Analysis of the Reasonableness of Assumptions Used For and

Feasibility of Projected Financials of:

UMass Memorial Heath Care, Inc.

For the Years Ending September 30, 2025

Through September 30, 2032

March 21, 2025

UMass Memorial Healthcare, Inc.

Brian Huggins

Sr. VP of Finance & Corporate Controller

UMass Memorial Health Care, Inc.

100 Front Street

Worcester, MA 01608

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

Dear Mr. Huggins :

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

Sincerely,

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March 21, 2025

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Worcester, MA 01608

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

Dear Mr. Huggins:

We have performed an analysis related to the reasonableness and feasibility of the financial projections (the “Projections”) of UMass Memorial Healthcare, Inc. (“UMass Memorial Healthcare”, “UMMHC” or “the Applicant”), related to acquisition of a single-room proton therapy system, the introduction of proton beam therapy services (“Proton Beam Therapy”), and the physical expansion of the UMass Memorial Medical Center's Cancer Center to include the proton therapy service (“Proton Therapy Service”) located on the campus of UMass Memorial-Marlborough Hospital (collectively, the "Proposed Project"). This report details our analysis and findings regarding the reasonableness of assumptions used in the preparation of the Projections and feasibility of the projected financial results prepared by the management of UMMHC (“Management”). This report is to be used by UMMHC in connection with its Determination of Need (“DON”) Application – Factor 4(a) and should not be distributed or relied upon for any other purpose.

# EXECUTIVE SUMMARY

The scope of our review was limited to an analysis of UMMHC’s eight-year financial projections for the Applicant for the fiscal years ending September 30, 2025 through 2032 prepared by Management and the supporting documentation in order 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 EBIDA surplus of approximately 4.6 percent of cumulative projected revenue for UMMHC for the eight years from FY 2025 through 2032. Based upon our review of the relevant documents and analysis of the Projections, we determined the anticipated operating EBIDA 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 UMMHC’s major assets. A detailed explanation of the basis for our determination of reasonableness and feasibility is contained within this report.

# RELEVANT BACKGROUND INFORMATION[[1]](#footnote-1)1

The Applicant, UMass Memorial Healthcare, Inc., is the largest integrated healthcare delivery system and employer in Central Massachusetts. UMMHC encompasses a comprehensive network, including one academic medical center, UMass Memorial Medical Center (“UMMMC”); four acute care community member hospitals, such as UMass Memorial-Marlborough Hospital (“Marlborough Hospital”); the UMass Memorial Medical Center’s Cancer Center at Marlborough (“Cancer Center”); UMass Memorial Medical Group; and the UMass Memorial Hospital at Home Program. UMMHC is dedicated to serving the residents of Central Massachusetts and is the sole corporate member of UMass Memorial Community Entities, Inc. (“UMMCE”) along with several other affiliates.

UMass Memorial Medical Center is an 826-bed academic medical center with multiple campuses and satellite facilities in Worcester and the surrounding communities. UMMMC offers a comprehensive range of tertiary acute care services, including emergency care, as well as inpatient and outpatient medical and surgical services across specialties such as radiology, cardiology, neurology, and oncology. Marlborough Hospital, a community member hospital within the UMMHC network, provides emergency care along with a diverse array of services, including inpatient, surgical, outpatient, and diagnostic services.

UMass Memorial Medical Center plans to acquire the MEVION S250i System, featuring HYPERSCAN pencil beam scanning technology. The Proton Therapy Service will also include cutting-edge imaging and treatment planning capabilities, including 4D computed tomography (“CT”) simulation and adaptive radiotherapy. These technologies enable precise tumor targeting while minimizing damage to surrounding healthy tissues. Additionally, the center will integrate the latest advancements in patient positioning, imaging, and immobilization systems to ensure optimal treatment accuracy and reproducibility.

The Proposed Project aims to meet the increasing demand for proton therapy in Central Massachusetts and beyond, offering the Applicant’s Patient Panel access to advanced and highly effective cancer care within the region. The necessity for this project is underscored by the volume of cancer cases requiring radiation therapy, the specific cancer types treatable with Proton Beam Therapy, cancer growth trends in UMMHC's Total Service Area and Massachusetts, and the regional population growth in Central Massachusetts.

