

## **APPENDIX 4**

### **FACTOR 4 – CPA REPORT**



## **Analysis of the Reasonableness of Assumptions Used For and Feasibility of Projected Financials of:**

UMass Memorial Health Care, Inc.  
For the Years Ending September 30, 2022  
Through September 30, 2029



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June 10, 2022

Therese Day  
VP, Chief Financial Officer  
UMass Memorial Health Care, Inc.  
306 Belmont Street  
Worcester, MA 01605

**RE: Analysis of the Reasonableness of Assumptions and Projections Used to Support the Financial Feasibility of the Proposed Project**

Dear Ms. Day:

Enclosed is a copy of our report on the reasonableness of assumptions used for and feasibility of the financial projections for UMass Memorial Health Care, Inc. Please contact me to discuss this report once you have had an opportunity to review.

Sincerely,

*BDO USA, LLP*

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306 Belmont Street  
Worcester, MA 01605

**RE: Project Financial Feasibility Services Associated with DPH DON Factor 4**

Dear Ms. Day:

We have performed an analysis related to the reasonableness and feasibility of the financial projections (the "Projections") of UMass Memorial Health Care, Inc. ("UMass Memorial Health", "UMMH" or "the Applicant"), related to the proposed project as detailed further below (the "Proposed Project"). This report details our analysis and findings with regard to the reasonableness of assumptions used in the preparation of the Projections and feasibility of the projected financial results prepared by the management of UMMH ("Management"). This report is to be used by UMMH in connection with its Determination of Need ("DON") Application - Factor 4(a) and should not be distributed or relied upon for any other purpose.

## **I. EXECUTIVE SUMMARY**

The scope of our review was limited to an analysis of the consolidated eight-year financial projections for the Applicant for the fiscal years ending September 30, 2022, through 2029 prepared by Management and the supporting documentation to render an opinion as to the reasonableness of assumptions used in the preparation and feasibility of the Projections.

The Projections exhibit a cumulative operating EBITDA<sup>1</sup> surplus of approximately 5.3 percent of cumulative projected revenue of UMMH for the eight years from fiscal year (“FY”) 2022 through 2029. Based upon our review of the relevant documents and analysis of the Projections, we determined the anticipated operating EBITDA surplus is a reasonable expectation and based upon feasible financial assumptions. Accordingly, we determined that the Projections are reasonable and feasible, and not likely to have a negative impact on the Applicant’s patient panel or result in a liquidation of UMMH’s assets. A detailed explanation of the basis for our determination of reasonableness and feasibility is contained within this report.

## II. RELEVANT BACKGROUND INFORMATION<sup>2</sup>

The Applicant, UMass Memorial Health Care, Inc., is a Massachusetts nonprofit corporation and the largest health care system in central Massachusetts. UMMH is comprised of one academic teaching hospital, UMass Memorial Medical Center (“UMMMC” or the “Hospital”), and three acute care hospitals: HealthAlliance-Clinton Hospital, Marlborough Hospital, and Harrington Hospital. All four of these acute care hospitals are designated by the Center for Health Information and Analysis (“CHIA”) as High Public Payer Hospitals (“HPP”). The system also includes behavioral health services through CommunityHealthlink, primary care, specialists, urgent care through a joint venture, home health, and hospice.

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<sup>1</sup> EBITDA (“Earnings before Depreciation, Interest and Tax”)

<sup>2</sup> Portions of this section of the report were adapted directly from the Project Description section of the Draft UMMH Application Form for DON Application as directed by the Applicant.

UMMMC is a 749-bed academic medical center with multiple campuses and satellites in Worcester and the surrounding communities. The Hospital's University and Memorial Campuses provide acute inpatient and outpatient services, and the Psychiatric Treatment & Recovery Center ("PTRC") provides psychiatric services. The Hospital provides the full spectrum of tertiary acute care, including emergency care, inpatient and outpatient medical and surgical services, including cardiology, neurology, oncology, and radiology. In addition, the Hospital operates a Hospital at Home program for eligible patients to receive hospital-level care from home. Lastly, University Campus operates the second largest emergency department ("ED") in Massachusetts and is the only Level 1 trauma center in Central Massachusetts.

