

STAFF REPORT TO THE PUBLIC HEALTH COUNCIL FOR A DETERMINATION OF NEED	
Applicant Name	Heywood Healthcare, Inc.
Applicant Address	242 Green Street Gardner, MA
Filing Date	August 3, 2021
Type of DoN Application	Substantial Capital Expenditure
Total Value	\$37,960,521.00
Project Number	HH-21071315-HE
Ten Taxpayer Group (TTG)	None
Community Health Initiative (CHI)	\$1,898,026.05
Staff Recommendation	Approval
Public Health Council	November 10, 2021
<p style="text-align: center;"><u>Project Summary and Regulatory Review</u></p> <p>Heywood Healthcare, Inc. (Applicant), submitted an application for a substantial capital expenditure to expand their surgical capacity through construction of a 40,115 gross square foot (gsf) surgical pavilion addition that will include the following: six operating rooms (ORs) – replacing the existing four ORs and adding two new ORs; 18 pre/post procedure patient care stations; central storage, and separate clean and dirty elevators; and 11,057 gsf of shell space for build out for future use. The capital expenditure for the Proposed Project is \$37,960,521; and the Community Health Initiatives (CHI) commitment is \$1,898,026.05.</p> <p>This DoN application falls within the definition of Substantial Capital Expenditure, which are reviewed under the DoN regulation 105 CMR 100.000. The Department must determine that need exists for a Proposed Project, on the basis of material in the record, where the Applicant makes a clear and convincing demonstration that the Proposed Project meets each Determination of Need Factor set forth within 105 CMR 100.210. This staff report addresses each of the six factors set forth in the regulation.</p> <p>The Department did not receive any written comments on this application nor were any Ten Taxpayer Groups formed.</p>	

Application Overview

Heywood Healthcare, Inc. (Heywood) is a healthcare system that provides healthcare services to residents of North Central Massachusetts, including acute care services, emergency department, primary care, behavioral health, and substance use treatment. Heywood Healthcare is comprised of Athol Hospital; Heywood Hospital; Heywood Medical Group with primary care physicians and specialists located throughout the region; urgent care facilities in Gardner and Athol; four satellite facilities (Heywood Rehabilitation Center; Heywood Hospital Partial Hospitalization Program; Winchendon Health Center and Murdock School-based Health Center), and the Quabbin Retreat in Petersham, a development of Heywood Healthcare that provides a full continuum of substance misuse and mental health care services for adults. The two hospitals in the healthcare system are:

- **Heywood Hospital** - the site of the Proposed Project, located in Gardner, MA. It is a community, high Public Payer (HPP) hospital.¹ Heywood Hospital has 134 licensed beds and provides a range of acute care services, including emergency department, primary and specialty care, and behavioral health services.
- **Athol Hospital** - a community, high Public Payer (HPP) hospital located in Athol, MA. Athol Hospital has 21 licensed beds and is designated by the Centers for Medicare & Medicaid Services (CMS) as a Critical Access Hospital.²

Proposed Project

Heywood Hospital's surgical suite was constructed in 1961 and the Applicant states that it has remained largely unchanged since then which has resulted in an outdated and undersized surgical platform. The four existing operating rooms (ORs), ranging in size from 347 square feet (sf) to 429 sf, are too small relative to current Facilities Guidelines Institute (FGI) standard of 600 sf. Recent surgical service line expansions to better meet the surgical needs of the community have led to a significant increase in case volume but the four ORs are too few in number relative to the increased case volume. Further, additional case volume growth is constrained by the existing surgical infrastructure and heating, ventilation, and cooling (HVAC) system. The surgical infrastructure is undersized, and unable to easily accommodate new and emerging surgical technologies, and the HVAC system is outdated which prevents Heywood Hospital from taking advantage of up-to-date infection control modalities. The Applicant asserts that limitations within the existing infrastructure preclude renovation of the existing ORs and HVAC system in their current location on the Hospital campus.

The Applicant is proposing to construct a 40,115 gross square foot (gsf) new surgical pavilion located adjacent and connected to the hospital to replace the existing ORs and expand access to surgical services. The proposed addition will include:

¹ High Public Payer Hospitals (HPP) receive a minimum of 63% of gross patient service revenue from public payers.

² Critical Access Hospital is a designation given to eligible rural hospitals by the Centers for Medicare and Medicaid Services (CMS). The CAH designation is designed to reduce the financial vulnerability of rural hospitals and improve access to healthcare by keeping essential services in rural communities. To accomplish this goal, CAHs receive certain benefits, such as cost-based reimbursement for Medicare services. <https://www.ruralhealthinfo.org/topics/critical-access-hospitals>

- Six operating rooms (ORs) to replace the current ORs, each nearly 200 ft larger than the four existing ORs (net difference of two new ORs).
- Central core for storage of sterile instrumentation.
- Separate clean and dirty elevators for transport of instrumentation to the central sterile processing department (CSPD).
- Eighteen (18) pre/post procedure patient care stations.
- Shell space on the second floor for future use to accommodate outpatient surgical specialists offices.

The Applicant asserts that the Proposed Project is needed in order to address the challenges of an outdated and undersized surgical platform and to continue to meet the surgical and procedural needs of its Patient Panel through increasing access to high-quality, cost-effective, surgical care locally.³

³ The Applicant states that when construction of the new operating suite is complete, the existing operating space will possibly be transitioned into an endoscopy and pain management suite to accommodate future growth in these areas.

OVERVIEW of PROPOSED PROJECT AND FACTOR REVIEW

Description	What's Needed to Meet Factor 1: Demonstration of need; improved health outcomes and quality of life; assurances of health equity; continuity and coordination of care; evidence of community engagement; and competition on recognized measures of health care spending.	What's Needed to Meet Factor 2: Demonstration of cost containment, improved public health outcomes, and delivery system transformation	Factors 3, 4 & 5 ⁴	What's Needed to Meet Factor 6: Demonstration of plans for fulfilling ... responsibilities ... in the DPH Community-based Health Initiatives Guideline.
	<i>Staff Report finds</i>			
	MEETS	MEETS	MEETS	MEETS
The Applicant is proposing to expand access to surgical services, through construction of a surgical pavilion that will include the following: six new operating rooms (ORs) – replacing the existing four ORs and adding two new ORs; 18 pre/post procedure patient care stations; central storage, separate clean and dirty elevators; and shell space for build out for future use.	✓	✓	✓	✓

⁴ 3: Sufficient evidence of compliance and good standing with federal, state, and local laws and regulations

4: Sufficient documentation of the availability of sufficient funds for capital and ongoing operating costs necessary to support the Project without negative impacts or consequences to the Applicant's existing Patient Panel 5: The ... Project, on balance, is superior to alternative and substitute methods for meeting ... Patient Panel needs.

Patient Panel⁵

The Applicant provided Patient Panel data for Heywood Hospital and Athol Hospital for FY18-FY20, the most recent 36-month period and is shown in Table 1.

Table 1: Patient Panel (Fiscal Years 2018-2020)

Hospital	FY18	FY19	FY20
Heywood Hospital	48,691	49,580	48,237
Athol Hospital	14,884	15,638	14,802

The Applicant states that patients may be counted more than once when combining Patient Panel data from Heywood Hospital and Athol Hospital.

Staff notes the following observations about the data below:

- **Age** – The age 50-59 cohort is the largest age cohort among Athol Hospital and Heywood Hospital patient populations.
- **Race/Ethnicity** – Caucasian is the largest race category represented among Athol Hospital and Heywood Hospital patient populations. The Applicant did not include Hispanic in their initial reporting of their patient population, so it was not included in Table 2. DoN Staff inquired about Hispanic patients and the Applicant reported that percentage of Hispanic patients for FY2020 is 3% for Heywood Hospital and 2% for Athol Hospital.
- **Primary Service Area** – Athol Hospital and Heywood Hospital share six of the top 10 zip codes for their patient populations.

Table 2: Overview of Patient Population (FY20)

	Athol Hospital	Heywood Hospital
Total Individual Patients (FY20)	14,802	48,237
Gender		
Male	44%	43.43%
Female	56%	56.56%
Age		
Under 18	12.7%	13.7%
18-25	7.8%	9.4%
26-39	16%	16.7%
40-49	12.6%	12.3%
50-59	17.8%	17.6%
60-69	17.4%	16.2%
70-79	10.3%	9.3%
Over 80	5.3%	4.8%

⁵ As defined in 105 CMR 100.100, Patient Panel is the total of the individual patients regardless of payer, including those patients seen within an emergency department(s) if applicable, seen over the course of the most recent complete 36-month period by the Applicant or Holder.