Aligned with UMMHC’s legacy of clinical innovation and dedication to providing cutting-edge, life-saving treatment options, the establishment of a Proton Therapy Service in Central Massachusetts will significantly enhance UMMHC’s Cancer Center. This will provide residents with access to the most advanced radiation treatment options for certain cancers, notably pediatric cancers. The Proposed Project will offer competitive advantages in terms of price, total medical expenses, provider costs, and other recognized measures of healthcare spending. By providing proton therapy through a more affordable health system, patients can avoid the need to travel to more expensive care sites. Consequently, the Proposed Project satisfies the criteria for Determination of Need approval.

# 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, 2025 through 2032, prepared by Management, and the supporting documentation in order 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 major 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 February 25, 2025 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 UMMHC.

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 that we are provided with additional information.

# 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 UMMHC on consolidated basis, including the operation of Proton Therapy Service for the periods ending September 30, 2025 through September 30, 2032;
2. Proposed fiscal year 2024 and 2025 UMMHC Budget Presentation dated as of September 24, 2024;
3. Final fiscal year 2025 budget for UMass Memorial Health - Milford Regional Medical Center (“MRMC”) dated as of September 30, 2024;
4. Draft DON Narrative report as of February 26, 2025;
5. Purchase Agreement for Mevion S250i Proton Therapy System;
6. Schematic Design Estimate for UMMHC prepared by Consigli Construction Co., Inc.;
7. Debt Agreement of UMMHC dated as of January 23, 2025;
8. UMMHC’s Patient Volume Market Analysis;
9. The Proposed Project’s Capital Expenditure Estimate Analysis;
10. Certificate Of Need Application prepared by Danbury Proton LLC, submitted to State of Connecticut’s Office of Health Strategy (OHS Version July 18, 2022);
11. Audited Financial Statements for UMass Memorial Healthcare, Inc. and its affiliates for Fiscal Years Ended September 30, 2021 through 2024;
12. Definitive Healthcare data as of January 2024;
13. Data obtained from Integra Information, A Division of Microbilt Corporation as of February 5, 2025; and,
14. IBISWorld Industry Report, Hospitals in the US, dated October 2024.

# REVIEW OF THE PROJECTIONS

This section of our report summarizes our review of the reasonableness of the assumptions used and feasibility of the Projections.

The following table presents the Key Metrics, as defined below, which compare the forecasted operating results of the performance of UMMHC to market information from Integra Reports (“Integra”), IBISWorld, and Definitive Healthcare to assess the reasonableness of the Projections.

**Projected Key Financial Metrics and Ratios**

| UMMHC | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Profitability**: Operating Margin (%) | 0.2% | -0.1% | 0.1% | 0.2% | 0.3% | 0.3% | 0.3% | 0.4% |
| **Profitability**: Excess Margin (%) | 0.9% | 0.7% | 0.8% | 0.9% | 1.0% | 1.0% | 1.1% | 1.1% |
| **Profitability**: Debt Service Coverage Ratio (x) | 1.92x | 2.77x | 2.87x | 3.06x | 3.73x | 3.83x | 3.95x | 4.01x |
| **Liquidity**: Days Available Cash and Investments on Hand (#) | 141 | 134 | 130 | 129 | 128 | 127 | 127 | 127 |
| **Liquidity**: Operating Cash Flow (%) | 3.9% | 3.4% | 3.5% | 3.7% | 3.8% | 3.8% | 3.9% | 3.9% |
| **Solvency:** Ratio of Long-Term Debt to Total Capitalization (%) | 36.9% | 35.5% | 34.4% | 33.1% | 32.0% | 30.8% | 29.7% | 28.7% |
| **Solvency:** Ratio of Cash Flow to Long Term Debt (%) | 16.8% | 15.1% | 16.3% | 17.5% | 18.4% | 19.1% | 19.7% | 20.2% |
| **Solvency:** Unrestricted Net Assets ($ in million) | $1,738 | $1,781 | $1,831 | $1,885 | $1,943 | $2,003 | $2,065 | $2,128 |
| **Solvency:** Total Net Assets($ in million) | $1,872 | $1,918 | $1,973 | $2,031 | $2,093 | $2,157 | $2,224 | $2,291 |