The Proposed Project consists of the following initiatives:

1. Renovation of the six-story building adjacent to UMMC's University campus to develop 72 additional medical-surgical beds (the "new inpatient building" or the "NIB");
2. One computed tomography ("CT") unit and shell space for future build out to accommodate clinical services;
3. 19 additional medical-surgical beds on UMMC's Memorial campus; and
4. Additional renovation projects to improve the existing services and facilities at the Memorial campus.

The Proposed Project aims to provide more timely access to inpatient care as the UMMC's patient panel has been experiencing long wait times in the emergency department and high



emergency boarding rates. Additional inpatient capacity is needed to increase emergency department throughput and provide sufficient access to tertiary care. The additional inpatient beds from the Proposed Project will provide access for low acuity patients, freeing up capacity at University to care for the region's sickest patients.

### III. SCOPE OF REPORT

The scope of this report is limited to an analysis of the eight-year Projections for the fiscal years ending September 30, 2022, through 2029, prepared by Management, and the supporting documentation to render an opinion as to the reasonableness of assumptions used in the preparation and feasibility of the Projections. Reasonableness is defined within the context of this report as supportable and proper, given the underlying information. Feasibility is defined as based on the assumptions used, the Proposed Project is not likely to result in a liquidation of the underlying assets or the need for reorganization.

This report is based on prospective financial information provided to us by Management. BDO understands the prospective financial information was developed as of May 13, 2022 and is still representative of Management's expectations as of the drafting of this report. BDO has not audited or performed any other form of attestation services on the projected financial information related to the operations of UMMH.

If BDO had audited the underlying data, matters may have come to our attention that would have resulted in our using amounts that differ from those provided. Accordingly, we do not express an opinion or any other assurances on the underlying data or projections presented



or relied upon in this report. We do not provide assurance on the achievability of the results forecasted by the Applicant because events and circumstances frequently do not occur as expected, and the achievement of the forecasted results is dependent on the actions, plans, and assumptions of Management. We reserve the right to update our analysis in the event we are provided with additional information.

#### IV. SOURCES OF INFORMATION UTILIZED

In formulating our conclusions contained in this report, we reviewed documents produced by Management as well as third party industry data sources. The documents and information upon which we relied are identified below or are otherwise referenced in this report:

1. Financial Model for UMMH for the periods ending September 30, 2017 through September 30, 2029;
2. Fiscal Year 2022 UMMH Budget Presentation to the UMMH Finance Committee on September 21, 2021, which also includes discussions regarding fiscal year 2021 performance;
3. Draft UMMH Application Form for DON Application;
4. Geotechnical Engineering Services Proposal from McPhail Associates, LLC, dated April 5, 2022;
5. New Inpatient Building Information Systems Estimate, dated March 23, 2022;
6. New Inpatient Building Equipment Estimate; dated March 17, 2022;
7. Signage Quote from Ready 2 Run Graphics & Signs, dated March 23, 2022;

8. Architectural and Engineering Design Services Proposal from Perkins&Will, dated January 14, 2022;
9. Land Surveying Services Estimate from VHB, dated February 11, 2022;
10. P-Tube Cost Study dated February 25, 2022;
11. Artwork Estimate from Lattitude Art Gallery, dated March 24, 2022;
12. New Inpatient Building Furniture Estimate, dated March 24, 2022;
13. New Inpatient Building Schematic Design Estimate from The Whiting-Turner Contracting Company, dated March 28, 2022;
14. Exterior Wayfinding Signage Design Services Proposal from Roll Barresi & Associates, dated February 11, 2022;
15. New Debt Activity Presentation Slides for UMMH;
16. Audited Financial Statements for UMass Memorial Health Care, Inc. for Fiscal Years Ended September 30, 2021, 2020, 2019, 2018, and 2017;
17. Definitive Healthcare data; and
18. IBISWorld Industry Report, Hospitals in the US, dated November 2021.