Race⁶		
Asian	0.4%	0.5%
Black	1.3%	1.7%
Caucasian	92.8%	87.7%
Declined	0.1%	0.1%
Hawaiian or Pacific Islander	0%	0%
Amer Indian or Alaska Native	0%	0%
No Other Race	0%	0%
Other	1.8%	3.6%
Unknown/Not Specified	3.6%	6.3%
Patient Origin Top 10 Zip Codes⁷	Athol Orange Gardner Petersham Royalston Winchendon Templeton New Salem Templeton Warwick	Gardner Winchendon Athol Westminster Ashburnham Templeton Fitchburg Orange Templeton Hubbardston

Table 3 below presents FY20 payer mix for Athol and Heywood Hospitals.

Table 3: Payer Mix and APM Contracts

	Athol Hospital	Heywood Hospital
Total Unique Patients (FY20)	14,802	48,237
Payer Mix		
Commercial	1.4%	1.1%
HMO	31.7%	34.7%
Medicaid HMO	12%	11.9%
Medicare HMO	9.8%	8.9%
MEDICAID	12.7%	10.2%
MEDICARE	18.2%	15.1%
OTHER	0%	0%
Other Government	1.7%	1.6%
PPO	8.9%	10.9%
Self-Pay	2.6%	4.8%
Worker's Comp	1.1%	0.7%

⁶ Self-reported

⁷ Two separate zip codes for Templeton.

Factor 1: a) Patient Panel Need

The Applicant attributes Patient Panel need for expanded access to surgical services to the following:

1. Limitations within the existing surgical suite; and
2. Increasing demand for surgical services.

1. Limitations within the existing surgical suite

Table 4: Proposed Project

Room Type	Existing	After Project Implementation	After Project Implementation
	In the current building	In the current building	In the proposed surgical pavilion
OR	4 ORs (347sf to 429 sf)	0 ORs	6 ORs (600sf each)
Pre/Post Procedure Patient Care Stations ⁸	21 pre/post procedure patient care stations ⁹	21 pre/post procedure patient care stations ¹⁰ (dedicated to Endoscopy)	18 pre/post procedure patient care stations ¹¹
Procedure/Endoscopy Room	1 Procedure room 2 Endoscopy rooms	1 Procedure room 2 Endoscopy rooms	0

Operating Rooms

The Applicant states that the existing surgical suite at Heywood Hospital opened in 1961 with six ORs. Between 2000 and 2004 two of the ORs were repurposed due to their small size (200sf) leaving Heywood Hospital with four ORs, ranging in size from 347sf to 429sf. The Applicant asserts that the existing surgical rooms offer less space than what is required by FGI Guidelines, and that the small size of the existing ORs limits the amount and type of equipment that the ORs can accommodate, which in turn restricts the types of procedures that can be performed. The Applicant notes the following limitations with the existing surgical suite:

- Availability of only one of the four ORs for minimally invasive hip replacement surgery because the other ORs cannot accommodate a special type of OR table (Hana Table) that is needed to perform the procedure. However, if an ED patient requires surgery, it can interrupt a scheduled case which may not be able to be done in any of the remaining ORs in the Hospital. This patient would require transfer via ambulance to another facility that could be higher cost. This can result in delays in cases and increased costs.

⁸ This refers to open bays, cubicles enclosed on three sides, or single-patient rooms.

⁹ Includes 2 isolation rooms (negative pressure rooms).

¹⁰ Includes 2 isolation rooms (negative pressure rooms).

¹¹ Includes 2 isolation rooms (negative pressure rooms).

- None of the existing four ORs is large enough to accommodate a surgical robot such as the da Vinci System, which the Applicant states is commonly used to perform urological, gynecological, and other minimally invasive surgical procedures.^{12,13} As a result, patients seeking robotic surgery either forgo that option or pursue the robotic option in a higher cost tertiary care setting.
- Endoscopic retrograde cholangiopancreatography (ERCP) is an invasive gastrointestinal procedure frequently needed in advance of gall bladder surgery. ERCP requires a wide array of specialized equipment, which only two ORs can accommodate. Heywood Hospital began providing ERCP in December 2019 and in 2020 60 patients had their procedures performed at Heywood Hospital. ERCP can only be performed in the two larger rooms, and the Applicant asserts that it is best performed in the largest OR, that accommodates the Hana table used for minimally invasive hip replacement surgery. This limitation causes scheduling conflicts that, the Applicant states, leads to case delays and added costs.
- An outdated HVAC system prevents Heywood Hospital from taking advantage of the up-to-date infection control modalities available with modern technology such as laminar flow¹⁴ and built in ultraviolet (UV) light disinfection, forcing the OR to close on several occasions, leading to case cancellations.

Pre/Post Procedure Patient Care Stations

The Applicant states that infrastructure limitations in the Surgery Day Care Unit, endoscopy Unit and Post Anesthesia Care Unit (PACU), which are adjacent to the ORs, hinder efficient care delivery and prevent further case growth and service expansion. The Applicant maintains a large volume of relatively quick procedures (case volume was 8,430 in 2019: 5,430 OR cases, and 3,000 endoscopy cases) that require a patient to spend time in the recovery room. There are only 21 pre/post procedure patient care stations shared between the four ORs and three procedure rooms, which do not accommodate the volume resulting from a quick turnaround time. This contributes to patient care bottlenecks leading to case delays, added costs and a compromised patient experience.

The Applicant states that despite the existing ratio of three pre/post procedure patient care stations per procedure room, which is above the 2018 FGI Guidelines requirement of at least two pre/post procedure patient care stations for each procedure room or operating room,

¹² The da Vinci Surgical System is a robotic surgical system made by the American company Intuitive Surgical. It was approved by the Food and Drug Administration (FDA) in 2000. The da Vinci Robot is designed to facilitate surgery using a minimally invasive approach, and is controlled by a surgeon from a console. da Vinci procedures are performed for a wide range of conditions in specialties including cardiac, urologic, gynecologic, pediatric and general surgery. The da Vinci Surgical System makes it possible for more surgeons to perform minimally invasive procedures involving complex and delicate dissection or reconstruction.

¹³ Minimally invasive surgery (MIS) is a less invasive approach requiring a few small cuts. MIS includes laparoscopic surgery and robotic-assisted surgery. During conventional laparoscopy, the surgeon operates while standing and uses hand-held, long-shafted instruments that cannot bend or rotate. The surgeon must look up and away from the instruments to a nearby 2D video monitor to see an image of the target anatomy.

¹⁴ Considered best practice for surgical site infection prevention in orthopedic surgery.

patient care bottlenecks are common. The large volume of short cases that have rapid turnaround times can lead to patient care bottlenecks during check-in to the Surgical Day Care and/or during recovery in the PACU. The average case length is 47 minutes (patient in-room to patient out-of-room) across all Perioperative Services.

Bottlenecks occur when patients who do require an inpatient bed board in the PACU until one becomes available, thereby causing a backup in access to the recovery beds. Increasing pre/post procedure patient care stations will provide resources for both patients waiting for an inpatient bed and those recovering from their procedure. After project implementation, the endoscopy volume will remain in the existing location with the current pre/post procedure patient care stations and the OR volume will move to the surgical pavilion with 18 new pre/post procedure patient care stations.

The Applicant asserts that the additional OR capacity will allow the Hospital to increase the number and types of surgical cases performed at Heywood Hospital, and this will in turn result in fewer referrals to higher-cost tertiary centers, increased local access to care, and promote care coordination among providers.

2. Growing Demand for Surgical Services

The Applicant states that the existing surgical platform is unable to meet the surgical and procedural needs of the Patient Panel. Heywood Hospital has been making investments in procedural-based care in direct response to the needs of its patients which has led to an increase in case volume. The Applicant provided the following examples of Heywood Hospital's investment in procedural-based care to address patient need:

- **2016** – The Applicant established a foundation for perioperative excellence which included the recruitment of a perioperative leadership team and new anesthesia group.
- **2017** – The Heywood Center for Weight Loss and Bariatric Surgery was started in response to a high prevalence of obesity. The Applicant states that the Center has experienced rapid growth and achieved Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) Center of Excellence accreditation.¹⁵
- **2018** – Orthopedic service launched a minimally invasive, anterior approach total hip replacement program.
- **2019** – Gastroenterology service begins performing ERCP. Because this procedure was previously unavailable at Heywood Hospital, many patients who presented at Heywood Hospital with biliary disease had to be transferred to a tertiary center in order to have the procedure.