**Historical Data and Industry Data Key Financial Metrics and Ratios**

| UMMHC | 2021 | 2022 | 2023 | 2024 | Integra - General Medical and Surgical Hospitals | IBIS - Hospitals  in the US (3-year) | Definitive Healthcare |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Profitability**: Operating Margin (%) | 2.0% | -1.1% | 3.9% | 0.6% | 2.5% | 11.8% | -10.7% |
| **Profitability**: Excess Margin (%) | 6.6% | -4.7% | 5.7% | 4.1% | 0.8% | NA | -3.7% |
| **Profitability**: Debt Service Coverage Ratio (x) | 3.96x | -0.03x | 6.52x | 4.71x | 1.5x | 8.1x | NA |
| **Liquidity**: Days Available Cash and Investments on Hand (#) | 187 | 135 | 149 | 147 | NA | NA | NA |
| **Liquidity**: Operating Cash Flow (%) | 5.5% | 2.5% | 4.0% | 8.9% | 4.2% | 55.0% | NA |
| **Solvency:** Ratio of Long-Term Debt to Total Capitalization (%) | 31.2% | 39.4% | 33.0% | 30.4% | 43.4% | NA | NA |
| **Solvency:** Ratio of Cash Flow to Long Term Debt (%) | 26.4% | 10.2% | 18.6% | 50.6% | 15.0% | NA | NA |
| **Solvency:** Unrestricted Net Assets ($ in million) | $1,337 | $1,239 | $1,544 | $1,609 | NA | NA | NA |
| **Solvency:** Total Net Assets($ in million) | $1,458 | $1,340 | $1,650 | $1,734 | NA | NA | NA |

Footnote:

* Industry data ratios based on each data source's respective definitions and may differ from the ratio definitions listed below.
* Net income margin from Integra 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.

**Ratio Definitions for Key Financial Metrics and Ratios**

| Ratio | Definitions |
| --- | --- |
| **Profitability**: Operating Margin (%) | Operating Profit (Loss) Divided by Total Operating Revenue |
| **Profitability**: Excess Margin (%) | Excess of Revenue Divided by (Total Operating Revenue + Total Nonoperating Gains) |
| **Profitability**: Debt Service Coverage Ratio (x) | (Excess of Revenue + Depreciation and Amortization + Interest) Divided by (Interest + Scheduled Debt Repayment) |
| **Liquidity**: Days Available Cash and Investments on Hand (#) | (Cash and Cash Equivalents) Multiplied by 365 Divided by (Total Operating Expenses Less Depreciation and Amortization) |
| **Liquidity**: Operating Cash Flow (%) | (Operating Profit (Loss) + Depreciation and Amortization + Changes in working capital) Divided by Total Operating Revenue |
| **Solvency:** Ratio of Long-Term Debt to Total Capitalization (%) | (Long Term Debt + Long Term Lease Obligations) Divided by Total Capitalization (Long Term Debt + Long Term Lease Obligations + Total Net Assets) |
| **Solvency:** Ratio of Cash Flow to Long Term Debt (%) | (Operating Profit (Loss) + Depreciation and Amortization + changes in working capital) Divided by (Long Term Debt + Long Term Lease Obligations) |
| **Solvency:** Unrestricted Net Assets ($ in million) | Total Unrestricted Net Assets |
| **Solvency: Total Net Assets** ($ in million) | Total Net Assets |

1. **Revenue**

We analyzed the projected revenue within the Projections. Revenue for the Applicant includes patient service revenue and other operating revenue. We note that the cumulative patient service revenue comprises 95.0 percent of the cumulative total operating revenue from FY 2025 through FY 2032. Projected patient service revenue for UMMHC is expected to grow by 12.0 percent in FY 2025 when compared to FY 2024. We note that nominal growth in patient service revenue was projected by Management from FY 2026 and FY 2032. The total operating revenue for FY 2025 aligns with the budget that was presented to and approved by the UMMHC Finance Committee. Based on the budget presentation and discussions with Management, several factors are expected to drive projected revenue growth in FY 2025. Management emphasized that the successful integration of MRMC is expected to add 9.7 percent in patient service revenue in 2025. This growth is further supported by the opening of the North Pavilion, which added seventy-two new beds to UMMMC, enhancing capacity going forward. Additionally, an annual system price increase, influenced by inflation and other factors, contributes to the revenue boost. The UMMHC's strengthened reputation and its ability to retain higher acuity patients are also anticipated to play a crucial role in sustaining this upward trend.