**V. REVIEW OF THE PROJECTIONS**

This section of our report summarizes our review of the reasonableness of the assumptions used and feasibility of the Projections. Notably, Management indicated the Projections exclude the impact of inflation on both operating revenue and operating expenses after FY 2022. As such, the Projections consider only the impact of volume on both projected revenue (i.e., the number of patient days, discharges, cases/procedures, WRVUs, etc.) and operating



expenses (i.e., the number of case/procedures, FTEs, etc.) for the remainder of the projected period (FY 2023 through FY 2029). Per discussions with Management, we understand that historically the impact of inflation has been similar for both operating revenue and operating expenses. We were not provided with, and therefore did not review, any historical information pertaining to the historical impact of inflation for either operating revenue or operating expenses and therefore relied on Management’s assumption that the impact of inflation would be neutral (the impact of inflation on operating revenue and operating expenses would offset) from FY 2023 to FY 2029. Furthermore, we understand Management discussed this simplifying assumption with staff members from the Massachusetts Department of Public Health prior to preparing the Projections.

The following table presents the Key Metrics, as defined below, which compare the forecasted operating results of the performance of UMMH to market information from IBISWorld and Definitive Healthcare to assess the reasonableness of the Projections.

Key Financial Metrics and Ratios	Projected							
	2022	2023	2024	2025	2026	2027	2028	2029
<b>UMass Memorial Health Care, Inc.</b>								
<b>Profitability</b>								
Operating Margin (%)	0.2%	0.1%	0.2%	0.1%	0.3%	0.4%	0.4%	0.5%
Excess Margin (%)	1.1%	1.0%	1.1%	1.0%	1.2%	1.2%	1.3%	1.4%
Debt Service Coverage Ratio (x)	3.3x	2.6x	2.6x	2.9x	2.9x	2.0x	4.1x	4.0x
<b>Liquidity</b>								
Days Available Cash and Investments on Hand (#)	152.6	176.7	166.6	159.3	156.2	149.6	149.0	148.3
Operating Cash Flow (%)	4.2%	4.4%	4.4%	4.5%	4.7%	4.7%	4.8%	4.9% (1)
<b>Solvency</b>								
Ratio of Long Term Debt to Total Capitalization (%)	30.7%	37.3%	35.1%	32.8%	28.9%	26.4%	23.9%	21.5%
Ratio of Cash Flow to Long Term Debt (%)	22.5%	16.8%	17.9%	20.1%	24.3%	26.7%	29.8%	33.3%
Net Assets Without Donor Restrictions (\$ in thousands)	\$ 1,396,857	\$ 1,453,712	\$ 1,511,755	\$ 1,569,226	\$ 1,632,634	\$ 1,697,750	\$ 1,765,257	\$ 1,834,298
Total Net Assets (\$ in thousands)	\$ 1,519,527	\$ 1,578,325	\$ 1,638,369	\$ 1,697,902	\$ 1,763,434	\$ 1,830,737	\$ 1,900,496	\$ 1,971,857

**Footnotes:**

(1) Operating Cash Flow does not take into account the cash outflow from taxes.



Key Financial Metrics and Ratios	Actual					Industry Data (1)	
	2017	2018	2019	2020	2021	IBIS - Hospitals in the US (2)	Definitive Healthcare
<b>UMass Memorial Health Care, Inc.</b>							
<b>Profitability</b>							
Operating Margin (%)	0.4%	-1.1%	-0.3%	0.5%	2.0%	16.3%	-11.7%
Excess Margin (%)	2.5%	-0.8%	7.6%	-0.8%	6.6%	8.5%	2.0% (3)
Debt Service Coverage Ratio (x)	2.0x	0.6x	4.5x	2.3x	4.0x	1.2x	NA
<b>Liquidity</b>							
Days Available Cash and Investments on Hand (#)	108.5	105.3	140.8	174.6	187.2	NA	40.7
Operating Cash Flow (%)	5.2%	1.3%	6.6%	10.4%	5.5%	55.7%	NA
<b>Solvency</b>							
Ratio of Long Term Debt to Total Capitalization (%)	35.3%	37.3%	34.6%	40.4%	33.1%	NA	NA
Ratio of Cash Flow to Long Term Debt (%)	26.2%	6.1%	33.9%	46.0%	26.4%	NA	NA
Net Assets Without Donor Restrictions (\$ in thousands)	\$ 894,605	\$ 919,727	\$ 980,493	\$ 954,378	\$ 1,337,015	NA	NA
Total Net Assets (\$ in thousands)	\$ 988,789	\$ 1,015,740	\$ 1,076,504	\$ 1,055,400	\$ 1,457,798	NA	NA