The Applicant asserts that its investments in perioperative care to address patient need for local access to procedural and surgical care resulted in record high case volume and OR

¹⁵ The American College of Surgeons (ACS) and the American Society for Metabolic and Bariatric Surgery (ASMBS) combined their respective national bariatric surgery accreditation programs into a single unified program to achieve one national accreditation standard for bariatric surgery centers, the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP). MBSAQIP works to advance safe, high-quality care for bariatric surgical patients through the accreditation of bariatric surgical centers. <https://www.facs.org/quality-programs/mbsaqip>

utilization prior to the onset of the COVID-19 pandemic. Case volume of surgical procedures increased by 23% from 2016 to 2018, as shown in Table 5 below.

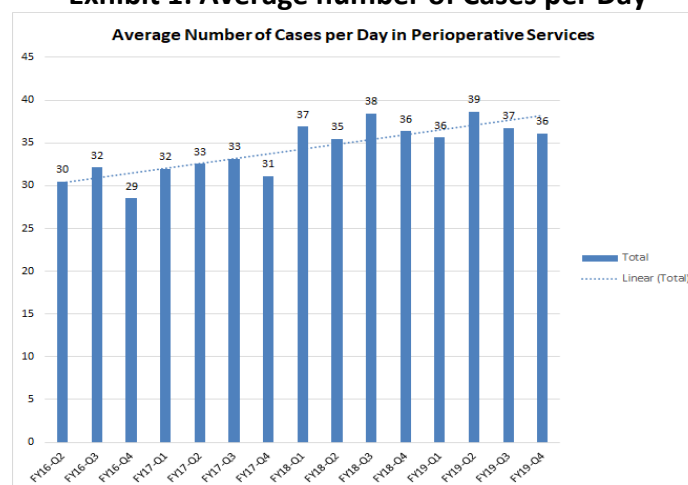
Table 5: Heywood Hospital Surgical Case Volume (2016-2018)

	Individual Patients	Case Volume
2016	3,506	4,469
2017	3,624	4,709
2018	4,187	5,486
Total	9,627 ¹⁶	14,664

The Applicant states that this increase in case volume brought perioperative services to peak capacity and maximal utilization, which then yielded new constraints.

- OR Size – As mentioned above, the size limitation of the existing ORs is contributing to capacity constraints.
- Daily Schedule – Perioperative services has experienced significant growth in the average number of scheduled cases per day. As shown in Exhibit 1 below, there were 30 average cases per day in FY16-Quarter 2, and 39 per day in FY19-Quarter 2.

Exhibit 1: Average number of Cases per Day



- OR Staffing and Utilization – In 2016, the OR was staffed by three teams during the day (7:00am-3:30PM) and one on-call team that was available after 3:30PM. The Applicant states that under this model, OR utilization during elective surgery hours was 79% in 2016 and 84% in 2017, and that if the staffing model had not changed, OR utilization would have increased to 98% in 2018.¹⁷ The perioperative team started experimenting

¹⁶ The Applicant states that 9,627 individual (unique) patients had one or more surgical procedure(s) completed at Heywood Hospital between January 1, 2016, and December 31, 2018.

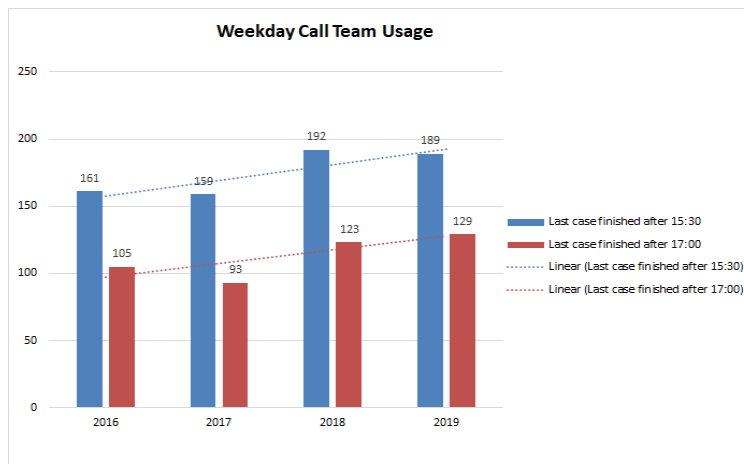
¹⁷ The Applicant states that OR utilization is calculated as follows: $\frac{[(\text{Total case minutes}) + (\text{Turnover time})]}{[(\text{Total staffed minutes})]}$

with alternative staffing arrangements in 2018, several of which were trialed, including extended elective operating hours (7:00AM – 5:00PM), and/or the addition of a fourth team to enable the use of all four ORs simultaneously.

The Applicant asserts that the new staffing models allowed for decompression of surgical cases and more sustainable levels of overall utilization (ranging from 62% to 90%). However, the ultimate impact of the new models was limited because of case scheduling challenges due to the small size of the ORs which compromised the productivity of the fourth team combined with a reluctance on the part of patients and surgeons to start elective surgery late in the afternoon.

The Hospital expanded hours in 2018 with the goal of accommodating more procedures but continued to experience delays. As shown in Exhibit 2 below, the on-call team has been used with increasing frequency in recent years to finish cases and/or accommodate urgent/emergent add-on cases and even expanding elective operating hours in 2018, case volume after 5pm continued to increase (red bar). The Applicant states that the use of the on-call team increases costs. With multiple services competing for the largest OR, staff will wait for the room even though they are available and ready to operate. As a result, the on-call team has been used with increasing frequency in recent years in order to finish scheduled cases and/or accommodate urgent/emergent add-on cases.

Exhibit 2: Weekly On-Call Team Usage



The Applicant states that OR case volume was unable to increase in 2019 to address patient demand due to infrastructure limitations despite additional patient need. From 2018-2020, 15,521 patients received services in the OR. Table 6 below shows the total OR case volume during this time period. Unable to keep up with increasing demand for procedural care due to the limitations that they are facing with the existing ORs, Heywood OR total volume decreased by 1% from 2018-2019.

The decrease in case volume from 2019-2020 was more significant, 15%, due to the COVID-pandemic impacting procedures. The Applicant provided a breakdown of 2019 case volume by patient status: 13% (698) were inpatients, 79% (4,273) outpatients, and 9% (459) were Emergency patients.¹⁸

Table 6: OR Case Volume

		2018		2019		2020		Grand Total	
		Count	%	Count	%	Count	%	Count	%
Heywood OR	Pain	1,401	25.54%	1,605	29.56%	1,271	27.60%	4,277	27.56%
	Orthopedic Surgery	1,343	24.48%	1,236	22.76%	1,154	25.06%	3,733	24.05%
	General Surgery	1,001	18.25%	858	15.80%	725	15.74%	2,584	16.65%
	ENT	643	11.72%	670	12.34%	449	9.75%	1,762	11.35%
	OBGYN	505	9.21%	521	9.59%	456	9.90%	1,482	9.55%
	Urology	470	8.57%	448	8.25%	427	9.27%	1,345	8.67%
	Podiatry	115	2.10%	87	1.60%	57	1.24%	259	1.67%
	Gastroenterology	2	0.04%	3	0.06%	59	1.28%	64	0.41%
	Other Specialty	6	0.11%	2	0.04%	7	0.15%	15	0.10%
Heywood OR Total		5,486	100.00%	5,430	100.00%	4,605	100.00%	15,521	100.00%

The Applicant states that increasing the number of surgical ORs from four to six will help to decrease wait times for procedures and increase overall surgical volume. The Applicant provided average wait times by surgical specialty, which is shown in Table 7 below. The longer wait for orthopedic procedures is because that specialty is more reliant on additional equipment that is larger, and the Applicant currently only has one OR to accommodate it. The Applicant states the new ORs will be identical in size and equipment, making them interchangeable which will allow for more flexibility in scheduling and greater access to procedural care. Creating the surgical pavilion will increase scheduling capacity which will allow for more volume. In order to understand the impact of the Proposed Project on patient access to procedural and surgical services and wait times, the Applicant will report on wait times by surgical specialty. The measure is described below in Appendix 1.

Table 7: Average Wait Time by Surgical Specialty

Surgical Specialty	Averaged Wait for Elective Procedure (in weeks)
Local/Minor procedures	1-2 weeks
General Surgery	3 weeks
Bariatric Surgery	4 weeks
Orthopedic	16-20 weeks
Interventional Pain	2 weeks

¹⁸ The Applicant states that of the 459 emergency cases, 363 cases were for inpatients and 21% were for outpatients.

