revenue projections are consistent with utilization projections and are based on current Global Budget Revenue charge levels, rates of reimbursement, contractual adjustments and discounts, bad debt, and charity care provision, as experienced by JHBMC (see Tables G and H in Exhibit 1G and Exhibit 1H)

- Staffing and overall expense projections that are consistent with utilization projections and are based on current expenditure levels and reasonably anticipated future staffing levels as experienced by JHBMC (see Table L in Exhibit 1L)

- Depreciation, interest, and other projected operating costs associated with the new building and renovated space reflect expected useful lives of assets, market financing costs for Johns Hopkins Health System (JHHS) and building related operating costs per square foot based on JHHS experience (see Tables G and H in Exhibit 1G and Exhibit 1H)

Assumptions associated with the financial projections are summarized in schedules following Table G and H, as well as in Section 10.24.01.08G(3)(d) related to the viability of the proposal. Tables G and H reflect an assumption of an increase in regulated revenue, as described in Adverse Impact (Standard .04B(4)), and projected performance improvements.

Based on these assumptions, JHBMC is projected to experience a positive Excess of Revenue over Expense in each year of the financial projection.

Standard .04B(14) – <u>Emergency Department Treatment Capacity and Space.</u>

(a) An applicant proposing a new or expanded emergency department shall classify service as low range or high range based on the parameters in the most recent edition of *Department Design: A Practical Guide to Planning for the Future* from the American College of Emergency Physicians. The number of emergency department treatment spaces and the departmental space proposed by the applicant shall be consistent with the range set forth in the most recent edition of the American College of Emergency Physicians *Emergency Department Design: A Practical Guide to Planning for the Future*, given the classification of the emergency department as low or high range and the projected emergency department visit volume.

(b) In developing projections of emergency department visit volume, the applicant shall consider, at a minimum:

- **(i) The existing and projected primary service areas of the hospital, historic trends in emergency department utilization at the hospital, and the number of hospital emergency department service providers in the applicant hospital's primary service areas;**
- **(ii) The number of uninsured, underinsured, indigent, and otherwise underserved patients in the applicant's primary service area and the impact of these patient groups on emergency department use;**
- **(iii) Any demographic or health service utilization data and/or analyses that support the need for the proposed project;**
- **(iv) The impact of efforts the applicant has made or will make to divert non-emergency cases from its emergency department to more appropriate primary care or urgent care settings; and**
- **(v) Any other relevant information on the unmet need for emergency department or urgent care services in the service area.**

Applicant Response:

Standard does not apply.

Standard .04B(15) – Emergency Department Expansion.

A hospital proposing expansion of emergency department treatment capacity shall demonstrate that it has made appropriate efforts, consistent with federal and state law, to maximize effective use of existing capacity for emergent medical needs and has appropriately integrated emergency department planning with planning for bed capacity, and diagnostic and treatment service capacity. At a minimum:

- **(a) The applicant hospital must demonstrate that, in cooperation with its medical staff, it has attempted to reduce use of its emergency department for non-emergency medical care. This demonstration shall, at a minimum, address the feasibility of reducing or redirecting patients with non-emergent illnesses, injuries, and conditions, to lower cost alternative facilities or programs;**
- **(b) The applicant hospital must demonstrate that it has effectively managed its existing emergency department treatment capacity to maximize use; and**
- **(c) The applicant hospital must demonstrate that it has considered the need for bed and other facility and system capacity that will be affected by greater volumes of emergency department patients.**

Applicant Response:

Standard does not apply.

Standard .04B(16) – <u>Shell Space.</u>

(a) Unfinished hospital shell space for which there is no immediate need or use shall not be built unless the applicant can demonstrate that construction of the shell space is cost effective.

(b) If the proposed shell space is not supporting finished building space being constructed above the shell space, the applicant shall provide an analysis demonstrating that constructing the space in the proposed time frame has a positive net present value that:

- **(i) Considers the most likely use identified by the hospital for the unfinished space;**
- **(ii) Considers the time frame projected for finishing the space; and**
- **(iii) Demonstrates that the hospital is likely to need the space for the most likely identified use in the projected time frame.**

(c) Shell space being constructed on lower floors of a building addition that supports finished building space on upper floors does not require a net present value analysis. Applicants shall provide information on the cost, the most likely uses, and the likely time frame for using such shell space.

(d) The cost of shell space included in an approved project and those portions of the contingency allowance, inflation allowance, and capitalized construction interest expenditure that are based on the construction cost of the shell space will be excluded from consideration in any rate adjustment by the Health Services Cost Review Commission.

Applicant Response:

Standard does not apply.

COMAR 10.24.11. GENERAL SURGICAL SERVICES
.05A. GENERAL STANDARDS.

Standard .05(A)(1) – Information Regarding Charges.

Information regarding charges for surgical services shall be available to the public.

(a) A physician outpatient surgery center, ambulatory surgical facility, or a general hospital shall provide to the public, upon inquiry or as required by applicable regulations or law, information concerning charges for the full range of surgical services provided.

(b) The Commission shall consider complaints to the Consumer Protection Division in the Office of the Attorney General of Maryland or to the Maryland Insurance Administration when evaluating an applicant's compliance with this standard in addition to evaluating other sources of information.

(c) Making this information available shall be a condition of any CON issued by the Commission.

Applicant Response:

Please see response to COMAR 10.24.10.04A.01 Information Regarding Charges.

Standard .05(A)(2) – <u>Information Regarding Procedure Volume.</u>

A hospital, physician outpatient surgery center, or ASF shall provide to the public upon inquiry information concerning the volume of specific surgical procedures performed at the location where an individual has inquired. A hospital, POSC, or ASF shall provide the requested information on surgical procedure volume for the most recent 12 months available, updated at least annually.

Applicant Response:

Johns Hopkins Bayview Medical Center will provide information concerning the volume of specific surgical procedures performed on the JHBMC campus as requested.

Standard .05(A)(3) – <u>Charity Care Policy.</u>

(a) Each hospital and ambulatory surgical facility shall have a written policy for the provision of charity care that ensures access to services regardless of an individual's ability to pay and shall provide ambulatory surgical services on a charitable basis to qualified indigent persons consistent with this policy. The policy shall have the following provisions:

(i) Determination of Eligibility for Charity Care. Within two business days following a patient's request for charity care services, application for medical assistance, or both, the facility shall make a determination of probable eligibility.

(ii) Notice of Charity Care Policy. Public notice and information regarding the facility's charity care policy shall be disseminated, on an annual basis, through methods designed to best reach the facility's service area population and in a format understandable by the service area population. Notices regarding the facility's charity care policy shall be posted in the registration area and business office of the facility. Prior to a patient's arrival for surgery, the facility shall address any financial concerns of the patient, and individual notice regarding the facility's charity care policy shall be provided.

(iii) Criteria for Eligibility. A hospital shall comply with applicable State statutes and Health Services Cost Review Commission ("HSCRC") regulations regarding financial assistance policies and charity care eligibility. An ASF, at a minimum, shall include the following eligibility criteria in its charity care policies. Persons with family income below 100 percent of the current federal poverty guideline who have no health insurance coverage and are not eligible for any public program providing coverage for medical expenses shall be eligible for services free of charge. At a minimum, persons with family income above 100 percent of the federal poverty guideline but below 200 percent of the federal poverty guideline shall be eligible for services at a discounted charge, based on a sliding scale of discounts for family income bands. A health maintenance organization, acting as both the insurer and provider of health care services for members, shall have a financial assistance policy for its members that is consistent with the minimum eligibility criteria for charity care required of ASFs described in these regulations.

(b) A hospital with a level of charity care, defined as the percentage of total operating expenses that falls within the bottom quartile of all hospitals, as reported in the most recent HSCRC Community Benefit Report, shall demonstrate that its level of charity care is appropriate to the needs of its service area population.

(c) A proposal to establish or expand an ASF for which third party reimbursement is available, shall commit to provide charitable surgical services to indigent patients that are equivalent to at least the average amount of charity care provided by ASFs in the most recent year reported, measured as a percentage of total operating expenses. The applicant shall demonstrate that:

(i) Its track record in the provision of charitable health care facility services supports the credibility of its commitment; and

(ii) It has a specific plan for achieving the level of charitable care provision to which it is committed.

(iii) If an existing ASF has not met the expected level of charity care for the two most recent years reported to MHCC, the applicant shall demonstrate that its historic level of charity care was appropriate to the needs of the service area population.

(d) A health maintenance organization, acting as both the insurer and provider of health care services for members, if applying for a Certificate of Need for a surgical facility project, shall make a commitment to provide charitable services to indigent patients. Charitable services may be surgical or non-surgical and may include charitable programs that subsidize health plan coverage. At a minimum, the amount of charitable services provided as a percentage of total operating expenses for the health maintenance organization will be equivalent to the average amount of charity care provided statewide by ASFs, measured as a percentage of total ASF expenses, in the most recent year reported. The applicant shall demonstrate that:

(i) Its track record in the provision of charitable health care facility services supports the credibility of its commitment; and

(ii) It has a specific plan for achieving the level of charitable care provision to which it is committed.

(iii) If the health maintenance organization's track record is not consistent with the expected level for the population in the proposed service area, the applicant shall demonstrate that its historic level of charity care was appropriate to the needs of the population in the proposed service area.

Applicant Response:

Please see response to COMAR 10.24.10.04A.02 Charity Care Policy.

Standard .05(A)(4) – <u>Quality of Care.</u>

A facility providing surgical services shall provide high quality care.

(a) An existing hospital or ambulatory surgical facility shall document that it is licensed, in good standing, by the Maryland Department of Health.

(b) A hospital shall document that it is accredited by the Joint Commission.

(c) An existing ambulatory surgical facility or POSC shall document that it is:

- **(i) In compliance with the conditions of participation of the Medicare and Medicaid programs;**
- **(ii) Accredited by the Joint Commission, the Accreditation Association for Ambulatory Health Care, the American Association for Accreditation of Ambulatory Surgery Facilities, or another accreditation agency recognized by the Centers for Medicare and Medicaid as acceptable for obtaining Medicare certification; and**
- **(iii) A provider of quality services, as demonstrated by its performance on publicly reported performance measures, including quality measures adopted by the Centers for Medicare and Medicaid Services. The applicant shall explain how its ambulatory surgical facility or each POSC, as applicable, compares on these quality measures to other facilities that provide the same type of specialized services in Maryland.**

(d) A person proposing the development of an ambulatory surgical facility shall demonstrate that the proposed facility will:

- **(i) Meet or exceed the minimum requirements for licensure in Maryland in the areas of administration, personnel, surgical services provision, anesthesia services provision, emergency services, hospitalization, pharmaceutical services, laboratory and radiologic services, medical records, and physical environment; and**
- **(ii) Obtain accreditation by the Joint Commission, the Accreditation Association for Ambulatory Health Care, or the American Association for Accreditation of Ambulatory Surgery Facilities within two years of initiating service at the facility or voluntarily suspend operation of the facility.**

(e) An applicant or a related entity that currently or previously has operated or owned a POSC or ambulatory surgical facility, in Maryland or outside of Maryland, in the five years prior to the applicant's filing of a request for exemption request to establish an

ASF, shall address the quality of care provided at each location through the provision of information on licensure, accreditation, performance metrics, and other relevant information.

Applicant Response:

Please see response to COMAR 10.24.10.04A.03 Quality of Care.

Standard .05A(4) – <u>Transfer Agreements.</u>

(a) Each ASF shall have written transfer and referral agreements with hospitals capable of managing cases that exceed the capabilities of the ASF.

(b) Written transfer agreements between hospitals shall comply with Department of Health regulations implementing the requirements of Health-General Article §19-308.2.

(c) Each ASF shall have procedures for emergency transfer to a hospital that meet or exceed the minimum requirements in COMAR 10.05.05.09.

Applicant Response:

(a) For any cases that exceed the capabilities of Johns Hopkins Bayview Medical Center, patients are transferred to Johns Hopkins Hospital.

(b) Because all transfers occur between two Johns Hopkins Health System hospitals, agreements managing the transfer of patients are handled internally.

(c) Standard does not apply.

COMAR 10.24.11. GENERAL SURGICAL SERVICES
.05B. Project Review Standards.