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 the UMMHC service area. The consolidated total operating revenue growth for UMMHC anticipated for FY 2025 is slightly below the three-year compounded annual growth rate (“CAGR”) and within the range of annual revenue growth rates for the Applicant between FY 2022 and FY 2024 as indicated in the table below. The consolidated total operating revenue growth for UMMHC for the remainder of the Projection Period (FY 2026 to FY 2032) is anticipated to be mostly flat.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Annual Growth Range (2022 – 2024) | CAGR  (2021 – 2024) | 2025 Growth | Annual Growth Range (2026-2032) |
| Revenue Projection |  | 7.9% – 12.9% | 10.7% | 10.1% | 0.0% – 0.2% |

Based upon the foregoing, it is our opinion that the revenue growth projected by Management reflects a reasonable estimation of future revenue of UMMHC.

1. **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, purchased services – affiliates, pharmacy, medical supplies, non-medical supplies, utilities, insurance, rental leases, other direct expenses, system allocation expenses, participation payment, medical education services, depreciation and amortization, and interest expenses. Total consolidated expenses within the Projections are projected to grow by 10.5 percent, 0.2 percent and 0.1 percent in FY 2025, FY 2026 and FY 2028, respectively, which is in-line with projected revenue growth. In FY 2025, the rise in operating expenses, similar to revenue, is primarily attributed to the integration of MRMC, which contributes an additional 9.5% to operating expenses for that year. For all the remaining years, Management held total operating expenses relatively flat, assuming nominal growth for FY 2027 and FY 2029 through FY 2032, except for interest expense which is projected based on UMMHC’s projected level of debt and current terms, depreciation and amortization, and other direct expenses. According to the budget presentation, the primary factors influencing changes in operating expenses in the initial years of the projections are the staffing costs associated with the North Pavilion and the transition from temporary contractors to permanent employees.

The following table indicates the growth in FY 2025 is slightly below the three-year CAGR and within the range of annual expense growth rate between FY 2022 and FY 2024. The additional factors other than those mentioned above for the change in expense growth are inflation impact which in turn will affect the recruitment and retention and supply chain, integration of Milford Regional Medical Center, and continued strategic investments while maintaining fiscal discipline.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Annual Growth Range (2022 – 2024) | CAGR  (2021 – 2024) | 2025 Growth | Annual Growth Range (2026-2032) |
| Expense Projection |  | 2.6% - 16.8% | 11.3% | 10.5% | 0.0% - 0.2% |

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 for UMMHC as a percentage of total revenue range from 99.6 percent to 100.1 percent from FY 2025 to FY 2032. We further note that this level of total expenses is consistent with the historical UMMHC’s total expenses as a percentage of total revenue which ranged from 96.1 percent to 101.1 percent from FY 2021 to FY 2024.

1. **Capital Expenditures**

We have reviewed the project costs associated with the Proposed Project. As outlined below, the total anticipated capital expenditures for the Proposed Project are estimated at $59.4 million. This estimate excludes the filing fee for the Determination of Need (“DoN”) application and the capital expenditures related to the 4D CT simulation.

| Description | Capital Cost ($USD Actuals) |
| --- | --- |
| Construction | $22,376,265 |
| Information Services | $3,000,000 |
| Proton Equipment | $19,200,000 |
| Contingency Cost | $3,485,969 |
| Legal and Administrative Support | $937,911 |
| Post-filing Planning and Development Costs | $7,723,648 |
| Community Health Benefits Initiative (CHI) | $2,679,902 |
| **Total** | **$59,403,695** |

In addition to capital expenditures, we engaged in discussions with Management regarding the anticipated financing of the Proposed Project. It is understood that the capital expenditures will be funded through UMMHC’s investments and cash flows, and these expenditures are incorporated within the Applicant’s financial Projections. The Projections account for cumulative routine capital expenditures and major projects totaling $1,876.7 million over the next eight years (FY 2025 through FY 2032), with the capital expenditures for the Proposed Project included in this total. The expenditures related to the Proposed Project represent approximately 3.2% of the total capital expenditures over this period. As of the balance sheet for FY 2024, the Applicant had $1,658.6 in cash and short-term investments. Additionally, the financial model indicates that over the eight years of projected financial data, total cash and short-term investments on the balance sheet will average approximately $1,634.1 million annually, prior to considering the Applicant’s various assets that can be used to fund the Proposed Project.

# 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 EBIDA surplus of approximately 4.6 percent of cumulative projected operating revenue for the eight years from FY 2025 through FY 2032. Based upon our review of the relevant documents and analysis of the Projections, we determined the anticipated EBIDA 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 major assets of UMMHC.

Respectively submitted,

1. 1 Portions of this section of the report were adapted directly from the Project Description section of the Draft UMMH DON Narrative as of February 26, 2025, provided by the Applicant. [↑](#footnote-ref-1)