GYN	5 weeks
Urology	2 weeks
Gastroenterology	6 weeks

As shown in Table 8 below, the Applicant projects procedural volume to increase by 20% with implementation of the Proposed Project.¹⁹

The Applicant anticipates new case volume will originate from within the existing Patient Panel, and from new patients who would have otherwise gone to a tertiary facility for such care. By expanding the surgical capabilities of the Heywood Hospital campus the Proposed Project will increase access to care for Athol Hospital patients. The procedural care currently performed at Athol Hospital is limited to endoscopic and minor surgical procedures) and its patients who require anything other than endoscopic and/or minor surgical procedures receive that care outside of Athol, including at Heywood Hospital. This Proposed Project will not change those current services but will allow for more Athol patients who require other surgery to have it performed within the Heywood Healthcare system in a timely fashion.²⁰

Table 8: Projected OR Case Volume

Existing Volume (CY19)	Proposed Volume (CY29)	Percent Change
5,400	6,480	20%

Analysis

Staff find that the information provided by the Applicant demonstrates sufficient need by their Patient Panel for increased access to procedural care through surgical volume growth that has been constrained due to capacity limitations of the existing ORs. The Applicant asserts that the Proposed Project will reduce wait times for procedures. Wait time for surgery have been shown to be an important factor in the quality of care because of the impact on the patient's clinical condition and potential deterioration during waiting, negative affect on patient satisfaction, and potential increase in costs as a result of excessive wait times.^a

The existing surgical suite opened in 1961 with very little change or updates since then resulting in an outdated surgical platform that cannot accommodate certain equipment necessary to address Patient Panel need for procedural care. Surgical techniques and equipment have changed over the years and the ORs need to be updated to accommodate such changes. The FGI Guidelines recommends that operating spaces designed for specialized procedures be at least 600 sf and modern ORs need be designed to accommodate equipment, daily tasks, and for surgical staff to move more efficiently through procedures.^{b,21} Trends in OR design indicate

¹⁹ Applicant relied on CY19 data to represent existing volume, and states that data for CY2020 was skewed due to mandatory weeks-long closure of the operating room for elective cases.

²⁰ Athol Hospital currently has two procedure rooms.

²¹ Estimated Industry-Standard Operating Room Sizes: Small OR – 400 sq ft; Standard OR – 500 sq ft; Orthopedic OR – 600 sq ft; Cardiac OR – 600 sq ft; Neurological OR – 600 sq ft; Hybrid OR – 650 sq ft (Plus 120 sq ft separate control room); and Transplant OR – 800 sq ft.

that a modern OR needs to be able to accommodate future technology and this could require maintaining flexible designs to allow for increasing the OR size. Other important considerations in OR design include cleaning systems, lighting and noise, operating room storage space, and a greater design emphasis on patient privacy during pre- and post-op, all to improve the setting for staff and patient outcomes.^{c,d}

Factor 1: b) Public Health Value, Improved Health Outcomes And Quality Of Life; Assurances Of Health Equity

The Applicant asserts that the Proposed Project will increase OR capacity which will improve access to and quality of procedural care in the following ways:

- Improved health outcomes through increased patient access to procedural care locally, including for patients whose conditions need time-sensitive attention. Larger ORs will accommodate new, specialized equipment, and increase the number and variety of surgical cases performed at Heywood Hospital including allowing for minimally invasive surgery (MIS) techniques .
- Reduction in surgical site infections and other complications. New ORs will include laminar flow, considered best practice for surgical site infection prevention in orthopedic surgery.
- Improved patient satisfaction. Provision of surgical services locally allows for support and participation from caregivers, family and loved ones, and decreases barriers to accessing care.
- Local availability of procedures promotes care coordination among all patients care providers including primary care physician (PCP), surgeons and other specialists.

The Applicant states that the Proposed Project is designed to meet industry-defined best practices for safety, quality, and efficiency. In 2020, Heywood completed the national improvement of surgical care and recovery collaborative program conducted by the American College of Surgeons and John Hopkins Medicine Institute of Patient Safety and Quality. Additionally, Heywood developed and implemented the Enhanced Recovery After Surgery Protocols for inpatient GYN and orthopedic surgery aimed to reduce preventable harms and enhance recovery. The Applicant proposed specific outcome and process measures to track the impact of the Proposed Project which Staff has reviewed. The measures are described below in Appendix 1.

Analysis

Staff finds that the Proposed Project supports improved outcomes, quality of life and patient satisfaction through the following:

- The benefits of minimally invasive surgery (MIS) techniques include small incisions, less pain, low risk of infection, short hospital stay, quick recovery time, less scarring, and

reduced blood loss. MIS was associated with significantly fewer 30-day postoperative complications, unplanned readmissions and deaths, as well as shorter hospital stays in patients undergoing colectomy, prostatectomy, hysterectomy or appendectomy.^{e,22,23}

- The robotic surgery system was introduced as a solution to minimize the shortcomings of laparoscopy, such as two-dimensional imaging, restricted range of motion of the instruments, and poor ergonomic positioning of the surgeon. Improved visualization and greater dexterity are two major features of robotic-assisted laparoscopic surgery.^f Robotic surgery benefits include increased range of motion with the instrumentation, 3-dimensional stereoscopic visualization, and improved ergonomics for the operating surgeon.^g
- Surgical site infection (SSI), the second most common cause of hospital-acquired infection and the most common type of infection in patients undergoing surgery, are associated with significant morbidity and mortality and higher rates of readmission after hospital discharge, resulting in substantially higher expenditures. SSIs are associated with physical discomfort and prolonged recovery time in the postoperative period and may affect a patient's quality of life.^h The adoption of MIS approaches is associated with a significant reduction in the odds of overall postoperative SSIs and patients undergoing MIS are at substantially lower risk for SSIs compared with their counterparts undergoing open surgery.ⁱ

Equity

DoN Staff note that studies show surgical outcomes differ by race, socioeconomic status, and insurance status. For example, coronary artery bypass graft (CABG) surgery is a high-risk, routine procedure for which significant disparities in operative mortality rates have been observed.^{j,24} Disparities in postoperative mortality based on socioeconomic status (SES) have been consistently demonstrated after major cancer surgery; patients with low SES undergoing gastrectomy are 55% more likely to die after surgery compared with those with higher SES, and operative mortality after lung resection is 37% higher in low-income patients.^k There have been documented differences in lung resection outcomes, including female gender correlated with post-operative mortality and morbidity, race was a significant predictor of post-operative complications, and risk-adjusted mortality was influenced by SES with odds of death increasing with declining income.^{l,25} Studies have also pointed to the importance of access to care, reporting that those without insurance coverage have worse mortality rates than those with coverage.^m Payer status and nonwhite race/ethnicity have both been shown to be associated

²² This study examined the 30-day rates of postoperative complications graded according to the Clavien–Dindo classification, unplanned readmissions and deaths in individuals undergoing one of five common surgical procedures via either a minimally invasive or conventional open surgical approach.

²³ Analyses were restricted to five procedures (appendectomy, colectomy, hysterectomy, inguinal hernia repair and radical prostatectomy).

²⁴ Study used National Medicare Claims data from 2007–2008 to conduct risk-adjusted and hospital quality-adjusted analysis on data from white and nonwhite patients who underwent CABG surgery.

²⁵ Data was obtained from the 2002–2007 Nationwide Inpatient Sample (NIS) datasets. NIS data represents the largest, all-payer, publicly available inpatient care database in the United States. The hospitals represented within the datasets are designated as “community hospitals” within the American Hospital Association (AHA) Annual Survey.

with inferior utilization of laparoscopic surgery for both diagnoses as compared to privately insured and White patients. Data show that after health care reform in Massachusetts, racial/ethnic disparities in the probability of undergoing MIS disappeared in Massachusetts, while variation by patient race/ethnicity persisted in other states suggesting that expanding insurance coverage may decrease variation in health care delivery.^{n,26}

Heywood Hospital is a high public payer and the Service Area tends to have lower SES populations as discussed below in Factor 2 Public Health Outcomes. The Applicant has stated that two of its five areas of focus in 2021 will be on data for identifying and addressing health disparities and the equitable distribution of health care resources. The Applicant provided the racial makeup of its Service Area communities in 2019. More than 90% of the population in the majority of the Service Area cities/towns are White.