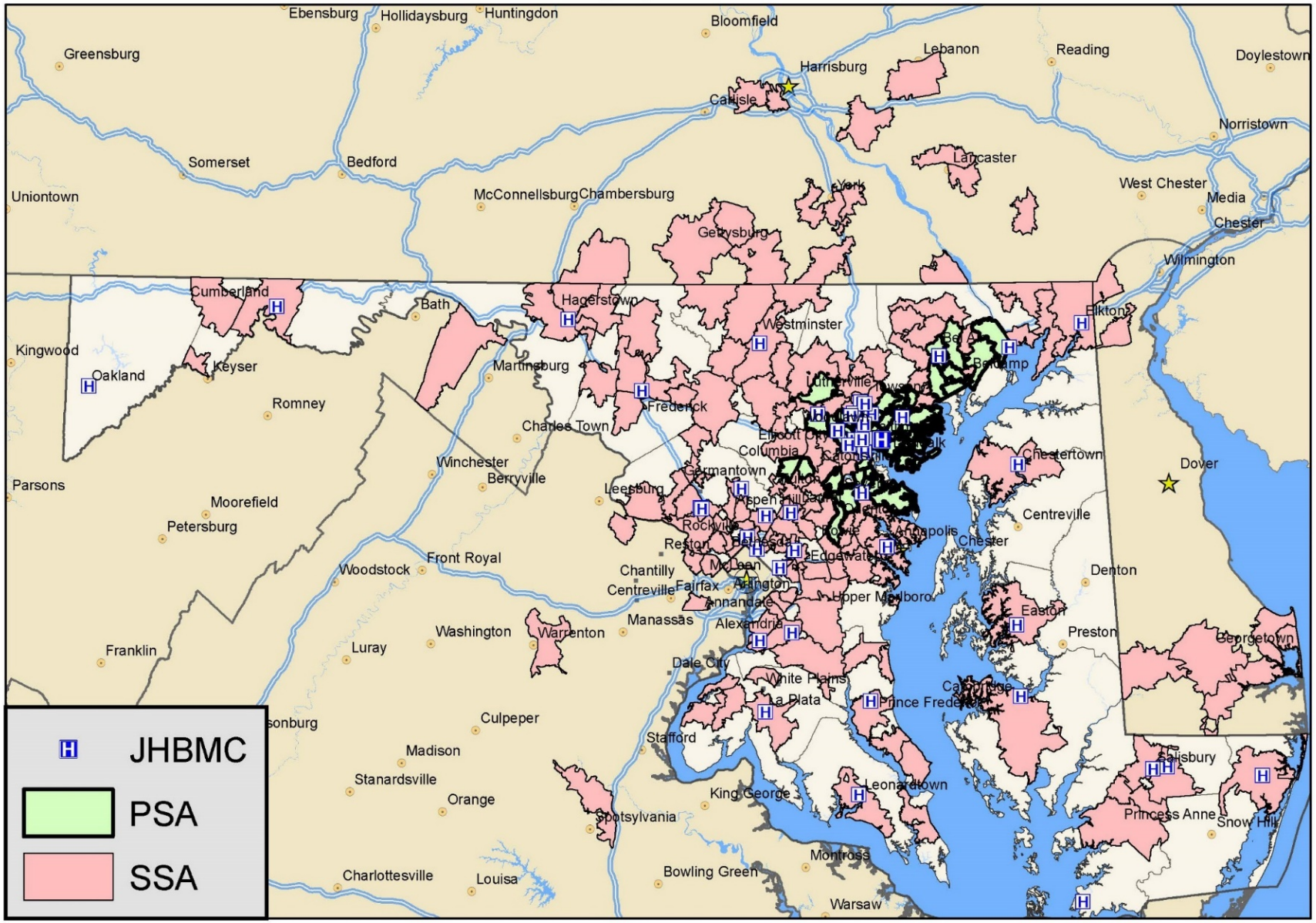
Standard .05B(1) – Service Area.

An applicant proposing to establish a new hospital providing surgical services or a new ambulatory surgical facility shall identify its projected service area. An applicant proposing to expand the number of operating rooms at an existing hospital or ambulatory surgical facility shall document its existing service area, based on the origin of patients served.

Applicant Response:

The applicant used CY2016 JHBMC internal inpatient and outpatient data to determine the surgical primary and secondary service areas. The discharges by primary (top 60%) and secondary (next 25% of discharges) surgical service areas are detailed in Exhibit 15. The primary and secondary service area are mapped below:

JHBMC Surgery Total Service Area



Standard .05B(2) – <u>Need- Minimum Utilization for Establishment of a New or Replacement Facility.</u>

An applicant proposing to establish or replace a hospital or ambulatory surgical facility shall:

(a) Demonstrate the need for the number of operating rooms proposed for the facility, consistent with the operating room capacity assumptions and other guidance included in Regulation .07 of this chapter.

(b) Provide a needs assessment demonstrating that each proposed operating room is likely to be utilized at optimal capacity or higher levels within three years of the initiation of surgical services at the proposed facility, consistent with Regulation .07 of this chapter.

(c) An applicant proposing the establishment or replacement of a hospital shall submit a needs assessment that includes the following:

(i) Historic trends in the use of surgical facilities for inpatient and outpatient surgical procedures by the new or replacement hospital's likely service area population;
(ii) The operating room time required for surgical cases projected at the proposed new or replacement hospital by surgical specialty or operating room category; and
(iii) In the case of a replacement hospital project involving relocation to a new site, an analysis of how surgical case volume is likely to change as a result of changes in the surgical practitioners using the hospital.

(d) An applicant proposing the establishment of a new ambulatory surgical facility shall submit a needs assessment that includes the following:

(i) Historic trends in the use of surgical facilities for outpatient surgical procedures by the proposed facility's likely service area population;

(ii) The operating room time required for surgical cases projected at the proposed facility by surgical specialty or, if approved by Commission staff, another set of categories; and

(iii) Documentation of the current surgical caseload of each physician likely to perform surgery at the proposed facility.

Applicant Response:

The applicant is not seeking to expand surgical capacity. Rather, the applicant is seeking to replace four of JHBMC's current 14 mixed use ORs with new state of the art ORs. The four ORs which will be taken off line are among the smallest in the operating room suite.

Ten of the 14 ORs were built in 1994, and are not sufficient in size to house the equipment necessary for contemporary complex surgery. Equipment such as Brain Lab and surgical robots take up a significant footprint and are not usable in several of the existing rooms. By creating four larger rooms, the OR suite will be more efficient, permitting greater flexibility in scheduling OR cases.

Historical OR Volumes

Calendar Year	OR Cases			OR Minutes		
	Inpt	Outpt	Total	Inpt	Outpt	Total
2012	5,144	5,256	10,400	998,757	490,434	1,489,286
2013	4,685	5,503	10,188	965,843	521,392	1,487,265
2014	4,834	5,724	10,558	942,959	551,473	1,494,446
2015	4,465	5,422	9,887	868,037	534,970	1,403,406
2016	4,771	5,120	9,891	889,127	523,822	1,412,949

JHBMC has projected future need based on the CY2016 surgical use rate by zip code in JHBMC's surgical primary and secondary service areas. See Exhibit 16.

JHBMC OR Need Through 2025

In calculating the need for ORs, the applicant used 25 minutes of turnaround time ("TAT") per case. On average, the TAT time JHBMC was 41 minutes in FY2017.

The projections below demonstrate that JHBMC will need 15 ORs in 2024. However, the applicant requests 14 ORs as it expects even more hospital-based surgical activity to shift to non-hospital settings over the next five years.

	2016	2025
OR Cases	9,891	10,349
Minutes / Case	143	143
OR Minutes	1,412,949	1,479,926
TAT Minutes / Case	41	25
TAT Minutes		258,728
Total Minutes		1,738,654
Capacity: Minutes / OR		114,000
Needed ORs		**15**

Standard .05B(3) – <u>Need - Minimum Utilization for Expansion of An Existing Facility.</u>

An applicant proposing to expand the number of operating rooms at an existing hospital or ambulatory surgical facility shall:

(a) Demonstrate the need for each proposed additional operating room, utilizing the operating room capacity assumptions and other guidance included at Regulation .07 of this chapter;

(b) Demonstrate that its existing operating rooms were utilized at optimal capacity in the most recent 12-month period for which data has been reported to the Health Services Cost Review Commission or to the Maryland Health Care Commission; and

(c) Provide a needs assessment demonstrating that each proposed operating room is likely to be utilized at optimal capacity or higher levels within three years of the completion of the additional operating room capacity, consistent with Regulation .07 of this chapter. The needs assessment shall include the following:

(i) Historic and projected trends in the demand for specific types of surgery among the population in the proposed service area;
(ii) Operating room time required for surgical cases historically provided at the facility by surgical specialty or operating room category; and
(iii) Projected cases to be performed in each proposed additional operating room.

Applicant Response:

Standard does not apply.

Standard .05B(4) – <u>Design Requirements.</u>

Floor plans submitted by an applicant must be consistent with the current Facility Guidelines Institute's Guidelines for Design and Construction of Health Care Facilities (FGI Guidelines):

(a) A hospital shall meet the requirements in current Section 2.2 of the FGI Guidelines.

(b) An ASF shall meet the requirements in current Section 3.7 of the FGI Guidelines.

(c) Design features of a hospital or ASF that are at variance with the current FGI Guidelines shall be justified. The Commission may consider the opinion of staff at the Facility Guidelines Institute, which publishes the FGI Guidelines, to help determine whether the proposed variance is acceptable.

Applicant Response:

Please see Exhibit 17 for a letter from Array Architects confirming that the architectural design of the operating rooms suite complies with Section 2.2 of the 2014 version of the FGI Guidelines.

Standard .05B(5) – <u>Support Services.</u>

Each applicant shall agree to provide laboratory, radiology, and pathology services as needed, either directly or through contractual agreements.

Applicant Response:

Johns Hopkins Bayview Medical Center provides laboratory, radiology, and pathology services on-site.

Standard .05B(6) – <u>Patient Safety.</u>

The design of surgical facilities or changes to existing surgical facilities shall include features that enhance and improve patient safety. An applicant shall:

(a) Document the manner in which the planning of the project took patient safety into account; and

(b) Provide an analysis of patient safety features included in the design of proposed new, replacement, or renovated surgical facilities.

Applicant Response:

The new inpatient building includes various design features that will modernize and upgrade the surgical facilities at JHBMC in order to enhance the provision of safe patient care. See the following highlights:

Operating Rooms (ORs) -

The design and construction of four new operating rooms, to replace four existing outdated and undersized operating rooms, will improve patient safety. The current ORs are undersized, which represents a significant challenge for maintaining a sterile environment, particularly for longer surgical cases.

Of the fourteen operating rooms currently in use, ten were built in 1994 during original construction of the Francis Scott Key Pavilion. They range in size from 410 square feet (SF) to 529 sf, with an average size of 454 SF and eight out of ten less than 500 SF. The additional four ORs were opened in 2010. They range from 502 to 658 SF in size and are much better able to accommodate modern equipment and technology.

Equipment used in ORs today takes up significantly more space than it did in the past. Examples of such equipment include robots, C-arms, electronic monitoring and status tracking systems, and intraoperative imaging equipment. This equipment requires space, power, and information technology support, all in the proper locations. Undersized ORs create undesirable and unsafe conditions by:

- Infringing on circulation and access to the room
- Electrical cables creating tripping hazards and risking damage
- Inadequate space for documentation in the room
- Inadequate space for anesthesia clinical staff (in 2018 FGI will mandate 50 SF in each OR be dedicated to anesthesia to address this issue)

Additionally, undersized ORs are simply inadequate for some types of cases, particularly for certain specialties such as cardiovascular, orthopedic, and neurological procedures, which can create scheduling challenges.

The four new operating rooms being constructed as part of this project will replace four

of the oldest and smallest existing operating rooms. This will expand the number of larger, more modern ORs from 4 to 8, and reduce the complement of older, smaller ORs from 10 to 6. This will reduce overcrowding, increase capacity for performing cases that require more space, and increase flexibility in scheduling more complex cases requiring more equipment and personnel.

One of the four new operating rooms will be dedicated for burn patients. This room will include the capability for staff to adjust temperature and humidity, which is a critical design feature to optimize the treatment, recovery and safety of burn patients.

The new design includes a larger, expanded PACU with enhanced capacity. The new PACU will have enough physical space for all supplies, equipment and staff as well as the ability to accept overflow patients from other clinical areas as needed. Further, the new design will collocate the PACU and ORs on the same floor, which will greatly reduce the time needed to transport surgical patients and will streamline patient care.

Standard .05B(7) – <u>Construction Costs.</u>

The cost of constructing surgical facilities shall be reasonable and consistent with current industry cost experience.

(a) Hospital projects.

(i) The projected cost per square foot of a hospital construction or renovation project that includes surgical facilities shall be compared to the benchmark cost of good quality Class A hospital construction given in the Marshall Valuation Service® guide, updated using Marshall Valuation Service® update multipliers, and adjusted as shown in the Marshall Valuation Service® guide as necessary for site terrain, number of building levels, geographic locality, and other listed factors.

(ii) If the projected cost per square foot exceeds the Marshall Valuation Service® benchmark cost, any rate increase proposed by the hospital related to the capital cost of the project shall not include:

1. The amount of the projected construction cost and associated capitalized construction cost that exceeds the Marshall Valuation Service® benchmark; and

2. Those portions of the contingency allowance, inflation allowance, and capitalized construction interest expenditure that are based on the excess construction cost.

(b) Ambulatory Surgical Facilities.

(i) The projected cost per square foot of new construction shall be compared to the benchmark cost of good quality Class A construction given in the Marshall Valuation Service® guide, updated using Marshall Valuation Service® update multipliers, and adjusted as shown in the Marshall Valuation Service® guide as necessary for site terrain, number of building levels, geographic locality, and other listed factors. This standard does not apply to the costs of renovation or the fitting out of shell space.