**Footnotes:**

- (1) Industry data metrics based on each data source's respective definitions and may differ from the definitions listed below. Further, we note industry metrics only include hospitals and do not reflect health systems, including physician organizations.
- (2) Data from IBISWorld Industry Report 62211 - Hospital in the US published November 2021. The ratios used are for 2020, the most recent available data.
- (3) Net income margin from IBIS and Definitive Healthcare data treated as an equivalent to excess margin.

The Key Metrics fall into three primary categories: profitability, liquidity, and solvency. Profitability metrics are used in the evaluation of management performance in how efficiently resources are utilized. Liquidity metrics, including common ratios such as “days of available cash and investments on hand”, measure the quality and adequacy of assets to meet current obligations as they come due. Solvency metrics measure the company’s ability to take on and service debt obligations. Additionally, certain metrics can be applicable to multiple categories. The table below shows how each of the Key Metrics is calculated.



**Key Financial Metrics and Ratios**

**Ratio Definitions**

**Profitability**

Operating Margin (%)	Operating Profit (Loss) Divided by Net Revenue
Excess Margin (%)	Excess Revenue Divided by (Net Revenue + Total Nonoperating Income)
Debt Service Coverage Ratio (x)	(Excess Revenue + Depreciation and Amortization + Interest) Divided by (Principal Payments and Interest)

**Liquidity**

Days Available Cash and Investments on Hand (#)	Cash and Investments Divided by [(Total Operating Expenses Less Depreciation and Amortization) Divided by 365 Days]
Operating Cash Flow (%)	(Operating Profit + Depreciation + Change in Working Capital) Divided by Net Revenue

**Solvency**

Ratio of Long Term Debt to Total Capitalization (%)	Long-Term Debt (Non-Current Portion of Long-Term Debt + Long-Term Lease Obligations) Divided by Total Capitalization (Long-Term Debt + Long-Term Lease Obligations + Net Assets Without Donor Restrictions)
Ratio of Cash Flow to Long Term Debt (%)	Total Cash Flows from Operations (Operating Profit + Depreciation + Change in Working Capital) Divided by Long-Term Debt (Non-Current Portion of Long-Term Debt + Long-Term Lease Obligations)
Net Assets Without Donor Restrictions (\$ in thousands)	Net Assets Without Donor Restrictions
Total Net Assets (\$ in thousands)	Total Net Assets

**1. Revenue**

We analyzed the projected revenue within the Projections. Operating revenue for the Applicant includes PSR<sup>3</sup>, net assets released from restricted use, and other operating revenue. We note that the cumulative PSR comprises 93.3 percent of the cumulative total operating revenue from FY 2022 through FY 2029.