The Applicant states it will provide access to perioperative care equitably to all patients regardless of ethnic background, mental and physical abilities, and ability to pay. The Applicant asserts that the ORs will allow for increased access and privacy, including when onsite interpreter service is needed, and will allow for more assistive devices to be readily available.

Heywood Hospital's multicultural program includes interpreter services, and written information and education in multiple languages. The Applicant states that policies and procedures are consistent across all departments. Interpreter services are available 24 hours a day, seven days a week at no cost for non-English speaking and/or Limited English Proficiency and American Sign Language (ASL) interpretation. Services are provided in-person by Multicultural Services staff interpreters or through contract, via video remote interpreting (VRI), or Phone Service allowing for 24/7 access to services. The Multicultural Service Department (MSD) completes a Language Needs Assessment (LNA) annually and Heywood Healthcare uses the results to adjust services to meet the needs of patients and the community at large.

The Applicant states that the region's patient population is predominantly White, but also notes the changing racial makeup in the region since 2000. Specifically, the Hispanic student population in the Service Area increased by 45.1% vs. 29.9% statewide; and multi-race non-Hispanic students in the area increased an average of 53%.^o The Applicant states further that increasing diversity in racial groups and languages spoken is reflected in the interpreter services provided at Heywood Hospital. In general, the top five Departments that utilize interpreter services are Emergency, Rehabilitation Center, Health Center for Women, Pediatric Office, and Surgical Day Care, and the top Languages besides English are Spanish, Arabic, ASL, and Brazilian Portuguese.

In 2020, there were 2,807 language interpreter requests at Heywood Hospital; the top four languages identified besides English were Spanish, Arabic, ASL, and Hindi. Table 9 below shows interpreter services program data for FY20.

²⁶ A retrospective cohort study assessed the probability of undergoing MIS vs an open operation for nonwhite patients in Massachusetts compared with 6 control states.

Table 9: FY20 Interpreter Services²⁷

Facility Patient Encounters	
Total unduplicated patients served this fiscal year facility wide	52,446
Total inpatient encounters this fiscal year facility wide	1,677
Total outpatient encounters this fiscal year facility wide	50,769
Interpreter Service Sessions	
Total Interpreter Service requests this fiscal year, including Face-to-Face, Telephonic, Video, ASL	2,807
Total completed Interpreter Service requests this fiscal year, including Face-to-Face, telephonic, video, ASL	2,807
Total non-ASL Face-to-Face interpretation sessions:	1,217
Total ASL Face-to-Face sessions:	46
Total Video Remote sessions	763
Total Telephonic interpretation sessions	781

The Applicant states that Heywood Healthcare’s diversity and inclusion commitment includes ongoing education of staff through the Hospital-Wide Orientation providing education on Heywood’s Diversity Mission, Vision Statement, and an invitation to participate in one of the Multicultural Task Forces. Safety Fairs, Skills fairs, and additional education are provided to departments and/or staff on a 1:1 basis throughout the year. The Schwartz Center Rounds offer education, perspective and share experiences in the areas of diversity, inclusion, discriminatory practice, equity, health disparities, and social determinants of health (SDoH). Staff are also encouraged to participate in various community activity and committees.

For the purposes of performance improvement and quality, Heywood Hospital tracks monthly language access, location turnaround time, patient and staff satisfaction of Encounter Service, time of day, and day of the week to help assess utilization of resources and promote staffing according to need. Contracted services are assessed at least annually for timeliness of service and patient satisfaction. Heywood Healthcare collects racial, ethnicity, and language (REL) data for use in examining opportunities for growth in payer mix, age, sex, diagnosis, and city/town. This information is shared with the Multicultural Task Force²⁸ and integrated into the triennial community health needs assessment (CHNA) and annual LNA completed for the Department of Public Health (DPH) Office of Health Equity (OHE).

The Applicant states that the COVID-19 pandemic highlighted a number of issues that led to a focus in 2021 on the equitable distribution of health care resources, telehealth as a tool for expanding equitable access to care, health care workforce diversity, and the SDoH and root causes of health inequities. Currently, patients are screened for SDoH in various ways.

²⁷ Additional data on interpreter services can be found in the DoN Application, page 8.

²⁸ The Multicultural Task Force, which has evolved into Heywood’s Diversity, Equity, and Inclusion (DEI) Committee, has membership from various Hospital Departments, from previous patients, families, and community agencies, in order to support representation from all groups with the Hospital’s catchment area.

Transportation is considered a SDoH, and the Department of Social Services works with local community agencies to secure transportation for those in need. In 2020, Heywood supported 515 patients with transportation to medical appointments.

Analysis

Staff finds that through their provision of language interpreter services, staff training and SDoH programs, the Applicant has sufficiently outlined a case for improved health outcomes and has provided reasonable assurances of health equity.

Factor 1: c) Efficiency, Continuity of Care, Coordination of Care

The Applicant asserts that the Proposed Project will create improved perioperative workspaces that will achieve the following:

- Enhanced pre- and post-operative communication and coordination with patients' PCPs, surgeons and other providers resulting in greater efficiency and patient engagement.
- Improved communication among surgical staff between cases which will improve overall program efficiency and help to facilitate communication with patients' families waiting for updates.

The Applicant states that it launched Meditech's new electronic health record (EHR) in February 2021. It provides functionality and access to amalgamated patient health information that is regularly reviewed by surgeons and anesthesiologists, has the functionality for surgeons to share post-operative notes and instructions with PCPs and patients, and provides immediate patient access to provider notes and most diagnostic test results.

Analysis

Staff finds that the EHR system will support continuity and coordination of care for surgical patients. Studies show that integrated health information technology systems directly affect health outcomes, as access to a single, integrated health record improves care coordination, can reduce errors, improve patient safety, and thus lead to better patient outcomes.^{p,q}

Factor 1: d) Consultation

The Applicant has provided evidence of consultation, both prior to and after the Filing Date, with all government agencies that have licensure, certification, or other regulatory oversight, which has been done and will not be addressed further in this report.

Factor 1: e) Evidence of Sound Community Engagement through the Patient Panel

The Department's Guideline²⁹ for community engagement defines "community" as the Patient Panel, and requires that at minimum, the Applicant must "consult" with groups representative

²⁹ Community Engagement Standards for Community Health Planning Guideline

of the Applicant's Patient Panel. Regulations state that efforts in such consultation should consist of engaging "community coalitions statistically representative of the Patient Panel."³⁰

To ensure sound community engagement throughout the development of the Proposed Project, the Applicant took the following actions listed below in Table 10.

Table 10: Community Engagement Activities

Event/Meeting	Date Completed
Patient Family Advisory Council (PFAC)	09/22/2020 and 10/20/2020
Gardner City Council Meetings The Proposed Project was presented discussed and voted on at the televised meetings. Additional information about the Proposed Project was shared on the City of Gardner's website and YouTube channel.	10/19/2020, and 12/14/2020.
Community Based Advisory Committee (CBAC) Meetings The Vice President of Community Relations provided an update on the Proposed Project at the CBAC meetings. The CBAC meets quarterly and the Applicant states that the project is a standing item for the committee and that feedback is incorporated for program expansion and improvement.	09/20/2019, 3/26/2021, 05/24/2021, and 06/21/2021
Heywood Hospital hosted a combined PFAC and Multicultural Committee meeting that included appropriate representation of Heywood's Primary and Secondary Service Areas. The Multicultural Task Force, which has evolved into Heywood's Diversity, Equity, and Inclusion (DEI) Committee, has membership from various Hospital Departments, from previous patients, families, and community agencies, in order to support representation from all groups with the Hospital's catchment area. ³¹	03/30/2021
Open public zoom meeting during which the Vice President of perioperative services presented the Proposed Project and responded to questions. Eleven community members were in attendance and the Applicant states that the response was positive.	4/14/2021
Surgical Pavilion – Neighborhood Session	06/16/2021
Surgical Pavilion Community Reception	07/27/2021
Board Philanthropy Committee The Community Relations and Philanthropy Committee of the Board of Trustees meets bi-monthly and the Proposed Project has been a long-standing agenda item with regular input provided from committee members.	