(ii) If the projected cost per square foot of new construction exceeds the Marshall Valuation Service® benchmark cost by 15% or more, then the applicant's project shall not be approved unless the applicant demonstrates the reasonableness of the construction costs. Additional independent construction cost estimates or information on the actual cost of recently constructed surgical facilities similar to the proposed facility may be

provided to support an applicant's analysis of the reasonableness of the construction costs.

Applicant Response:

(a) Please see response to COMAR 10.24.10.04B(7) Construction Cost of Hospital Space.

(b) Standard does not apply.

Standard .05B(8) – <u>Financial Feasibility.</u>

A surgical facility project shall be financially feasible. Financial projections filed as part of an application that includes the establishment or expansion of surgical facilities and services shall be accompanied by a statement containing each assumption used to develop the projections.

(a) An applicant shall document that:

(i) Utilization projections are consistent with observed historic trends in use of each applicable service by the likely service area population of the facility;

(ii) Revenue estimates are consistent with utilization projections and are based on current charge levels, rates of reimbursement, contractual adjustments and discounts, bad debt, and charity care provision, as experienced by the applicant facility or, if a new facility, the recent experience of similar facilities;

(iii) Staffing and overall expense projections are consistent with utilization projections and are based on current expenditure levels and reasonably anticipated future staffing levels as experienced by the applicant facility, or, if a new facility, the recent experience of similar facilities; and

(iv) The facility will generate excess revenues over total expenses (including debt service expenses and plant and equipment depreciation), if utilization forecasts are achieved for the specific services affected by the project within five years of initiating operations.

(b) A project that does not generate excess revenues over total expenses even if utilization forecasts are achieved for the services affected by the project may be approved upon demonstration that overall facility financial performance will be positive and that the services will benefit the facility's primary service area population.

Applicant Response:

(a) Please see response to COMAR 10.24.10.04B(13) Financial Feasibility

(b) Please see response to COMAR 10.24.10.04B(13) Financial Feasibility

Standard .05B(9) – <u>Impact</u>

(a) An application to establish a new ambulatory surgical facility shall present the following data as part of its impact assessment, in addition to addressing COMAR 10.24.01.08G(3)(f):

- **(i) The number of surgical cases projected for the facility and for each physician and practitioner;**
- **(ii) A minimum of two years of historic surgical case volume data for each physician or practitioner, identifying each facility at which cases were performed and the average operating room time per case. Calendar year or fiscal year data may be provided as long as the time period is identified and is consistent for all physicians; and**
- **(iii) The proportion of case volume expected to shift from each existing facility to the proposed facility.**

(b) An application shall assess the impact of the proposed project on surgical case volume at general hospitals:

- **(i) If the applicant's needs assessment includes surgical cases performed by one or more physicians who currently perform cases at a hospital within the defined service area of the proposed ambulatory surgical facility that, in the aggregate, account for 18 percent or more of the operating room time in use at a hospital, then the applicant shall include, as part of its impact assessment, a projection of the levels of use at the affected hospital for at least three years following the anticipated opening of the proposed ambulatory surgical facility.**
- **(ii) The operating room capacity assumptions in Regulation .07A of this chapter and the operating room inventory rules in Regulation .07C of this chapter shall be used in the impact assessment.**

Applicant Response:

Standard does not apply.

Standard .05B(10) – <u>Preference in Comparative Reviews.</u>

In a comparative review of CON applications to establish an ambulatory surgical facility or provide surgical services, preference will be given to a project that commits to serve a larger proportion of charity care and Medicaid patients. An applicant's commitment to provide charity care will be evaluated based on its past record of providing such care and its proposed outreach strategies for meeting its projected level of charity care.

Applicant Response:

Standard does not apply.

COMAR 10.24.12 ACUTE HOSPITAL INPATIENT OBSTETRIC SERVICES
.04 REVIEW STANDARDS.

Standard .04(1) – Need.

All applicants must quantify the need for the number of beds to be assigned to the obstetric service, consistent with the approach outlined in Policy 4.1. Applicants for a new perinatal service must address Policy 4.1.

Applicant Response:

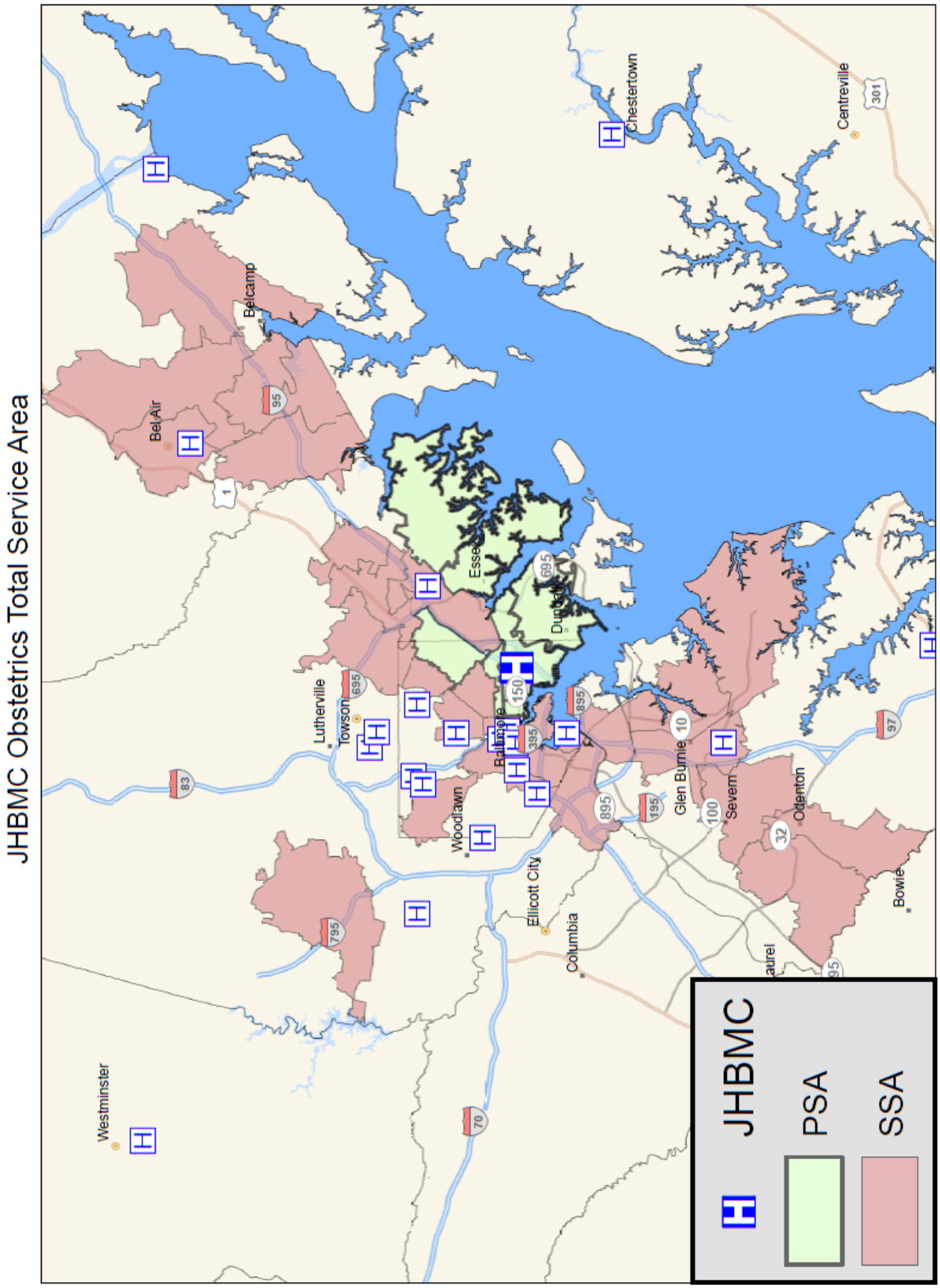
JHBMC Obstetrical Service Area

JHBMC is currently licensed to operate 22 acute obstetrical beds. JHBMC proposes to reduce the number of obstetrical beds in the new facility and operate 18 beds.
The applicant used CY2016 HSCRC inpatient data to project the need for obstetrical beds. The primary (zip codes contributing the top 60%) and secondary (zip codes contributing the next 25% of discharges) obstetrical service areas are shown in Table "JHBMC Obstetrical Primary and Secondary Service Areas" and mapped in "JHBMC Obstetrics Total Service Area" below:

JHBMC Obstetrical Primary and Secondary Service Areas
Discharges per Zip Code
Discharges defined by APR DRG
CY2016

Zip Code	Total Discharges	Cumulative %	Service Area
21224	400	27.7%	Primary
21222	177	39.9%	Primary
21220	76	45.2%	Primary
21221	75	50.3%	Primary
21205	63	54.7%	Primary
21206	58	58.7%	Primary
21231	40	61.5%	Primary
21237	36	64.0%	Secondary
21113	25	65.7%	Secondary
21234	24	67.4%	Secondary
21213	21	68.8%	Secondary
21236	20	70.2%	Secondary
21061	15	71.2%	Secondary
21144	14	72.2%	Secondary
21122	13	73.1%	Secondary
21009	12	73.9%	Secondary
21225	12	74.8%	Secondary
20755	11	75.5%	Secondary
21040	11	76.3%	Secondary
21214	11	77.0%	Secondary
21215	11	77.8%	Secondary
20653	9	78.4%	Secondary
21001	9	79.0%	Secondary
21085	9	79.7%	Secondary
21128	9	80.3%	Secondary
21217	9	80.9%	Secondary
21060	7	81.4%	Secondary
21202	7	81.9%	Secondary
21218	7	82.4%	Secondary
21227	7	82.8%	Secondary
21117	6	83.3%	Secondary
21223	6	83.7%	Secondary
21230	6	84.1%	Secondary
20678	5	84.4%	Secondary
21014	5	84.8%	Secondary
21015	5	85.1%	Secondary
All other zip codes	215		
Grand Total	**1,446**		

Source: JHBMC Internal Inpatient Data



The aggregate of both the primary and secondary obstetrical service areas will be

referred to as the JHBMC Obstetrical Service Area.

JHBMC Obstetrical Service Area Projections

To project need, JHBMC counted the number of discharges by age cohort (females age 15-44) and by zip code in the JHBMC Obstetrical Service Area from any Maryland hospital. JHBMC also counted the number of discharges from JHBMC. These data are shown below in Table “Obstetrical Service Area Discharges”:

Obstetrical Service Area Discharges
By zip code and age cohort
CY 2016

ZIP Code	ZIP City Name	2016 Market Total	JHBMC Total	JHBMC Share	2016 POP	2016 Use Rate	2025 POP	2025 Discharges	JHBMC 2025
20653	Lexington Park	404	9	2.2%	6,240	0.06	6,383	413	9
20678	Prince Frederick	120	5	4.2%	2,129	0.06	2,307	130	5
20755	Fort George G Meade	159	11	6.9%	2,481	0.06	2,408	154	11
21001	Aberdeen	349	9	2.6%	4,522	0.08	4,591	354	9
21009	Abingdon	458	12	2.6%	6,386	0.07	6,257	449	12
21012	Arnold	227		0.0%	3,864	0.06	4,059	238	0
21014	Bel Air	332	5	1.5%	6,650	0.05	6,858	342	5
21015	Bel Air	238	5	2.1%	5,325	0.04	5,764	258	5
21040	Edgewood	348	11	3.2%	5,419	0.06	5,224	335	11
21060	Glen Burnie	464	7	1.5%	6,618	0.07	6,758	474	7
21061	Glen Burnie	791	15	1.9%	11,834	0.07	11,464	766	15
21085	Joppa	180	9	5.0%	2,895	0.06	2,895	180	9
21113	Odenton	456	25	5.5%	7,526	0.06	7,619	462	25
21117	Owings Mills	749	6	0.8%	13,244	0.06	13,228	748	6
21122	Pasadena	665	13	2.0%	11,998	0.06	11,929	661	13
21128	Perry Hall	143	9	6.3%	2,823	0.05	2,953	150	9
21144	Severn	433	14	3.2%	6,907	0.06	7,120	446	14
21202	Baltimore	218	7	3.2%	5,324	0.04	5,386	221	7
21205	Baltimore	313	63	20.1%	3,521	0.09	3,409	303	61
21206	Baltimore	743	58	7.8%	11,053	0.07	10,301	692	54
21213	Baltimore	480	21	4.4%	6,824	0.07	6,466	455	20
21214	Baltimore	233	11	4.7%	4,117	0.06	3,664	207	10
21215	Baltimore	868	11	1.3%	11,358	0.08	11,107	849	11
21217	Baltimore	531	9	1.7%	8,404	0.06	8,023	507	9
21218	Baltimore	516	7	1.4%	12,169	0.04	11,603	492	7
21220	Middle River	569	76	13.4%	8,262	0.07	8,237	567	76
21221	Essex	611	75	12.3%	8,649	0.07	8,474	599	73
21222	Dundalk	789	177	22.4%	11,132	0.07	11,323	803	180
21223	Baltimore	426	6	1.4%	5,362	0.08	5,108	406	6
21224	Baltimore	1044	400	38.3%	12,540	0.08	11,827	985	377
21225	Brooklyn	615	12	2.0%	7,363	0.08	7,327	612	12
21227	Halethorpe	534	7	1.3%	7,265	0.07	7,160	526	7
21230	Baltimore	532	6	1.1%	9,035	0.06	8,456	498	6
21231	Baltimore	262	40	15.3%	4,546	0.06	4,210	243	37
21234	Parkville	822	24	2.9%	13,924	0.06	13,196	779	23
21236	Nottingham	461	20	4.3%	8,427	0.05	8,187	448	19
21237	Rosedale	410	36	8.8%	6,405	0.06	6,399	410	36
TOTAL		17,493	1231	7.0%	272,539	0.06	267,679	17,162	1,196

From these data, JHBMC calculated bed need using the following methodology.