<sup>3</sup> PSR (“Patient Service Revenue”)

Total PSR for the Projections is expected to grow by 10.6 percent in FY 2022 when compared to FY 2021. It is important to note that the Management provided FY 2021 financials only include three months of Harrington Hospital's performance while the FY 2022 represents a full year. Per the budget presentation, PSR growth in FY 2022 is largely due to Management's expectation that operations will return to normal after being significantly impacted by the global pandemic caused by COVID-19. When compared to FY 2021, FY 2022 total operating revenue is expected to increase approximately 4.6 percent (relative to the PSR growth rate of 10.6 percent). Management indicated that this expected revenue growth relates to several initiatives that UMMH implemented recently or plans to implement early in FY 2022. One such initiative is UMMH's ambulatory transformation which has helped the Applicant more efficiently utilize its existing capacity, clinical network, and staff. The addition of telemedicine and finding alternative sites of care (e.g. Hospital at Home) helps add capacity without needing to use physical rooms. As a result of UMMH's various operational improvements, the Applicant expects to be able to treat patients with low acuity cases more efficiently and enable senior physicians to focus more on providing care to an expanded patient group with higher acuity levels. Accepting higher level acuity cases will help increase UMMH's volume and value per unit metrics.

For the remainder of the Projection Period (FY 2023 through FY 2029), Management projected revenue growth of 0.0 percent except for FY 2025 and FY 2026. As noted previously, the FY 2023 through FY 2029 revenue projections consider changes in volume only, not the impact of inflation or price increases. Beginning in FY 2025, Management incorporated incremental volume related to the Proposed Project as the NIB and expansion on the Memorial campus

are expected to open in FY 2025 based on the Applicant's timeline as of the drafting of this report. The impact of the Proposed Project on PSR was an increase of 4.0 percent in FY 2025, 0.2 percent in FY 2026, and 0.0 percent thereafter. In projecting incremental PSR related to the Proposed Project, Management utilized payor mixes and reimbursement rates, as applicable, based on year-to-date actual results through March 2022. Management then forecasted the incremental volume associated with the Proposed Project and incorporated additional inpatient discharges, CT scans, and visits to the Departments of Medicine and Radiology. The projections also include incremental other operating revenue related to additional cafeteria sales and parking revenue.

In order to determine the reasonableness of the projected revenue, we reviewed the underlying assumptions upon which Management relied. Based upon our review of the information provided and the discussions noted above, we understand Management relied upon historical operating results and anticipated demographic trends in UMMH service area. The revenue growth anticipated for FY 2022, FY 2025, and FY 2026 are below the four-year compound annual growth rate ("CAGR") and also within or below the range of annual revenue growth rates for the Applicant between FY 2017 and FY 2021 as indicated in the table below. (The remainder of the years in the projections have an operating revenue growth rate of 0.0 percent). We note UMMH's growth before COVID-19 was between 2.0 to 5.9 percent in FY 2018 and FY 2019 respectively. The increased acuity and volume were a large driver of the 7.9 and 11.1 percent growth UMMH saw in FYs 2020 and 2021, respectively, as well as the addition of Harrington Hospital in FY 2021.



	FY2022 Growth	FY2025 Growth	FY 2026 Growth	CAGR (2017 - 2021)	Annual Growth Range (2017 - 2021)
Operating Revenue Projection	4.6%	3.6%	0.2%	6.7%	2.0% - 11.1%

Based upon the foregoing, it is our opinion that the revenue growth projected by Management reflects a reasonable estimation of future revenue of UMMH. We note that the assumed revenue growth beyond FY 2022 is based solely on Management’s consideration of changes in volume only, not the impact of inflation or price increases beyond FY 2022. We further note that Management’s assumption of de minimis volume growth (excluding the volume growth assumed related to the Proposed Project) beyond FY 2022 is consistent with recent historical and projected demographic trends in UMMH’s service areas ranging from 0.4 to 0.5 percent annually.

## 2. Operating Expenses

We analyzed each of the categorized operating expenses for reasonableness and feasibility related to the Projections. The operating expenses in the analysis include salaries and wages, employee benefits, professional fees, purchased services, pharmacy, medical supplies, non-medical supplies, utilities, insurance, rentals and leases, other direct expenses, medical education services, depreciation and amortization, and interest expense.