³⁰ DoN Regulation 100.210 (A)(1)(e). <https://www.mass.gov/files/documents/2018/12/31/jud-lib-105cmr100.pdf>

³¹ The Applicant states that membership includes but is not limited to the following: Ahmadiyya Muslim Community, Care Central VNA, City of Gardner, Community Health Center, Congressman McGovern's Office, Congresswoman Trahan's office, GAIT-Gardner Area Interagency Team, Gardner CAC, Disability Commission Heywood Healthcare-Athol & Heywood Hospital-FS,HMG,HR,MCS, Pt Reg,PD,RS,SS,Telehealth Program, Genesis Healthcare, Heywood-Wakefield Commons, Leominster Haitian American Community Center, LUK ,Massachusetts Department of Mental Health, MOC-Making Opportunity Count, Montachusett Suicide Prevention Task Force, North Central Mass Minority Coalition, Open Sky, Patient Family Advisory Committee, Spanish American Center , Three Pyramids Inc, United Hmong of Massachusetts, Wachusett Medical Reserve, Wachusett Rehab & Nursing Center. Attendees are also representative of the LGBTQI+, veterans, disabled, elderly, and youth.

Analysis

Staff finds that the Applicant met the minimum required community engagement standard of Consult in the planning phase of the Proposed Project.

Factor 1: f) Competition On Price, Total Medical Expenses (TME), Costs And Other Measures Of Health Care Spending

The Applicant states that the Proposed Project will compete based on price, TME, costs, and other measures of healthcare spending based on the following:

- Heywood Hospital has lower costs when compared to other facilities where surgical cases are performed. Commercial plan costs at UMass Memorial Medical Center, Heywood's primary competitor, are approximately 49% higher than at Heywood based on S-RP data. In Calendar Year (CY)18, UMass Memorial's commercial S-RP index was 1.09 and Heywood's S-RP index was 0.73.
- Increasing the number of cases performed at Heywood Hospital will result in fewer referrals to higher-cost facilities and systems. Despite space limitations, the Hospital has made efforts to meet its patients' needs for procedural care. Table 11 below shows the number of transfers from Heywood Hospital to other healthcare facilities from FY2017 to FY2019. Patients from Heywood Healthcare's Service Area are going to multiple facilities for numerous types of surgical procedures from cardiovascular to ear, nose, and throat (ENT), and obstetrics. Statewide relative price (S-RP) varies among the facilities and in 2019, several had a S-RP above Heywood's (0.719), including Lahey (0.969), Emerson Hospital (0.904), UMass Memorial Medical Center (1.090), and Boston Medical Center (1.284).

Table 11: Surgical Cases Performed at Other Healthcare Facilities

FY2017	FY2018	FY2019
2,309	2,053	2,160

- Increasing timely access to care will allow for conditions to be addressed earlier and prevent delays in access to care which will reduce costs.

In order to understand the Proposed Project's impact on surgical cases, the Applicant will report on the number of surgical cases performed at other healthcare facilities. This measure is described in Appendix 1 below.

Analysis

Staff examined the parties' prices using the relative price measure developed by the Center for Health Information and Analysis (CHIA) and found Heywood's S-RP and RP to be lower than UMass Memorial's, the Applicant's main competitor.^{32,33}

Table 12: Statewide Relative Price (CY 2019)

	Heywood Hospital	UMass Memorial Medical Center
S-RP	0.719	1.090

Table 13: Relative Price (CY 2019)

BCBS	Heywood Hospital	UMass Memorial Medical Center
Inpatient RP	0.71	1.14
Outpatient RP	0.82	0.99
Tufts	Heywood Hospital	UMass Memorial Medical Center
Inpatient RP	0.51	1.34
Outpatient RP	0.68	0.97
Fallon ³⁴	Heywood Hospital	UMass Memorial Medical Center
Inpatient RP	0.45	1.54
Outpatient RP	0.54	0.94

Staff found evidence supporting costs savings from improving access to minimally invasive surgery (MIS) and other specialized procedures that the Applicant is intending to offer.

- Complications and unplanned readmissions increase treatment costs^r and MIS can help to reduce complications.
- Surgical site infection (SSI) increases the risks for readmission and postoperative mortality and therefore reducing SSI has an impact on the costs of health care.⁵
- Nationally, increased use of MIS in hospitals for certain procedures could prevent thousands of post-operative complications and result in up to \$280 to \$340 million in savings a year compared to using traditional open surgery.^{35,t,u}

³² Relative price (RP) is a calculated metric that measures provider price variation in the Massachusetts health care market. RP is an aggregate measure used to evaluate variation in prices for similar providers within individual payer networks. To ensure prices are appropriately compared across providers, RP adjusts for differences in the quantity and types of services delivered by providers and for differences in the types of insurance products carried by each provider's patients..

³³ S-RP blends relative price across payers using payer payment distributions. Since relative price is calculated within each payer, a blending of relative prices will not account for absolute price differences across payers. For this reason, it is not advisable to use S-RP to understand absolute price differences between one provider and another. S-RP should only be used for directional purposes. A commercial S-RP for a given acute hospital of 1.20 indicates that the hospital is paid 20 percent higher than average S-RP among acute hospitals across commercial payers.

³⁴ Fallon plans to shift away from commercial insurance products and focus on government-sponsored health insurance programs.

- Surgical complications represent a substantial burden of harm to patients and in the United States alone are estimated to cost \$25billion annually. On average, SSIs occur in 2% to 4% of all patients undergoing surgical procedures, resulting in significant morbidity and mortality.^v MIS is associated with lower complications, shorter hospitalizations, and improved postoperative recovery.^w
- In a commercially insured population, the risk-adjusted allowed costs for MIS colectomy episodes were significantly lower than open surgery, and with increasing bundled payment arrangements and accountable care sharing programs, the cost impact of shifting from open to MIS introduces an opportunity for cost savings.^x

Proposed Reporting Measures for FACTOR 1

As a result of information provided by the Applicant and additional analysis, Staff finds that the Applicant has demonstrated that the Proposed Project has met Factor 1(a-f). The Applicant proposed specific outcome, and process measures to track the impact of the Proposed Project which Staff has reviewed, and which will become a part of the reporting requirements, in addition to the measures suggested above by Staff. Reporting must include a description of numerators and denominators, where applicable.

Factor 2: Cost containment, Improved Public Health Outcomes and Delivery System Transformation

Cost Containment

As mentioned in Factor 1f above, the Applicant asserts that Heywood Hospital's costs are lower than other local providers and because the Proposed Project will allow for service line expansion and case volume growth within Heywood's lower cost setting, it will contribute to the Commonwealth's cost containment goals.

- Average costs at Heywood are 38% less than those of the five other hospitals located within a 25-mile radius thus, the Proposed Project advances the Commonwealth's goal of making healthcare equitably available to every person at the lowest reasonable aggregate cost.
- Heywood's share of inpatient surgical market was 23.1% versus 34.2% for UMass Memorial Health Care System (19.3% for the UMass Memorial Medical Center - University Campus and 14.9% for the UMass Memorial Medical Center - Memorial Campus) for Heywood's primary and secondary Service Area communities. Expansion of service line and case growth volume will keep more patients in a low-cost system and contribute to the Commonwealth's cost containment goals.
- Expanded surgical capacity will increase access allowing for more patients to remain in the Heywood system for their procedural care.

³⁵ Study used the 2010 National Inpatient Sample for patients undergoing an appendectomy, a partial colectomy, or a lung lobectomy

Analysis: Cost Containment

Cost containment on a statewide level is impacted through pricing, which is a function of what providers charge payers and what payers agree to pay. While payment contracts between individual providers and commercial payers are confidential, those among providers and Medicare and Medicaid are relatively transparent. As a result, Staff cannot assess how the Applicant's contracts with payers that may incentivize more or less utilization of services are structured for the other project components.

As mentioned above, the Proposed Project will achieve cost savings through reducing transfers to higher cost facilities as well as increasing access to procedural care that will reduce delays in access to care and improve health outcomes.

Regarding the Applicant's stated potential to add robotic surgery capacity after the Proposed Project is implemented, there is evidence that robotic surgery may be cost-effective for certain procedures at higher volumes. This has been evidenced for prostate cancer^y and colectomy.^z Compared to MIS procedures, robotic surgery was generally found to be less cost-effective at a moderate volume of utilization, only becoming slightly more cost-effective than MIS at a high level of utilization.^{aa,bb} Since the Applicant's capacity will be relatively moderate even after the Proposed Project, it is questionable to say that a future robotic surgery program will be cost-effective in the context of the Applicant's current level of volume. There is also a question of the added cost of administration and human resources with new capacity, in addition to the Proposed Project's added MIS capacity.