1) For each zip code, JHBMC used population data from Truven Health Analytics for 2012, 2017 and 2022. JHBMC then calculated the compound average growth rate ("CAGR") for females age 15-44 for the difference between 2012 and 2017 to calculate the 2016 population. JHBMC also calculated the CAGR for the difference between 2017 and 2022. JHBMC used this CAGR to calculate the projected population in 2025.

2) The applicant calculated the 2016 obstetrical use rates that the zip code populations experienced at all hospitals.

3) The applicant applied these use rates to the 2025 female age 15-44 population by zip code to project the number of discharges from each zip code in 2025.

4) The applicant summed the total number of projected 2025 discharges by zip code.

5) The applicant applied JHBMC's 2016 market share in each zip code to the 2025 discharges to project the number of 2025 discharges that will occur at JHBMC.

6) Since these zip codes comprise JHBMC's primary and secondary service areas (85.1% of JHBMC's 2016 total obstetrical discharges), the applicant adjusted the projected discharges to account for out of service area discharges by dividing the service area discharges by 0.851. This resulted in a subtotal of all JHBMC projected obstetrical discharges.

7) The applicant projects that it will recapture a number of discharges (390) that would not have been reflected in the 2016 market share due to actions JHBMC is taking in obstetrics.

8) The applicant applied the 2016 ALOS to the Subtotal 2025 discharges to project the 2024 patient days.

9) The applicant divided the total number of 2025 projected patient days by 365 to obtain the average daily census ("ADC"). This resulted in an ADC of 13.

10) The applicant divided the ADC by a 72.5% occupancy rate.

These projections are shown below in Table "Obstetrical Service Area Need Projection".

Obstetrical Service Area
Need Projection
CY 2016

ZIP Code	ZIP City Name	2016 Market Total	JHBMC Total	JHBMC Share	2016 POP	2016 Use Rate	2025 POP	2025 Discharges	JHBMC 2025
TOTAL		17,493	1231	7.0%	272,539	0.06	267,679	17,162	1,196

Out of Area Discharges	215
Total 2025 Discharges	1,411

Bed Need Calculation

Total 2025 Discharges	1,411
Market Recapture*	390
Adjusted 2025 Discharges	1,801
2015 OB ALOS	2.6
2025 Patient Days	4,682
ADC	13
% Occupancy	73%
Beds Needed in 2025	18

Market Recapture

The projections result in an anticipated projected need for 18 Obstetrical beds, which JHBMC is proposing in the new facility.

JHBMC projects to recapture volume (390 cases) from within its Service Area as a result of modernizing its facilities.

JHBMC has lost obstetrical market share over time as its L&D suite has become less competitive in the market from the perspective of aesthetics and amenities. JHBMC can document patients who start their care with JHU faculty, but switch to a different provider and hospital once they make an initial visit to JHBMC's L&D and assess the facilities.

Please see *COMAR 10.24.12.04(6) – Physical Plant Design and New Technology* for a detailed discussion of JHBMC's current obstetrical facilities and the design features of the proposed New Inpatient Building.

A new state-of-the-art L&D suite will enable JHBMC to recapture lost market share in the local market by 2025.

Staffing Efficiency

While JHBMC projects growth in its obstetrics volume, and subsequently in its obstetrics patient days, it's projected staffing will be more efficient, accommodating more patient days per FTE, as outlined below:

	FTEs		
	FY2018 Budget (Current)	Change As A Result Of Project	FY2025 (Projected)
OB Inpatient Unit	27.03	2.43	29.46
L&D	56.76	12.90	69.66
TOTAL	**83.79**	**15.33**	**99.12**

	Patient Days		
	FY2018 Budget (Current)	Change As A Result Of Project	FY2025 (Projected)
Obstetrics	3,738	928	4,666

	FY2018 Budget (Current)	Change As A Result Of Project	FY2025 (Projected)
Patient Days/FTE	44.61	2.46	47.08

Standard .04(2) – <u>The Maryland Perinatal System Standards.</u>

Each applicant shall demonstrate the ability of the proposed obstetric program and nursery to comply with all essential requirements of the most current version of Maryland's Perinatal System Standards, as defined in the perinatal standards, for either a Level I or Level II perinatal center.

Applicant Response:

Johns Hopkins Bayview Medical Center (JHBMC) is designated as a Level IIIB Perinatal Referral Center from the Maryland Institute for Emergency Medical Services Systems ("MIEMSS"). JHBMC received MIEMSS' re-designation determination decision on June 3, 2013.

According to the decision, JHBMC "meets the standards specified in COMAR 30 .08.12 et seq. for re-designation as a Level IIIB Perinatal Referral Center for the State of Maryland." Designation as a Level IIIB Perinatal Referral Center is effective for a period not to exceed five (5) years from the date of designation, provided that JHBMC continues to meet the requirements for a Level IIIB Perinatal Referral Center, including, but not limited to those contained in COMAR 30.08.1 2 et seq.

Please see Exhibit 18.

JHBMC's most recent MIEMSS Perinatal Designation Survey visit concluded on November 16, 2017. JHBMC is currently awaiting results of the survey.

Standard .04(3) – <u>Charity Care Policy.</u>

Each hospital shall have a written policy for the provision of charity care for uninsured and under-insured patients to promote access to obstetric services regardless of an individual's ability to pay.

(a) The policy shall include provisions for, at a minimum, the following:
- **(i) annual notice by a method of dissemination appropriate to the hospital's patient population (for example, radio, television, newspaper);**
- **(ii) posted notices in the admissions office, business office and emergency areas within the hospital**
- **(iii) individual notice provided to each person who seeks services in the hospital at the time of community outreach efforts, prenatal services, preadmission, or admission, and**
- **(iv) within two business days following a patient's initial request for charity care services, application for medical assistance, or both, the facility must make a determination of probable eligibility.**

(b) Public notice and information regarding a hospital's charity care policy shall be in a format understandable by the target population.

Applicant Response:

JHBMC provides quality care to patients regardless of their ability to pay. The charity care policy is attached as Exhibit 7.

The policy is compliant with (a)(i), (ii), and (iii) as follows:

> "JHHS hospitals will publish the availability of Financial Assistance on a yearly basis in their local newspapers, and will post notices of availability at patient registration sites, Admissions/Business Office and Billing Office, and at the emergency department within each facility. Notice of availability will be posted on each hospital website, will be mentioned during oral communications, and will be sent to patients on patient bills. A Patient Billing and Financial Assistance Information Sheet will be provided to inpatients before discharge and will be available to all patients upon request. Page 1 of 19 of the Financial Assistance Policy, "Purpose", paragraph 3.

(a)(i) JHBMC's financial assistance policy is posted on the hospital website: http://www.hopkinsmedicine.org/patient_care/pay_bill/assistance_policies.html Notice of the Hospital's policy on charity care and financial assistance is published in the Baltimore Sun on an annual basis and was last published Saturday, May 6, 2017. A copy of the publication is included as Exhibit 8.

(a)(ii) Signs are also posted visible locations throughout the hospital in English and Spanish explaining the availability of financial assistance and providing contact information.

(a)(iii) JHBMC provides each patient registered for emergency care, same day care, or inpatient care a copy of the Financial Assistance Information Sheet (Exhibit 9). The financial assistance application, a copy of which is included as Exhibit 10, is given to every self-pay patient with instructions on how to apply, and contact information is available on the web link noted above. The same information is provided to all other patients upon request. This information is also available in Spanish. All patients encountered through the Care-A-Van, which conducts outreach targeting uninsured pregnant women, are provided with information about financial assistance and other charity care programs, such as SPRNAT and TAP.

(a)(iv) Applicants for financial assistance are given an indication of probable eligibility at least within two business days of their inquiry, but usually the same day: "All hospital applications will be processed within two business days and a determination will be made as to probable eligibility." Page 3 of 19 of the Financial Assistance Policy, number 3a.

(b) All financial assistance materials and information are provided and posted in English and Spanish. The majority of the self-pay indigent population seeking care at JHBMC are Spanish-speaking immigrants.

Standard .04(4) – <u>Medicaid Access.</u>

Each applicant shall provide a plan describing how the applicant will assure access to hospital obstetric services for Medical Assistance enrollees, including:

(a) an estimate of the number of Medical Assistance enrollees in its primary service area, and
(b) the number of physicians that have or will have admitting privileges to provide obstetric or pediatric services for women and infants who participate in the Medical Assistance program.

Applicant Response:

(a)

There are approximately 304,464 Medicaid enrollees (24.0%) in JHBMC's Obstetrics Service Area. A detailed count by zip code is copied below:

Johns Hopkins Bayview Medical Center
Insurance Coverage in JHBMC OB Service Area
2017

ZIP Code	ZIP City	Total	Medicaid	Medicaid Percent of Total
20653	Lexington Park	26,471	5,100	19.3%
20678	Prince Frederick	11,619	2,445	21.0%
20755	Fort George G Meade	9,600	777	8.1%
21001	Aberdeen	23,150	5,041	21.8%
21009	Abingdon	30,619	3,461	11.3%
21014	Bel Air	37,181	4,169	11.2%
21015	Bel Air	29,340	2,657	9.1%
21040	Edgewood	24,859	5,540	22.3%
21060	Glen Burnie	33,532	6,289	18.8%
21061	Glen Burnie	55,489	10,298	18.6%
21085	Joppa	16,562	2,450	14.8%
21113	Odenton	34,507	4,142	12.0%
21117	Owings Mills	56,863	6,523	11.5%
21122	Pasadena	62,956	7,439	11.8%
21128	Perry Hall	15,312	1,801	11.8%
21144	Severn	34,562	3,699	10.7%
21202	Baltimore	24,584	11,078	45.1%
21205	Baltimore	15,973	9,281	58.1%
21206	Baltimore	50,322	12,115	24.1%
21213	Baltimore	31,818	14,627	46.0%
21214	Baltimore	19,853	4,048	20.4%
21215	Baltimore	59,138	24,418	41.3%
21217	Baltimore	35,954	18,903	52.6%
21218	Baltimore	48,976	20,806	42.5%
21220	Middle River	40,794	7,809	19.1%
21221	Essex	43,258	10,073	23.3%
21222	Dundalk	57,113	13,424	23.5%
21223	Baltimore	25,589	14,451	56.5%
21224	Baltimore	50,945	13,058	25.6%
21225	Brooklyn	34,012	13,154	38.7%
21227	Halethorpe	34,310	6,797	19.8%
21230	Baltimore	35,058	9,261	26.4%
21231	Baltimore	16,434	4,853	29.5%
21234	Parkville	71,264	14,250	20.0%
21236	Nottingham	39,859	5,491	13.8%
21237	Rosedale	31,038	4,736	15.3%
TOTAL		**1,268,914**	**304,464**	24.0%

Source: Truven Health Analytics - Claritas

(b)

Johns Hopkins Bayview Medical Center provider serve all patients in need of service, including those on Medical Assistance. The number of physicians that have or will have admitting privileges to provide obstetric or pediatric services for women and infants who participate in the Medical Assistance program are listed below:

Gynecology-Obstetrics

- Number of physicians with admitting privileges: 67
- Nurse mid wives: 6
- Nurse practitioners: 6
- Physician assistants: 1

Pediatrics

- Number of physicians with admitting privileges: 37
- Number of physicians with admitting privilege, including neonatology: 48
- Nurse practitioners: 3
- Nurse practitioners, including neonatology: 19
- Physician assistants: 4 (no PAs privileged in neonatology)

Standard .04(5) – <u>Staffing.</u>

Each applicant shall provide information on the proposed staffing, associated number and type of FTEs, projected expenses per FTE category and total expenses, for labor and delivery, postpartum, nursery services, and other related services, including nurse staffing, non-nurse staffing and physician coverage, at year three and at maximum projected volumes; if applicable, current staffing and expenses should also be included.

Applicant Response:

Please see Exhibit 19 for detailed staffing information.