Total expenses within the Projections are estimated to grow 6.5 percent in FY 2022 compared to the 9.4 percent in FY 2021. The main drivers of the higher expenses are increased salaries





and wages, benefits and supplies due to inflation, supply constraints, and labor shortages. Management noted that these same factors, as well as additional expense from Harrington Hospital for one quarter of 2021, contributed to the 9.4 percent expense growth in FY 2021. Management expects some drivers of this expense growth to moderate in FY 2022, resulting in a lower year-over-year growth rate of 6.5 percent.

Thereafter, similar to operating revenue, Management held operating expenses constant, assuming 0.0 percent growth for FY 2023 through FY 2029, except for interest expense which is projected based on UMMH's projected level of debt and current terms, as well as the incremental expenses related to the Proposed Project. Incremental expenses related to the Proposed Project fall within each of the expense categories indicated above and are based on the additional volume assumed.

The following table indicates the projected increases in FY 2022 and FY 2025 are within range of annual expense growth rates between FY 2017 and FY 2021.

	FY2022 Growth	FY2025 Growth	CAGR (2017 - 2021)	Annual Growth Range (2017 - 2021)
Expense Projection	6.5%	3.6%	6.2%	3.6% - 9.4%

Based upon the foregoing, it is our opinion that the operating expenses within the Projections reflect reasonable estimation of future expenses of the Applicant. We note that the projected total expenses as a percentage of total revenue range from 99.5 to 99.9 percent from FY 2022 to FY 2029. We further note that this level of total expenses is consistent with the

historical total expenses as a percentage of total revenue which ranged from 98.0 to 101.1 percent from FY 2017 to FY 2021.

### **3. Capital Expenditures and Proposed Project Financing**

We reviewed the capital expenditures projected related to the Proposed Project. The project costs related to the NIB are expected to be approximately \$162.7<sup>4</sup> million while the project costs for the other components of the Proposed Project combined are expected to be \$21.1 million, for a total of \$183.8 million. The expenditures for the NIB are included within the Projections in FY 2023 and FY 2024. The Projections also include routine capital expenditures for UMMH of \$174.0 million annually, of which the Proposed Project, excluding the NIB, are subsumed. The project cost for the NIB was developed based upon the prior experience of internal resources as well as estimates/bids from various third parties, which were obtained and reviewed by BDO, including The Whiting-Turner Contracting Company, Perkins&Will, McPhail Associates, LLC, Ready 2 Run Graphics & Signs, VHB, Lattitude Art Gallery, and Roll Barresi & Associates.

In addition to capital expenditures, we also reviewed the proposed financing of the projects. The Projections detailed that a mix of debt financing and routine capital would be utilized to fund the Proposed Project. Debt financing accounts for the expenditures related to the NIB, while the additional components of the Proposed Project, excluding the NIB, will be

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<sup>4</sup> We understand the building and land was previously acquired and as a result, such expense was not included within the Projections.

funded through routine capital expenditures. We reviewed slides from a capital financing plan indicating UMMH's recommendation of new debt activity. We understand per Management that the Applicant has selected an underwriter, the Appendix A has been completed, and the Applicant plans to issue and close the new debt before the end of the fiscal year.

## VI. FEASIBILITY

We analyzed the Projections and Key Metrics for the Proposed Project. In preparing our analysis we considered multiple sources of information including industry metrics, historical results, and Management expectations. It is important to note that the Projections do not account for any anticipated changes in accounting standards. These standards, which may have a material impact on individual future years, are not anticipated to have a material impact on the aggregate Projections.

Within the projected financial information, the Projections exhibit a cumulative operating EBITDA surplus of approximately 5.3 percent of cumulative projected operating revenue for the eight years from FY 2022 through FY 2029. Based upon our review of the relevant documents and analysis of the Projections, we determined the anticipated EBITDA surplus is a reasonable expectation and based upon feasible financial assumptions. Accordingly, we determined that the Projections are reasonable and feasible, and not likely to have a negative impact on the patient panel or result in a liquidation of assets of UMMH.



Respectively submitted,

A handwritten signature in black ink, appearing to read 'Erik Lynch'. The signature is written in a cursive, fluid style.

Erik Lynch  
Partner, BDO USA LLP