Improved Public Health Outcomes

The Applicant states that healthcare disparities are identified and addressed through the triennial Community Health Needs Assessment (CHNA), which is a collaborative effort conducted by Heywood Healthcare's Heywood Hospital and Athol Hospital, the Montachusett Regional Planning Commission, UMass Memorial HealthAlliance-Clinton Hospital, the Community Health Network Area (CHNA) 9 Group, and John Snow, Inc. The Community Health Improvement Plan (CHIP) is formulated from the findings in the CHNA and initiatives are carried out over the subsequent three years.

The Applicant states that there are wide-ranging disparities in income and poverty across Heywood's Service Area and notes the presence of health status and access problems that are influenced by complex and interconnected social and economic factors. The Applicant identified the following health disparities based on data from the Patient Panel and Heywood Hospital 2018 CHNA:

- Poverty rates in Gardner (19%), Athol (17%), Wendell(16.1%), and Orange (13.7%) are higher than the overall rate for Massachusetts (11.4%); and the average median household income for 2019 for the Service Area was \$69,149, compared to the state's average median household income of \$81,215.^{cc,dd}

- The number of persons aged 65 and older living alone in the area has increased by 7% between 2010 and 2016; and the median age of people living in the Service Area is ~7 years higher than the state and the Nation.^{ee}
- A lack of transportation inhibits access to jobs, childcare, and healthcare, with some patients (i.e. elderly, and disabled) relying on caregivers to travel to appointments due to the inadequacy of transportation.
- Chronic disease (obesity, diabetes, and heart disease) are among the region's top health issues.
- In 2017, 3,743 or 16.1% of all patients treated at Heywood Hospital's Emergency Department (ED) had an obesity diagnosis on record, and 22.3% of patients discharged from the ED had diabetes with the largest percentage coming from the 65-74 year old age group.^{ff}
- In 2015, The coronary heart disease (CHD) death rate in the Service Area was 206.8 per 100,000 compared to the state rate of 137.5 per 100,000, with the highest rates in Gardner (193.2), Hubbardston (295.6) and Winchendon (231.9).^{gg}
- In 2019, the adult smoking rate was 24.2% in Gardner and 25.4% in Winchendon compared to 13.7% statewide.^{hh,ii}
- In 2019, 5.6% of the total 33,247 total visits to the ED for Heywood Hospital had a primary mental health diagnosis and 18.6% had a secondary mental health diagnosis, resulting in a combined rate of 24.2% of all ED visits.

The Applicant asserts that Heywood Healthcare works closely with community partners and CHNA 9 to address regional disparities, and that Heywood Hospital will use regional health disparity information to inform outreach initiatives to ensure access for those needing surgical care. The Applicant states that relocating surgical services to the new space will allow for the existing endoscopy and interventional pain services to expand their footprint and increase access to preventative procedural care such as screening colonoscopies and interventional pain procedures.

Analysis: Public Health Outcomes

The Applicant has identified several disparities within its existing area. Staff also note that Worcester County has a higher cancer incidence rate than neighboring counties,^{jj} and in 2015, Cancer and Heart Disease were reported as the leading causes of death in the Service Area.^{kk} The Applicant asserts that the Proposed Project will help to increase access to preventative care, which has been shown to improve public health outcomes.^{ll}

Delivery System Transformation

The Applicant states that patients will be provided with linkages to address identified SDoH needs and assigned a community health worker to assist with unanticipated challenges. The Applicant states Heywood Healthcare is currently a partner in UMass Memorial Accountable Care, Inc., led by UMass Memorial Health Care. The total number of member patients is 45,580

and the total number of Heywood member patients is 5,096. Heywood is not enrolled in any national Alternative Payment Model Programs.

Analysis: Delivery System Transformation

Central to the goal of Delivery System Transformation is the integration of social services and community-based expertise. The Applicant has described how patients in the panel are assessed and how linkages to social services organizations are created. The Applicant described a focus in 2021 on SDoH and root causes of health inequities.

SUMMARY for FACTOR 2

As a result of information provided by the Applicant and additional analysis, Staff finds that the Applicant has demonstrated that the Proposed Project has met Factor 2.

Factor 3: Relevant Licensure/Oversight Compliance

The Applicant has provided evidence of compliance and good standing with federal, state, and local laws and regulations and will not be addressed further in this report.

Factor 4: Demonstration of Sufficient Funds as Supported by an Independent CPA Analysis

Under Factor 4, the Applicant must demonstrate that it has sufficient funds available for capital and operating costs necessary to support the Proposed Project without negative effects or consequences to the existing Patient Panel. Documentation sufficient to make such finding must be supported by an analysis by an independent CPA. The CPA examined a range of documents and information in developing its report including nine-year financial projection (Projections) for the Applicant (fiscal years ending 2021 through 2029), Audited Consolidated Financial Statements for the Applicant, various presentations to Leadership on the Proposed Project, historical results, and third party industry data. Additionally, it calculated Key Metrics (profitability, liquidity, and solvency) to assist in determining reasonableness of the Applicant's assumptions and feasibility of the Projections.

Revenue

CPA reports that ~ 91% of revenue is derived from Net Patient Service Revenue (NPSR).³⁶ NPSR is projected to increase between 2.7% and 4.5% annually over the projection period which the CPA states is within range of historical growth of 6.9% in FY2017, 7.6% in FY2018, 4% in FY2019 and 0.8% in FY20. Growth in NPSR in the projections is attributed to 1) FY21 Board approved Budget reflecting a higher level of growth resulting from a recovering in volume from COVID levels, additional growth in service, and improvements in revenue cycle management; 2)

³⁶ The CPA report states that the FY20 results for the Applicant were significantly impacted by the COVID-19 pandemic. The Applicant experienced a loss of NPSR and incremental expenses related to the purchase of personal protection equipment, disinfecting supplies, additional cleaning facility services, and increased technology services to support remote working. CPA Report page 8, footnote 1.

FY2022-FY2029 reflects rate adjustments (governmental, non-Blue Cross commercial rate adjustments, and Blue Cross commercial rate adjustments); and 3) incremental revenue related to the Proposed Project (FY2025-FY2029) related to an increase in procedures which overall are expected to increase 49% from FY2019 levels, which the CPA states is consistent with a 50% increase in the number of ORs).³⁷ Other revenue is projected to grow 0.8% in FY2021 and remain flat for the remainder of the projection period and this is within the historical range of actual growth (-0.1% to 71.8% from FY2017 to FY2020). The nine-year compound annual growth rate (CAGR) for total operating revenue in the Projections of 4% is below Heywood's revenue growth rate in prior four fiscal years (FY2017-FY2020). The CPA found the projected revenue growth to be reasonable and feasible for Heywood.

Operating Expenses

Operating expenses included in the analysis are salaries, employee benefits, supplies, professional fees and purchased services, state taxes, interest, and depreciation and amortization. Salaries accounted for ~50% of total operating expenses, supplies accounted for 12% and professional fees and purchased services accounted for ~23% throughout the projection period. Salaries are based on Board approved budget, and represent a 17.9% growth since FY2020 and will grow 2.75% annually from FY2022 to FY2029. Projected growth in salaries falls within historical ranges (2.7% to 8.3% from FY2017 to FY2020) and in FY2025 salary increases reflect the hiring of six additional FTS for gastrointestinal surgeries and a reduction of two FTEs related to efficiencies gain in having a suite accommodating both inpatient and outpatient surgery. Supplies in FY2021 are based on the Board approved budget, representing a growth in supplies of 12.3% from FY2020, and a 2% growth annually from FY2022 to FY2029. Projected growth in supplies falls within historical growth (-5% to 12.9% from FY2017 to FY2019 excluding FY2020). Professional fees and purchased services in FY2021 are based on the Board approved budget, and represent a growth of 15.7% from FY2020, and 2% growth annually from FY2022 through FY2029. The CPA found the operating expenses projected to be based on reasonable assumptions and feasible for the Applicant.

Shortfall Gap Closure

The financial forecast includes a shortfall gap closure for FY2022 through FY2024. The shortfall reflects future initiatives and strategic plans not yet identified and therefore not allocable to detailed line items in the income statement. The CPA report states that the Applicant undergoes this process as part of its regular forecasting. The CPA found that based on Applicant's actual operating income and budget for the prior two years and year-to-date (YTD) period, the Applicant will continue to close the shortfall gaps in the Projections.

³⁷ The CPA report states that the Projections include incremental revenue and expenses beginning in FY2025, and that the first procedure may be performed at the new surgical pavilion in FY2024, but given the uncertainty, the Projections start in FY2025.