Total FTEs in the FY2018 Budget (current year), the proposed change in FTEs as a result of the project, and Projected FY2025 in the final year of project are summarized below:

	FTEs		
	FY2018 Budget (Current)	**Change As A Result Of Project**	**FY2025 (Projected)**
OB Inpatient Unit	27.03	2.43	29.46
Labor & Delivery	56.76	12.90	69.66
NICU	51.78	10.81	62.59

Total Salaries and Benefits in the FY2018 Budget (current year), the proposed change in salaries and benefits as a result of the project, and Projected FY2025 in the final year of project are summarized below:

	Salaries		
	FY2018 Budget (Current)	**Change As A Result Of Project**	**FY2025 (Projected)**
Total Salaries	$10,223,319	$2,029,374	$12,252,693
Benefits	$3,199,899	$635,194	$3,835,093
Total Salaries & Benefits	$13,423,218	$2,664,568	$16,087,786

Standard .04(6) – <u>Physical Plant Design and New Technology.</u>

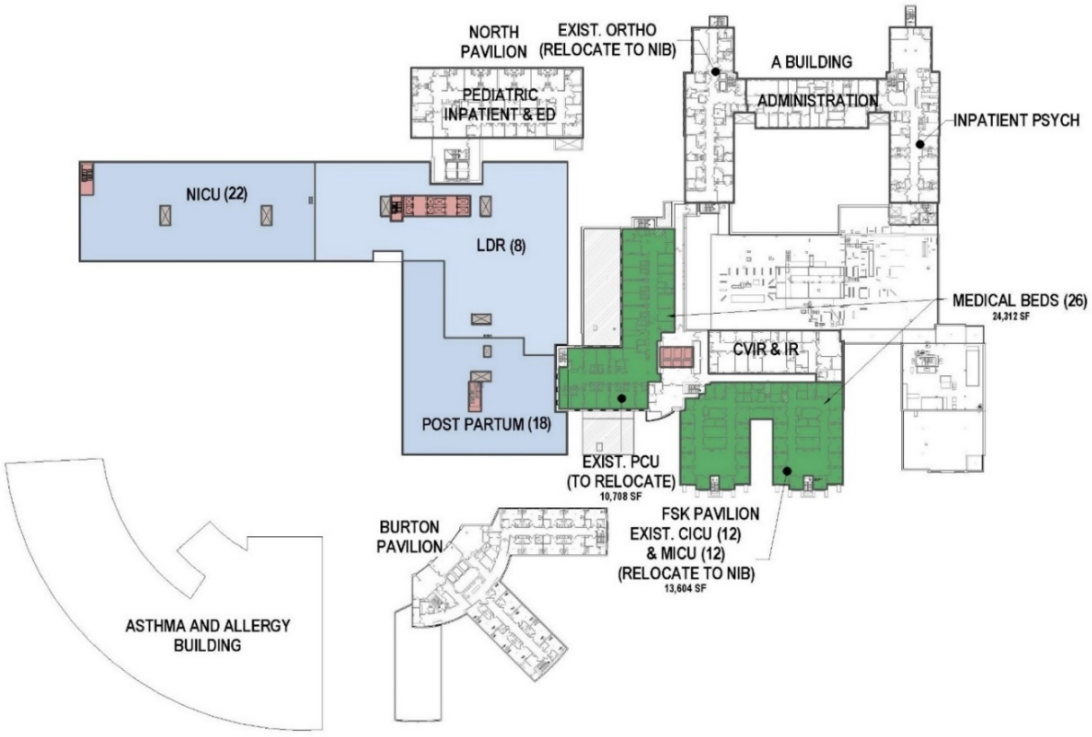
All applicants must describe the features of new construction or renovation that are expected to contribute to improvements in patient safety and/or quality of care, and describe expected benefits.

Applicant Response:

The new design features will improve the provision of high-quality and safe patient care for obstetrics services at JHBMC. With significant enhancements to key design features and a layout that better collocates facilities, the new construction will provide for a safer environment of care and more reliable infrastructure. In addition to being compliant with minimum FGI and other standards, the new design will result in more efficient care for patients, proper equipment storage and lighting, and the full participation of family members in the care process which contributes to improved patient safety and patient satisfaction.

The new construction at JHMBC will include the following obstetrics services and facilities:

- 18 Ante/Post-Partum Beds
- 8 Labor and Delivery Rooms
- 6 Newborn Nursery Bassinets
- 2 C-section Operating Rooms



NIB LEVEL 4 – Women and Children's

Level 4 will be the Women and Children's floor of the NIB, connecting directly to Level 4 of the North Pavilion, where the Pediatric Emergency Department and Pediatric Inpatient Unit are located.

Level 4 of the NIB will include

- 18 Ante/Post-Partum **B**eds
- 8 Labor and Delivery Rooms
- 5 Triage Rooms
- 6 Newborn Nursery Bassinets
- 2 C-section Operating Rooms
- 22 NICU beds

A core design feature of Level 4 is the co-located of maternal and child services and the strategic adjacencies it enables. Currently, the Obstetrics inpatient unit is located in a different building (A Building) than the Labor and Delivery procedure suite (AA Building). This makes patient transportation and clinical operations inconvenient and inefficient. On Level 4, all inpatient obstetrics services and facilities will be relocated from the oldest buildings on campus – the A and AA buildings – to the New Inpatient Building. The new construction will strategically locate the Labor and Delivery rooms and the Obstetrics unit directly adjacent to one another, which will greatly reduce transport time and improve clinical outcomes and patient safety.

OBSTETRICS INPATIENT UNIT

In the new 18-bed Obstetrics unit, the inpatient rooms will be right-sized to accommodate all patient, family and clinical requirements. Doing so will allow babies to remain in rooms with their mothers, and will also enhance clinical operations and infection control.

LABOR AND DELIVERY ROOMS

The new design provides for larger rooms with ample physical space for family support and proper placement of clinical equipment. The additional space will also better support the clinical teams, especially when additional staff, such as the NICU team, is called in for support.

TRIAGE ROOMS

The new design includes two incremental triage rooms for a total of five. Having additional capacity will improve patient safety and decrease wait times and other delays resulting from inadequate capacity.

C-SECTION OPERATING ROOMS

The C-section rooms will be right-sized, allowing for enough physical space for all necessary supplies, equipment and staff. The rooms will have an infant resuscitation area between them in order to stabilize critically ill neonates prior to transferring them to the new NICU, which will be immediately adjacent.

NEWBORN NURSERY BASSINETS

A modest six bed well baby nursery, which is in line with today's model of mothers and newborns rooming together for the majority of their stay, is located on the Ante/Post-Partum Unit.

OTHER FEATURES

Other specialty rooms that support the OB patients are located on the floor, including a Parent Education conference room, lactation training space and a fetal loss grieving room. Level 4 will also feature a Nutrition Room. Currently, staff prepare formula and other nutrition products in areas not designated for nutrition. This can lead to medication errors and contamination which could compromise an infant's health and safety. The new design will have dedicated nutrition rooms for breastfeeding and formula preparation, which will minimize opportunities for errors or contamination.

The co-located of all maternal and child services also allows JHBMC to have more secure system for safeguarding infants and children. The services can be better monitored and the unit can be locked, with fewer people entering and leaving the locked unit than when the services were housed separately.

Standard .04(7) - <u>Nursery.</u>

An applicant for a new perinatal service shall demonstrate that the level of perinatal care, including newborn nursery services, will be consistent with the needs of the applicant's proposed service area.

Applicant Response:

Standard does not apply.

Standard .04(8) - <u>Community Benefit Plan.</u>

Each applicant proposing to establish a new perinatal service will develop and submit a Community Benefit Plan addressing and quantifying the unmet community needs in obstetric and perinatal care within the applicant's anticipated service area population. This Plan should include an outreach program component, and should provide a detailed description of the manner in which the proposed perinatal service will meet these needs, and the resources required. At a minimum, the Community Benefit Plan must include:

- **(a) a needs assessment related to obstetric and nursery services for the proposed program's service area population, including a description of the manner in which the proposed perinatal service will satisfy unmet needs identified in the needs assessment,**
- **(b) measurable and time-limited goals and objectives for health status improvements pursuant to which the Plan can be evaluated; and**
- **(c) information on the structure, staffing and funding of the Plan;**
- **(d) documentation of community support and involvement in program planning for the Plan by other agencies, organizations or institutions which will be involved, directly or indirectly, with the Plan;**
- **(e) an implementation scheme for the Community Benefit Plan.**
- **(f) Applicants must commit to implementation of the Community Benefit Plan and continuing commitment to the Plan as a condition of Commission approval, and as an ongoing condition of providing obstetric services.**
- **(g) Applicants must agree to submit an Annual Report to the Commission which will include:**
  - **(i) an evaluation of the achievement of the goals and objectives of the Community Benefit Plan; and**
  - **(ii) information on staffing levels and the total costs of any programs implemented as part of the Community Benefit Plan.**

Applicant Response:

Standard does not apply.

Standard .04(9) - <u>Source of Patients.</u>

An applicant for a new obstetric service shall demonstrate that the majority of its patients will come from its primary service area.

Applicant Response:

Standard does not apply.

Standard .04(10) - <u>Non-metropolitan Jurisdictions.</u>

A proposed obstetrics program in non-metropolitan jurisdictions, as defined in the chapter, shall demonstrate that physicians with admitting privileges to provide obstetric services have offices for patient visits within the primary service area of the hospital.

Applicant Response:

Standard does not apply.

Standard .04(11) - <u>Designated Bed Capacity.</u>

An applicant for a new obstetric service shall designate a number of the beds from within the hospital's licensed acute care beds that will comprise the proposed obstetric program.

Applicant Response:

Standard does not apply.

Standard .04(12) - <u>Minimum Volume.</u>

(a) An applicant for a new obstetrics program must be able to demonstrate to the Commission's satisfaction that the proposed program can achieve a minimum volume of 1,000 admissions annually in metropolitan jurisdictions, or 500 cases annually in non-metropolitan jurisdictions, within 36 months of initiation of the program.

(b) As a condition of approval, the applicant shall accept a requirement that it will close the obstetric program, and its authority to operate will be revoked, if:

(i) it fails to meet the minimum annual volume for any 24 consecutive month period, and

(ii) it fails to provide good cause for its failure to attain the minimum volume, and a feasible corrective action plan for how it will achieve the minimum volume within a two year period.

Applicant Response:

Standard does not apply.

Standard .04(13) - <u>Impact on the Health Care System Designated.</u>

(a) An application for a new perinatal program will be approved only if its likely impact on the volumes of obstetric discharges at any existing obstetric program, after the three year start-up period, will not exceed 20 percent of an existing program's current or projected volume.

(b) When determining whether to approve an application for an obstetrics program the Commission will consider whether an existing program's payer mix of obstetrics patients will significantly change as a result of the proposed program, and the existing program will have to care for a disproportionate share of the indigent obstetrics patients in its service area; and

(c) When determining whether to approve an application for an obstetrics program the Commission will also consider the impact on a hospital with an existing program that has undertaken a capital expenditure project for which it has pledged pursuant to H-G Article § 19-120(k) not to increase rates for that project, so long as the pledge was based, at least in part, on assumptions about obstetric volumes.

(d) The Commission may consider evidence:

(i) from an applicant as to why rules (a) through (c) should not apply to the applicant, or;

(ii) from a very low volume program (fewer than 500 annual obstetric discharges) as to why a lower volume impact should apply.

Applicant Response:

Standard does not apply.

Standard .04(14) - <u>Financial Feasibility.</u>

Hospitals applying for a Level I or II perinatal program must clearly demonstrate that the hospital has the financial and non-financial resources necessary to implement the project, and that the average charge per admission for new perinatal programs will be less than the current statewide average charge for Level I and Level II perinatal programs. When determining whether to approve an application for an obstetric program, the Commission will consider the following:

- **(a) the applicant's projected sources of funds to meet the program's total expenses for the first three years of operation,**
- **(b) the proposed unit rates and/or average charge per case for the perinatal services,**
- **(c) evidence that the perinatal service will be financially feasible at the projected volumes and at the minimum volume standards in this Plan, and**
- **(d) the written opinions or recommendations of the HSCRC.**

Applicant Response:

Standard does not apply.

Standard .04(15) – <u>Outreach Program.</u>

Each applicant with an existing perinatal service shall document an outreach program for obstetric patients in its service area who may not have adequate prenatal care, and provide hospital services to treat those patients. The program shall address adequate prenatal care, prevention of low birth weight and infant mortality, and shall target the uninsured, under-insured, and indigent patients in the hospital's primary service area, as defined in COMAR 10.24.01.01.B.

Applicant Response:

JHBMC has a robust inventory of community outreach programs designed to improve the health of the community. JHBMC has a particularly strong set of programs targeting pregnant women who are uninsured and face financial and other barriers to accessing care. These programs are described below.

<u>Community Care-A-Van</u>

JHBMC engages obstetric patients in its primary service area who may not have adequate prenatal care via its Community Care-A-Van program. The Community Care-A-Van is a free medical mobile unit staffed by JHBMC health care professionals. It is the primary method of identifying pregnant women without insurance and facilitating enrollment in The JHBMC Pregnancy Care Program. The Care-A-Van has been on the road since June 1999, providing free, accessible medical care to some of the poorest of the working poor—uninsured families, mostly Latino immigrants—in southeast Baltimore. Care-A-Van providers see approximately 2,000 adults and children per year, and provide various services including primary medical care, immunizations, acute care, physical exams and patient education on various health-related topics. Services include free lab testing for syphilis and HIV, as well as referrals to specialty care. Pregnancy testing and referrals to prenatal care and Women, Infants and Children (WIC) services also are offered.

The Care-A-Van has two examination rooms, a laboratory area, intake area, bathroom and patient waiting space. It is staffed by a physician assistant, an interpreter and a driver/patient registrar, who have become trusted providers in the community.

Services are targeted to children and expectant mothers without access to routine medical care. To be eligible, a patient needs to be an uninsured child or uninsured pregnant woman. There is no application to complete in advance. Patients can access the Care-A-Van by reviewing the mobile clinic's weekly schedule available online and calling the clinic to make an appointment, or by meeting the Care-A-Van at one of its regular stops. In a given week, the mobile clinic will visit several convenient locations that are well known in the community, including the Esperanza Center, Patterson Park and Armistead Gardens.

There is no zip code residency requirement to receive basic services on the mobile clinic. However, zip code residency will determine a patient's eligibility for related programs at JHH and JHBMC including SPRNAT and TAP.

Services offered by the mobile clinic are provided free of charge and are largely funded by JHBMC.

The Self-pay Prenatal Program ("SPRNAT")

The Self-pay Prenatal program, or SPRNAT, is a charity care program that provides free access to routine obstetric services for expectant mothers living in the immediate community. Beginning in the 2000s, JHBMC witnessed a dramatic growth in need for pregnancy care for mothers within the East Baltimore community who were not eligible for any insurance coverage and demonstrated significant difficulty in paying for health care services. In order to ensure appropriate care was being provided to this population during and after pregnancy, JHBMC establish the SPRNAT program in 2007.

The purpose of SPRNAT is to provide free access to prenatal care to pregnant women without insurance. Specifically, the program provides routine prenatal services while the mother is pregnant, along with one postpartum visit. Services are provided on-site at the JHBMC outpatient OB/GYN practice.

Expectant mothers must meet the following criteria to enroll in SPRNAT:

1) positive pregnancy test with no other obstetrical provider
2) not eligible for any other insurance benefits or current insurance benefits are exhausted
3) not eligible for any other sources of funding
4) demonstrate an inability to pay
5) reside in one of the following 9 zip codes: 21205, 21206, 21213, 21220, 21221, 21222, 21224, 21231 and 21237

To enroll, a patient must be referred to the program from the Care-A-Van. The referral process begins once a patient has been identified as pregnant by the mobile clinic. Care-A-Van staff discuss prenatal care options with the patient and will assist with the application process for SPRNAT enrollment. Patients can also be directed to SPRNAT by first presenting in the Emergency Department ("ED"). Once an expectant mother is identified as pregnant in the ED, she can be referred to the Care-A-Van program to begin the application process for SPRNAT.

Services through the SPRNAT program are provided at no charge to patients.

The Access Partnership ("TAP") Program

The Access Partnership, or TAP, is a mission-driven charity program designed to improve access to effective, compassionate, evidence-based primary and specialty care for uninsured and underinsured patients residing in the community surrounding.

Through TAP, qualifying patients can access hospital-based services for routine primary, diagnostic and specialty care at JHBMC or JHH. Notably, TAP offers complementary services to SPRNAT for high-risk obstetric patients. If an expectant mother needs specialty services not available directly through SPRNAT, the patient can enroll in TAP and be seen at JHH or JHBMC for any specialty service for the term of her

pregnancy. The process is straightforward because SPRNAT participants automatically qualify for TAP.

Through TAP and SPRNAT, JHBMC strives to ensure that all members of the community have access to the full continuum of obstetric care, whether routine prenatal care or high-risk obstetrical care.

The program is provided at minimal cost to the patient. Patients are asked to pay a $20 participation fee each quarter while they are in care. This fee can be waived in cases of extreme financial difficulty or medical urgency.

Center for Addiction and Pregnancy ("CAP")

CAP offers an innovative approach to helping mothers and infants deal with the physical, emotional, and social challenges resulting from addiction. CAP is an outpatient program with an available overnight housing unit for patients requiring a recovery-oriented domicile, and provides a comprehensive, coordinated, multidisciplinary approach to caring for drug-dependent mothers and their drug-affected babies.

CAP is committed to the following goals:

- Reducing the number and severity of obstetric complications, including HIV infection
- Delivering healthier infants to mothers who no longer abuse drugs or alcohol
- Providing effective family planning services that are acceptable to the patient
- Ensuring initial and long-term pediatric assessments and care to the neonate and other children of program patients

The program is housed in one wing of the Mason F. Lord Building at JHBMC and includes a broad spectrum of services to reduce barriers and maximize compliance with needed care. Services include substance abuse treatment, psychiatry, pediatrics, obstetrics/gynecology, and family planning. CAP also offers transportation and methadone maintenance. By providing comprehensive health care and complementary services in one convenient location, CAP breaks down the barriers than often keep this high-risk population of women and children from receiving the care they need.

Safe Babies Program

Initiated in 1996, JHBMC's Safe Babies Program is a community outreach effort to provide new parents with burn prevention education and tools. Burns are the third leading cause of injury-related hospitalizations of children ages 0-5 in Maryland. As part of the Safe Babies Program, each new mother receives a Safe Babies kit, including a smoke detector, baby bath thermometer, outlet covers, heat sensitive spoons, spill-proof mug and educational information. Since the beginning of the program, more than 15,000 Safe Babies kits have been distributed. Limited trauma report data and medical record number comparisons have found no infant burn admissions from parents who received a kit. The Safe Babies kits are provided free of charge and are funded by a grant from the JHBMC Burn Center.

10.24.01.08G(3)(b). Need.

The Commission shall consider the applicable need analysis in the State Health Plan. If no State Health Plan need analysis is applicable, the Commission shall consider whether the applicant has demonstrated unmet needs of the population to be served, and established that the proposed project meets those needs.

INSTRUCTIONS: Please identify the need that will be addressed by the proposed project, quantifying the need, to the extent possible, for each facility and service capacity proposed for development, relocation, or renovation in the project. The analysis of need for the project should be population-based, applying utilization rates based on historic trends and expected future changes to those trends. This need analysis should be aimed at demonstrating needs of the population served or to be served by the hospital. The existing and/or intended service area population of the applicant should be clearly defined.

Fully address the way in which the proposed project is consistent with each applicable need standard or need projection methodology in the State Health Plan.

If the project involves modernization of an existing facility through renovation and/or expansion, provide a detailed explanation of why such modernization is needed by the service area population of the hospital. Identify and discuss relevant building or life safety code issues, age of physical plant issues, or standard of care issues that support the need for the proposed modernization.

Please assure that all sources of information used in the need analysis are identified. Fully explain all assumptions made in the need analysis with respect to demand for services, the projected utilization rate(s), the relevant population considered in the analysis, and the service capacity of buildings and equipment included in the project, with information that supports the validity of these assumptions.

Explain how the applicant considered the unmet needs of the population to be served in arriving at a determination that the proposed project is needed. Detail the applicant's consideration of the provision of services in non-hospital settings and/or through population-based health activities in determining the need for the project.

Complete the Statistical Projections (Tables F and I, as applicable) worksheets in the CON Table Package, as required. Instructions are provided in the cover sheet of the CON package.

Applicant Response:

Need For Modernization

JHBMC seeks approval for the capital expenditures associated with a campus redevelopment project that includes construction of a New Inpatient Building ("NIB") and renovation of two existing buildings on its campus. The project has two main goals for the JHBMC Campus. The first, is to maximally transition to all private patient rooms. The second is to modernize and upgrade JHBMC's outdated facilities.

Achieving these objectives is essential to the long-term viability of JHBMC. The project will allow JHBMC to address quality and safety standards, right-size patient rooms,

units, and operating rooms, upgrade existing infrastructure, and enhance infection control. Not proceeding with this project will put key services in jeopardy in the short term, and it will threaten JHBMC's ability to maintain its central role as an academic medical center, pursuing excellence and innovation in health care delivery, education, and discovery.

JHBMC lags behind other hospitals in the region in providing modern, state-of-the-art facilities and accommodations for its inpatients, as well as for the faculty and staff who care for them. This limits JHBMC's ability to meet the needs and expectations of its patient population; a population that stretches far beyond Baltimore City and Baltimore County, and including the counties of Carroll, Howard, Anne Arundel, Harford, and Cecil. Additionally, this disparity limits the ability of the Johns Hopkins Academic Division to optimize JHBMC for specialty services. A high degree of clinical integration has been achieved across the Academic Division, particularly in neurosurgery, multiple surgical divisions, multiple medical divisions, emergency medicine, pathology, radiology, anesthesiology, rehabilitation medicine, obstetrics, and psychiatry. This project, bringing the facilities and accommodations at JHBMC up to the standard of care in the region, is crucial to the continued clinical integration efforts of the Johns Hopkins Medicine Academic Division.

In this project's absence, JHBMC's campus infrastructure and facilities will no longer allow it to offer the broad range of clinical services it does today. Aging facilities will require costly, time-consuming, inefficient, and operationally disruptive renovations in the form of wasteful, short-term fixes. An inability to offer private patient rooms will inevitably continue to result in declining patient satisfaction scores, a heightened risk of infection, and the constriction of JHBMC's patient catchment area. A shrinking patient population would ultimately jeopardize JHBMC's academic mission by limiting the specialized services it would be able to offer, and reducing its appeal as a unique and nationally recognized clinical training site.

Safe, high quality care for intensive and acute care patients, the focal point of this project, would be put increasingly at risk. The campus's structural limitations will begin to present insurmountable quality of care concerns. The Obstetrics Unit, the NICU, and the Burn Center are the services most immediately at risk if this project does not proceed. Ultimately, fewer and fewer specialty services and academic activities would be likely to be offered on the JHBMC campus. Those most likely to bear the brunt of such sweeping changes would be the southeast Baltimore City and Baltimore County residents who benefit the most from JHBMC's continued pursuit of clinical excellence and discovery.

Bed Need

In FY2018, JHBMC is currently licensed to operate:

- 342 acute care beds
- 283 MSGA beds
- 22 obstetrical beds
- 20 psychiatric beds

- 5 pediatric beds

JHBMC proposes to reduce the number of acute care beds at the conclusion of the project and operate:

- 315 acute care beds
- 272 MSGA beds
- 18 obstetrical beds
- 20 psychiatric beds
- 5 pediatric beds.

MSGA Bed Need

In FY2018, JHBMC is currently licensed to operate 283 MSGA beds.

JHBMC proposes to reduce the number of MSGA beds at the conclusion of the project and operate 272 MSGA beds

JHBMC seeks to decrease MSGA bed capacity in the renovated facility by 11 MSGA beds. This reduction is primarily the result of reductions in potentially avoidable utilization, but also the shift of inpatient discharges to outpatient observation cases. JHBMC also seeks to decrease the licensed obstetrical capacity by 4 beds.

For a detailed explanation of these projections, please see response to COMAR 10.24.10.04B(2) – Identification of Bed Need and Addition of Beds.

Operating Room Utilization

The applicant is not seeking to expand surgical capacity. Rather, the applicant is seeking to replace four of JHBMC's current 14 mixed use ORs with new state of the art ORs. The four ORs which will be taken off line are among the smallest in the operating room suite.

For a detailed explanation of these projections, please see response to COMAR 10.24.11.05B(2) – Need – Minimum Utilization for Establishment of a New or Replacement Facility.