Capital Expenditures and Cash Flows

The CPA reviewed the project costs within the Projections as well as supporting documentation (representing ~75% of the total maximum capital expenditure(MCE)) making up the total MCE, which included an estimate from Consigli related to construction costs which was revised in June 2021 to reflect the increase in price of construction materials following the COVID-19 pandemic, and an estimate of interest from Waterstone properties. The CPA also reviewed the proposed financing of the project. The Applicant's Board of Trustees approved an MCE of 35M on January 21, 2021, and costs in excess of the previously approved Board amount will be funded through the applicant's cash and expect to be approved. The cash required to meet the revised MCE of 38M is included within the cash flows of the Projections. The Applicant has entered into lease over a 30-year term with Waterstone Properties Group, Inc. to construct the surgical pavilion. No debt financing is anticipated.

CPA's Conclusion of Feasibility

The Projections exhibit cumulative operating earnings before interest, taxes, and amortization (EBITDA) surplus of ~6% of cumulative projected revenue for Heywood for FY2021-29, which the CPA found to be reasonable and feasible. The CPA determined that "the Projections are reasonable and feasible and not likely to have a negative impact on the Patient Panel or result in the liquidation of Heywood."

Analysis

Staff is satisfied with the CPA's analysis of Applicants decision to proceed with the Proposed Project. As a result, Staff finds the CPA analysis to be acceptable and that the Applicant has met the requirements of Factor 4.

Factor 5: Assessment of the Proposed Project's Relative Merit

The Applicant has provided sufficient evidence that the Proposed Project, on balance, is superior to alternative and substitute methods for meeting the existing Patient Panel needs identified by the Applicant pursuant to 105 CMR 100.210(A)(1). Evaluation of 105 CMR 100.210(A)(5) shall take into account, at a minimum, the quality, efficiency, and capital and operating costs of the Proposed Project relative to potential alternatives or substitutes, including alternative evidence-based strategies and public health interventions.

The Applicant considered and rejected the following alternatives to the Proposed Project because they were cost-prohibitive, shorter-term solutions, which did not provide the needed physical and fiscal efficiencies for best practice of care delivery and patient experience:

- **Building a separate building for an ambulatory surgery center (ASC).** The Applicant dismissed this alternative because an ASC would not address surgical needs of inpatients and emergency department patients.
- **Upgrading the existing surgical suite.** The Applicant dismissed this alternative because insufficient square footage and lower ceiling heights would limit the size and quantity of the ORs, the ability to implement modern surgical site infection control modalities, and

improvements to internal workspace. The current HVAC would need a complete overhaul costing \$4.5M. Upgrading the existing ORs would not allow the Hospital to manage increasing surgical demand so patient access, wait times for care, and patient privacy would not improve. The Applicant notes that continuing to provide surgical services during an upgrade would increase the risk of surgical site infections.

Analysis

Staff finds that the Applicant has appropriately considered the quality, efficiency, and capital and operating costs of the Proposed Project relative to potential alternatives. As a result of information provided by the Applicant and additional analysis, Staff finds the Applicant has reasonably met the standards of Factor 5.

Factor 6: Fulfillment of DPH Community-based Health Initiatives Guideline: Overall Application

Summary and relevant background and context for this application: This DoN project is one of two current DoN applications under consideration, and given that (subject to DoN project approval) CHI related activities would be implemented concurrently, the Applicant and DPH have agreed to one Factor 6 analysis for both DoN projects. Combined across DoN projects, the CHI requirement is a Tier 2 CHI project. This analysis will appear in the staff report for both DoN projects with the corresponding respective CHI contribution amount. The Applicant's proposed project is the first CHI that will be implemented under the CHI Guidelines approved in 2017.

To fulfill Factor 6 for both DoN projects, the Applicant submitted its existing Community Health Needs Assessment (CHNA) for Heywood Healthcare, its current Community Health Improvement Plan (CHIP), a single Self-Assessment for streamlining purposes, Stakeholder Assessments, and a CHI Narrative.

The Community Health Needs Assessment was conducted in 2018 by Heywood Healthcare, and Heywood Hospital will implement CHI activities. The final Community Health Assessment utilized secondary data sources and primary data gathered from focus groups, a community survey, and qualitative interviews with key healthcare professional informants. The CHNA describes quantitative and qualitative data collection methods and outlines demographic characteristics of the participating communities as well as key findings in community health areas. These findings and areas include social and economic factors, injuries and violence, maternal and infant health, among others. The CHNA also informs the health system's Community Health Improvement Plan in four Priority Areas: Social Determinants, Interpersonal Violence and Injuries, Mental Health and Substance Use, and Wellness and Chronic Disease.

The Self-Assessment provided a summary of community engagement processes and socio-demographic information, data and highlights related to topics and themes of community needs. Through data analysis, community surveying, focus groups, and key informant interviews, the participating community groups and residents identified the key concerns outlined in the 2018 CHNA.

Stakeholder Assessments submitted provided information on the individuals' engagement levels including their level of participation and role, and their analysis of how the Applicant engaged the community in community health improvement planning processes. The information provided in these forms were largely consistent with the self-assessment conducted by the Applicant.

The CHI Narrative provided background and overview information for the CHI processes. The narrative also outlines duties for the community benefit advisory committee (CBAC) and planned structure for seeking feedback and further engagement.

There are differences in approach and alignment between the Applicant's existing Community Health Implementation Plan and Assessment and CHI framework. If used as a guide for choosing CHI strategies, the activities outlined in the Implementation Plan will need to focus in the areas best aligned with the CHI framework to sufficiently meet Health Priority guideline approaches. The CHIP priority areas likely to support identifying needs and implementing activities at the root cause level include the Social Determinants of Health and elements of other areas including food insecurity and violence. Through ongoing communication with DPH staff, the Applicant has agreed to continue to work closely with its Advisory Committee to ensure processes and selected strategies will align with the Health Priorities Guideline. The Applicant will be recruiting for missing constituencies on the existing CBAC, and DPH will work with them to ensure the group's make up is sufficient to help them make decisions in line with the Health Priority framework. Specifically, DPH will work with the Applicant to ensure resident voice is engaged in decision making through the Advisory Committee. DPH staff will support the Applicant as necessary in outlining future Advisory Committee meetings and reviewing community engagement and RFP processes. The Applicant will also connect with DPH staff to establish processes for planning and implementation work moving forward. Regarding the implementation of specific CHI strategies, DPH will work with the Applicant in moving upstream, and identifying needs at the root cause to support sustainable systems level solutions.

The timeline, RFP processes, and use of administrative funds are all appropriate and in line with CHI planning guidelines.

The anticipated timeline for CHI activities includes continued meeting of the Advisory Committee, submitting the Health Priorities Strategies Form within 3 months post approval, and releasing an RFP within six months post approval, with funding awarded to successful RFP applicants 3-4 months thereafter.

With the administrative funds, the applicant's early plans are to support consultant time for CBAC coordination, communication, and the facilitation of grantmaking.

Summary Analysis: As a result of information provided by the Applicant and additional analysis, staff find that with the conditions outlined below, and the ongoing communication on items for improvement outlined above, the Applicant will have demonstrated that the Proposed Project has met Factor 6.

Findings and Recommendations

Based upon a review of the materials submitted, Staff finds that, with the addition of the recommended conditions detailed below, the Applicant has met each DoN Factor for the Proposed Project, and recommends that the Department approve this Determination of Need, subject to all applicable standard and Other Conditions.

Conditions to the DoN

1. Of the total required CHI contribution of \$1,894,187.50
 - a. \$459,340.47 will be directed to the CHI Statewide Initiative
 - b. \$1,378,021.40 will be dedicated to local approaches to the DoN Health Priorities
 - c. \$56,825.63 will be designated as the administrative fee.
2. To comply with the Holder's obligation to contribute to the Statewide CHI Initiative, the Holder must submit a check for \$459,340.47 to Health Resources in Action (the fiscal agent for the CHI Statewide Initiative).
 - i. The Holder must submit the funds to HRiA within 30 days from the date of the Notice of Approval.
 - ii. The Holder must promptly notify DPH (CHI contact staff) when the payment has been made.

Appendix 1

The Holder shall provide, in its annual report to the Department, the following outcome measures. These metrics will become part of the annual reporting on the approved DoN, required pursuant to 105 CMR 100.310(A)(12). Reporting will include a description of numerators and denominators.

1. Length of Hospital Stay
2. 30-day readmission after surgery
3. Incidence Rate of Surgical Site Infections
4. Patient satisfaction top box rating of >95% with surgical and anesthesia care
5. Average Wait times by Surgical Specialty
6. Surgical volume performed at other healthcare facilities

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