Obstetric Services Need

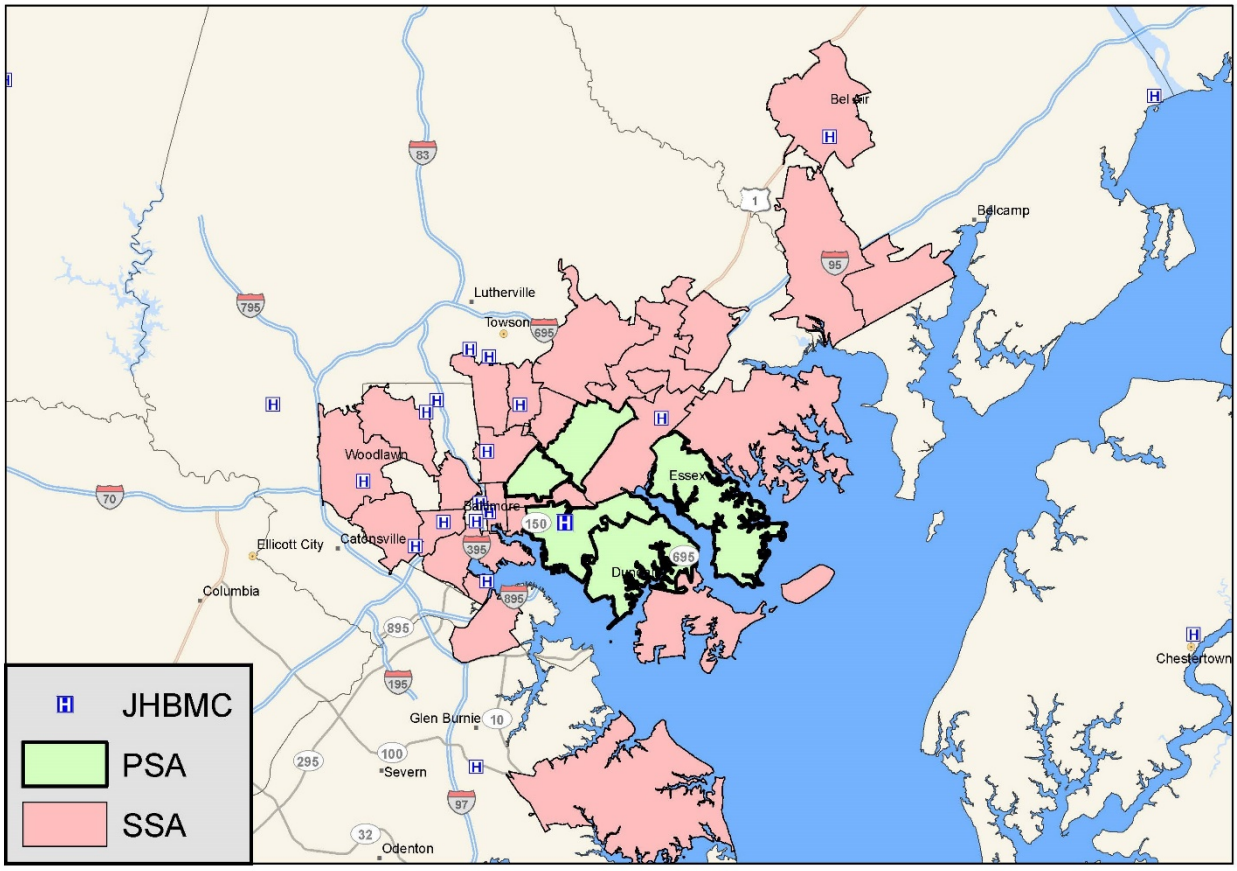
JHBMC is currently licensed to operate 22 acute obstetrical beds. JHBMC proposes to reduce the number of obstetrical beds in the new facility and operate 18 beds.

For a detailed explanation of these projections, please see response to COMAR 10.24.12.04(1) – Need.

Observation Utilization

The applicant used CY2016 JHBMC internal outpatient data to determine the observation primary and secondary service areas and depicted below:

JHBMC Observation Total Service Area



The primary (zip codes contributing the top 60% of visits) and secondary (zip codes contributing the next 25% of visits) observation service areas are detailed below:

JHBMC Observation Patient Primary and Secondary Service Areas
Outpatient Observation Cases per Zip Code
CY2016

Zip Code	2016	Cumulative %	Service Area
21222	963	27.4%	Primary
21224	614	44.9%	Primary
21206	207	50.8%	Primary
21221	170	55.6%	Primary
21213	133	59.4%	Primary
21219	119	62.8%	Secondary
21205	117	66.1%	Secondary
21220	87	68.6%	Secondary
21231	75	70.7%	Secondary
21236	55	72.3%	Secondary
21237	55	73.8%	Secondary
21234	53	75.3%	Secondary
21218	40	76.5%	Secondary
21040	25	77.2%	Secondary
21214	24	77.9%	Secondary
21215	24	78.5%	Secondary
21014	23	79.2%	Secondary
21202	20	79.8%	Secondary
21225	20	80.3%	Secondary
21207	19	80.9%	Secondary
21217	19	81.4%	Secondary
21229	19	82.0%	Secondary
21085	16	82.4%	Secondary
21122	15	82.8%	Secondary
21212	15	83.3%	Secondary
21223	15	83.7%	Secondary
21128	14	84.1%	Secondary
21230	14	84.5%	Secondary
21239	14	84.9%	Secondary
All other zip codes	**531**	15.1%	Other
Grand Total	**3515**	**100%**	

Source: HSCRC Outpatient Visit Tables

Observation Patient Projection Methodology

Background

JHBMC used Sg2's proprietary growth projections when modeling future observation patient demand. Sg2 (a division of Vizient) is a national health care consulting company that Johns Hopkins Medicine has used for almost twenty years to aide in long-range forecasting.

Methodology

Sg2's forecast model took JHBMC's FY2015 actual observation and extended recovery surgical patient volumes as the starting point, and then projected the growth for ten years. The projections were made at the clinical sub-product line level (e.g., interventional cardiology, orthopedic total joint replacement, etc.), and for each sub-product line, Sg2 projected the number of patients who would shift from inpatient status to outpatient observation status. Sg2's model considered the following factors in the forecast: population, economy, consumer preference, epidemiology, technology adoption, health policy, and care delivery innovation. Each of these factors is individually weighted, by sub-product line, and in aggregate yields the projection.

Please see Exhibit 1F for Observation volume projections.

10.24.01.08G(3)(c). Availability of More Cost-Effective Alternatives.

The Commission shall compare the cost effectiveness of the proposed project with the cost effectiveness of providing the service through alternative existing facilities, or through an alternative facility that has submitted a competitive application as part of a comparative review.

INSTRUCTIONS: Please describe the planning process that was used to develop the proposed project. This should include a full explanation of the primary goals or objectives of the project or the problem(s) being addressed by the proposed project. The applicant should identify the alternative approaches to achieving those goals or objectives or solving those problem(s) that were considered during the project planning process, including:

a) the alternative of the services being provided through existing facilities;

b) or through population-health initiatives that would avoid or lessen hospital admissions.

Describe the hospital's population health initiatives and explain how the projections and proposed capacities take these initiatives into account.

For all alternative approaches, provide information on the level of effectiveness in goal or objective achievement or problem resolution that each alternative would be likely to achieve and the costs of each alternative. The cost analysis should go beyond development costs to consider life cycle costs of project alternatives. This narrative should clearly convey the analytical findings and reasoning that supported the project choices made. It should demonstrate why the proposed project provides the most effective method to reach stated goal(s) and objective(s) or the most effective solution to the identified problem(s) for the level of costs required to implement the project, when compared to the effectiveness and costs of alternatives, including the alternative of providing the service through existing facilities, including outpatient facilities or population-based planning activities or resources that may lessen hospital admissions, or through an alternative facility that has submitted a competitive application as part of a comparative review.

Applicant Response:

Planning Process

For a detailed explanation of the planning process, please see the "Deliberative Process" section of the Project Description.

Primary Goals & Project Objectives & Alternative Approaches

Please see response to Standard .04B(5) – Cost-Effectiveness above for a detailed discussion of the project's primary goals, project objectives, and an evaluation of 3 options considered.

Providing Services Through Existing Facilities

Please see response to Standard .04B(5) – Cost-Effectiveness above for detailed evaluation of providing services through existing facilities ("Option 1: Renovate In Place")

Providing Services Through Population-Health Initiatives That Would Avoid or Lessen Hospital Admissions

Population heath initiatives are best viewed as a complement to, rather than a substitution for, the goals and objectives of this project. The NIB project aims to maximally transition JHBMC to all private patient rooms, as well as modernize and upgrade outdated facilities. The JHBMC patient population needs and will continue to need modernized hospital infrastructure to support the needs of its medical, cardiac, surgical, neurosciences, orthopedic, obstetrical, gynecological, neonatal, and burn patients.

For JHBMC's extensive listed of population-health initiatives, please see section "Background on JHBMC – Community Programs" of the Project Description.

10.24.01.08G(3)(d). Viability of the Proposal.

The Commission shall consider the availability of financial and nonfinancial resources, including community support, necessary to implement the project within the time frames set forth in the Commission's performance requirements, as well as the availability of resources necessary to sustain the project.

INSTRUCTIONS: Please provide a complete description of the funding plan for the project, documenting the availability of equity, grant(s), or philanthropic sources of funds and demonstrating, to the extent possible, the ability of the applicant to obtain the debt financing proposed. Describe the alternative financing mechanisms considered in project planning and provide an explanation of why the proposed mix of funding sources was chosen.

- Complete applicable Revenues & Expenses (Tables G, H, J and K as applicable), and the Work Force information (Table L) worksheets in the CON Table Package, as required. Instructions are provided in the cover sheet of the CON package. Explain how these tables demonstrate that the proposed project is sustainable and provide a description of the sources and methods for recruitment of needed staff resources for the proposed project, if applicable.

- Describe and document relevant community support for the proposed project.

- Identify the performance requirements applicable to the proposed project and explain how the applicant will be able to implement the project in compliance with those performance requirements. Explain the process for completing the project design, contracting and obtaining and obligating the funds within the prescribed time frame. Describe the construction process or refer to a description elsewhere in the application that demonstrates that the project can be completed within the applicable time frame.

- Audited financial statements for the past two years should be provided by all applicant entities and parent companies.

Applicant Response:

Tables

Please see Exhibit 1G for Table G.

Please see Exhibit 1H for Table H.

Please see Exhibit 20 for list of assumptions for Table G and Table H.

Please see Exhibit 1L for Table L.

Project Viability

As presented in Table H - Revenues & Expenses, Inflated - Entire Facility, JHBMC is projected to be financially viable throughout the projection period, both before and after the opening of the New Inpatient Building. The financial projections reflect current Global Budget Revenue methodology and assumptions, including market shift adjustments and a capital related rate increase to fund the incremental depreciation and

interest expense associated with the New Inpatient Building. The projections also include achievement of projected performance improvements.

Total depreciation and interest expense related to the New Inpatient Building project are projected to equal $30.3M in FY2023, the first full year of operation of the facility.

Projected New Inpatient Building
Depreciation and Interest Expense

Capital Expense	Projected ($ in millions)
Depreciation	$17.3
Interest	13.0
Total	$30.3

Applying JHBMC's mark-up of 1.1594 to the capital to be included in rates results in an estimate of gross revenue related to the project of $35,140,256 which is expected to equate to a 5.1% increase on the FY2022 projected HSCRC rates.

Performance Improvement Plan

The non-capital operating expense projections reflect expected volumes, trends in expense inflation and variability, as well as $36.1 million of opportunity for performance improvements in FY2018, FY2019 and FY2023. The table below presents an overview of the performance improvement plan.

Johns Hopkins Bayview Medical Center
Projected Performance Improvements
$ in thousands

	FY2018	FY2019	FY2023	Total
Expense reductions	6,200	4,275		10,475
Revenue enhancements:				
Revenue funding of volume growth	6,000	2,000		8,000
All other revenue enhancement	300	1,300		1,600
Other, to be identified as FY2023 approaches			16,000	16,000
	12,500	**7,575**	**16,000**	**36,075**

JHBMC has identified opportunities that are achievable, are in line with industry benchmarks, and will improve the operating margin without compromising the quality and patient satisfaction delivered by JHBMC, including the following examples.

Care Redesign

JHMBC will implement strategies to reduce admissions through expanded use of ambulatory services with protocols to prevent unnecessary hospital volumes.

Supply Chain

JHBMC will (1) improve the reprocessing of implants, as well as other opened and unused devices, especially related to Orthopedics, (2) implement a more robust supply capture system that will enable automation to ensure better controls over inventory and consistent charge capture and (3) standardize supplies to achieve savings and reduce waste related to expired products, especially in Surgery.

Shared Savings

JHBMC will (1) increase standardization and centralization of certain operating functions, (2) incorporate zero-based budgeting for departmental support of the JHU School of Medicine and (3) enable department leadership to reduce controllable spending in a sustainable way.

Human Resources

JHBMC will (1) work with Human Resources to recruit and retain clinical staff to avoid higher staffing-related costs related to premium rates for agency nurses and paying overtime to employees to ensure coverage, (2) eliminate vacant positions through attrition, (3) achieve productivity benchmarks identified through comparisons to HSCRC unit costs for comparable hospitals and productivity reports provided by MacLeod and Associates, (4) work with Human Resources to identify benefit plan redesign opportunities, and (5) collect updates from recent actuarial reports to manage pension plan expenses.

Revenue Enhancement

JHBMC will (1) reduce denials through education of staff and improvement in pre-authorization (especially on weekends), (2) increase quality payment rewards related to its population health management initiatives to increase access to primary and specialty care and improve clinical quality, and (3) obtain funding for its new facilities on campus to help defray the depreciation and interest costs associated with the Oncology Center and North Pavilion, as well as the rising cost of infusion drugs.

Funding Plan

The funding plan assumed in the projections relies on JHBMC cash reserves, State grant dollars, fundraising and debt. By the end of construction, it is expected that JHBMC will contribute a total of $105.5M of its operating cash toward the projects included in this CON application (as of the date of this application, the Medical Center has already designated approximately $48.8M of this amount for the NIB). The Medical Center has also assumed $27.0M in grants from the State of Maryland in support of the project. A request has been made to the Governor for consideration in upcoming budgets (see Exhibit 2). The total goal for philanthropic support is assumed to be $48.0M and will be coordinated through the Fund for Johns Hopkins Medicine which

has a successful track record of fundraising for similar projects across Johns Hopkins. The debt assumed approximates $260.0M -- $200.0M of which has already been issued by the Johns Hopkins Health System and will be available immediately to JHBMC upon commencement of the project, at which time the Medical Center will assume the related debt service. JHBMC does not anticipate any issues with obtaining the remaining $60.0M of loans assumed in the plan.

Also included in the project is a parking garage structure. This portion of the project (approximately $28.3M) will be funded by the Johns Hopkins Medical Institutions Parking System and will not be the responsibility of JHBMC.

Community Support

The description of JHBMC's extensive, diverse community programs and partnerships offered in the Project Description above reflects the breadth and depth of JHBMC's engagement with and support from the community. There are multiple programs that engage faith communities led by the Healthy Community Partnership and the Spiritual Care and Chaplaincy Department. Centro Sol has deep ties in the Latino community and with other organizations serving that community. Through its leadership of the Invest Health initiative, JHBMC has strengthened ties with community development, and business leaders in the Dundalk area. Because of these relationships and programs, because of the array of programs addressing urgent community needs, and because of the programs and resources that make needed care accessible for all, JHBMC is a valued community resource and partner and has the support of the community.

Please see Exhibit 21 for letters of support from a sample of JHBMC's partners and supporters:

- Baltimore County Chamber of Commerce
- Bayview Business Association
- Bayview Community Association
- Chesapeake Gateway Chamber of Commerce
- Dr. Julie Caffrey - Interim Director of the Johns Hopkins Burn Center
- Dundalk Renaissance Corporation
- JHBMC – Community Advisory Board
- JHBMC – Patient-Family Advisory Council
- Southeast Community Development Corporation
- Union Baptist Church

Performance Requirements

This will be a multi-phase project with multiple construction contracts. Due to a constrained site and the need to maintain the operations of existing facilities, the project requires an extended implementation and sequencing plan and will be executed in phases as outlined below:

- Phase 1: Site enabling including construction of temporary surface parking lot and relocation of existing utilities clearing the way for building construction

- Phase 2: Inpatient building, garage and power plant
- Phase 3: Furnish, equip and activate inpatient building
- Phase 4: Backfill renovations and activation

Phase 2 will require 36 months, instead of 24, to complete. This can be allowed under COMAR 10.24.01.12C(3)(i)(ii). This timeframe is estimated based on our experience with similarly large, complex projects and is supported by professional resources with healthcare experience in the construction industry. We also note that MVS provides some insight into construction time durations in Section 85, Page 8 (September 2016) using the table entitled "Construction Time." From this table, we find that hospitals in the cost range of this application will require approximately 2 years and 10 months, which reasonably compares with the advice we have received from our professional resources. We request approval for the 36-month timeframe for Phase 2.

Audited Financial Statements

Please see Exhibit 22 for audited financial statements. JHHS is audited on a consolidated basis. JHBMC statements are reported individually at the end of the packet.

Conclusion

This project is financially feasible. It is supported fully by Johns Hopkins Medicine and has the support of the community. The project will be implemented within prescribed timeframes, and sufficient workforce resources are available to fill positions as needed, in particular given JHBMC's long track record at successfully staffing positions. JHBMC will remain viable as it implements this project. It is important to note that, as discussed in greater detail in the Project Description, JHBMC will not be viable in the long term unless it is able to achieve the goals of this project.

10.24.01.08G(3)(e). Compliance with Conditions of Previous Certificates of Need.

An applicant shall demonstrate compliance with all terms and conditions of each previous Certificate of Need granted to the applicant, and with all commitments made that earned preferences in obtaining each previous Certificate of Need, or provide the Commission with a written notice and explanation as to why the conditions or commitments were not met.

INSTRUCTIONS: List all of the Certificates of Need that have been issued to the applicant or related entities, affiliates, or subsidiaries since 2000, including their terms and conditions, and any changes to approved CONs that were approved. Document that these projects were or are being implemented in compliance with all of their terms and conditions or explain why this was not the case.

Applicant Response:

The Johns Hopkins Bayview Medical Center ("JHBMC") submitted six CON applications since 1983.

JHBMC was a co-applicant with The Johns Hopkins Hospital for a Certificate of Need issued by the Maryland Health Resources Planning Commission. Docket No. 96-24-1983, approved on April 8, 1997, was for the relocation of eighteen acute comprehensive inpatient rehabilitation beds from the Good Samaritan Hospital to The Johns Hopkins Health System Corporation; fourteen to be relocated at The Johns Hopkins Hospital, and four (4) to be located at the JHBMC. No conditions were applied to the approval of the project. The relocation of the beds to JHBMC was completed on June 17, 1997. On February 16, 1998, the relocation of the fourteen (14) beds was completed at The Johns Hopkins Hospital.

On November 22, 2005, JHBMC was awarded a CON, Docket Number 05-24-2165, to expand its mixed-use general-purpose operating room capacity from 10 to 14 rooms, increase the capacity of its pre- and post-anesthesia care unit, and to construct new air handling infrastructure to support the expanded surgical facilities. A request for modification was approved May 10, 2007. Due to increased capital costs and changes to the project, the original CON was replaced by a new one, submitted to the MHCC December 15, 2008 and approved February 19, 2009. Final first use approval was granted November 20, 2009.

On February 16, 2012, JHBMC was awarded a CON, Docket Number 11-24-2321, to construct an annex building next to the Emergency Department. The first floor of this three-story building would house an expanded adult ED and a new Psychiatric Evaluation Services Unit. The second floor would house a 13-space all private room adult observation and holding unit. The third floor would house a new combined pediatric inpatient, emergency, and observation/holding unit. There were no conditions placed on the award of this CON. The project was deemed complete and first use approval was granted May 18, 2015.

Also on February 16, 2012, JHBMC was awarded a CON, Docket Number 11-24-2322, for capital expenditures associated with the creation of a comprehensive program including the construction of two linear accelerator vaults and equipping one. No conditions were placed on the award of this CON. First use occurred February 23, 2015.

On March 12, 2012, "Genesis Bayview Joint Venture, LLC" was awarded a CON, Docket Number 11-24-2323, to establish a new 132-bed comprehensive care facility on

the JHBMC campus. The project was a joint venture of JHBMC and Genesis Bayview JV Holdings, a subsidiary of Genesis HealthCare. On January 2, 2014, Genesis Bayview Joint Venture, LLC notified staff at the MHCC that it would not proceed with this project and would relinquish the CON. The project was in good standing with respect to the CON at the time it was halted.

10.24.01.08G(3)(f). Impact on Existing Providers and the Health Care Delivery System.

An applicant shall provide information and analysis with respect to the impact of the proposed project on existing health care providers in the health planning region, including the impact on geographic and demographic access to services, on occupancy, on costs and charges of other providers, and on costs to the health care delivery system.

INSTRUCTIONS: Please provide an analysis of the impact of the proposed project:

a) On the volume of service provided by all other existing health care providers that are likely to experience some impact as a result of this project[4];

b) On access to health care services for the service area population that will be served by the project. (state and support the assumptions used in this analysis of the impact on access);

c) On costs to the health care delivery system.

If the applicant is an existing hospital, provide a summary description of the impact of the proposed project on costs and charges of the applicant hospital, consistent with the information provided in the Project Budget, the projections of revenues and expenses, and the work force information.

Applicant Response:

a)

Analysis

As discussed in "COMAR 10.24.12.04(1) – Need" JHBMC's obstetrical projections for 2025 include a category called "Market Recapture". This category includes 390 obstetrical cases that are projected to result from an increase in market share. This market share increase is projected to reverse the current trend, attributed to JHBMC's obstetrical services becoming less competitive in the market from the perspective of aesthetics and amenities.

Please see response to "COMAR 10.24.12.04(1) – Need" for a detailed description of JHBMC's obstetrical service area, JHBMC's service area projections, and JHBMC's obstetrical bed need projection.

Please see Exhibit 23 for the analysis of projected market shifts and the estimated impact on existing providers.

[4] **Please assure that all sources of information used in the impact analysis are identified and identify all the assumptions made in the impact analysis with respect to demand for services, the relevant populations considered in the analysis, and changes in market share, with information that supports the validity of these assumptions.**

Methodology For Calculating Volume Impact (Exhibit 23)

1.) Define JHBMC TSA (Total Service Area) as the combined Primary and Secondary Service Areas calculated in response to COMAR 10.24.12.04(1) – Need.

2.) Quantify the total volume in the JHBMC TSA in 2016, by hospital.

3.) Calculate "2016 Market Share" by hospital by dividing the TSA volume of each hospital by the total volume in the TSA.

4.) Exclude 2016 JHBMC volume from total volume in the TSA to calculate "2016 Market Share Excluding JHBMC".

5.) Multiply 390 by "2016 Market Share Excluding JHBMC" percentage to project volume projected to shift to JHBMC, by hospital ("Projected Count of Recapture").

6.) Report "2016 Volume for All Geographies", by hospital. Exclude hospitals with recapture volume of less than 10 from further analysis.

7.) Subtract "Projected Count of Recapture" from "2016 Volume" (All Geographies) to report "2016 Volume Adjusted for Market Recapture".

8.) Divide "Projected Count of Recapture" by "2016 Volume" (All Geographies) to report "2016 Volume Percent Impact" for each hospital.

The impact on volume and percentage impact, by hospital are copied below:

Hospital Campus	Projected Count of Recapture	2016 Volume Percent Impact
MedStar Franklin Square Medical Center	(60.2)	**-2.01%**
Mercy Medical Center	(47.1)	**-1.49%**
Greater Baltimore Medical Center	(42.4)	**-1.10%**
The Johns Hopkins Hospital	(35.8)	**-1.43%**
University of Maryland Saint Joseph Medical Center	(28.5)	**-1.16%**
Anne Arundel Medical Center	(26.7)	**-0.45%**
University of Maryland Medical Center	(24.8)	**-1.34%**
MedStar Harbor Hospital	(23.4)	**-1.77%**
Sinai Hospital	(22.2)	**-0.95%**
University of Maryland Upper Chesapeake Medical Center	(18.3)	**-1.37%**
Saint Agnes Hospital	(18.3)	**-0.84%**
University of Maryland Baltimore Washington Medical Center	(15.3)	**-1.60%**
Howard County General Hospital	(11.6)	**-0.31%**
(All Other)	(15.4)	-
TOTAL	**(390)**	-

Conclusion

JHBMC projects market shifts will occur in proportion to the market shares of existing providers within the JHBMC TSA. This means 2% of one hospital's volume will shift to JHBMC, 1% of 8 hospitals' volume will shift to JHBMC, and less than 1% of the remaining hospitals' volume in the TSA will shift to JHBMC.

The analysis used 2016 volumes to quantify impact, even though volume shifts are projected to be fully realized in 2025. The difference in estimated percent impact in 2025 was considered to be immaterially different than the estimated percent impact calculated using 2016 volumes. This is because the number of cases shifting from any one hospital is so few, relative to each hospital's total volume in a given year.

b)

Access

The applicant projects there will be no impact on access to obstetrical services as a result of the project. The main goal of the project, in the context of obstetrical services, is to modernize outdated facilities and improve the standard of care at JHBMC.

c)

Costs To The Health Care Delivery System

Under the HSCRC's Global Budget Revenue Agreement, impacts of incremental shifts in hospital volume are assumed to be net neutral. Utilizing a 30% variable revenue factor, the expectation is that increases or decreases in revenue should offset variable cost increases and decreases. Therefore, under these assumptions, existing programs would not experience negative financial impact nor will they be compromised in any way by the granting of a Certificate of Need for JHBMC.

The following table (based on FY2017 HSCRC annual filings) seeks to estimate the impact of growth in JHBMC's Obstetrics cases on the revenue and expense of other hospitals that provide the same Obstetric service to residents of JHBMC's service area. The analysis assumes a 30% variable revenue factor for market shift of and 70% volume variability on variable expenses applied to the change in cases.

Hospital	Cases Shifted	Revenue Impact (1)	Expense Impact	Net Impact
Franklin Square Hospital Center	-60.2	$ (159,189)	$ 222,865	$ 63,676
Mercy Medical Center	-47.1	$ (125,988)	$ 176,384	$ 50,395
Greater Baltimore Medical Center	-42.4	$ (113,442)	$ 158,819	$ 45,377
The Johns Hopkins Hospital	-35.8	$ (93,694)	$ 131,171	$ 37,478
Saint Joseph Medical Center	-28.5	$ (78,088)	$ 109,323	$ 31,235
Anne Arundel Medical Center	-26.7	$ (71,127)	$ 99,578	$ 28,451
University of Maryland Medical Center	-24.8	$ (65,971)	$ 92,359	$ 26,388
Harbor Hospital	-23.4	$ (62,370)	$ 87,318	$ 24,948
Sinai Hospital	-22.2	$ (57,957)	$ 81,139	$ 23,183
Upper Chesapeake Medical Center	-18.3	$ (49,557)	$ 69,380	$ 19,823
Saint Agnes Hospital	-18.3	$ (50,365)	$ 70,512	$ 20,146
Baltimore Washington Medical Center	-15.3	$ (40,910)	$ 57,273	$ 16,364
Howard County General Hospital	-11.6	$ (30,864)	$ 43,209	$ 12,346

(1) Reflects JHBMC's FY2017 Obstetric charge per case applied to the shift of cases and each hospital's ratio of net to gross revenue

For Affirmations, please see Exhibit 24.