THE UNIVERSITY OF NORTH CAROLINA SYSTEM

Report on FY 2019 UNC System Debt Capacity Study

May 19, 2020

Approved by the UNC Board of Governors on May 20, 2020

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FY 2018-19 Debt Capacity Study

Purpose of the Study

The Current Operations and Capital Improvements Appropriations Act of 2015, which was signed into law on September 18, 2015, added a new Article 5 to Chapter 116D of the General Statutes of North Carolina (the "*Act*"), requiring each constituent institution (collectively, the "*Institutions*") of The University of North Carolina (the "*University*") to provide the Board of Governors of the University (the "*Board*") with an annual report on its current and anticipated debt levels. The Act requires that the University, in turn, submit to the Office of State Budget and Management, the Joint Legislative Commission on Governmental Operations, the State Treasurer and The University of North Carolina System (the "*UNC System*") an annual study incorporating each Institution report.

This report (the "*Study*") has been developed to address the Act's mandate to advise stakeholders "on the estimated debt capacity of The University of North Carolina for the upcoming five fiscal years" and establish "guidelines for evaluating the University's debt burden."

The Act also requires the Board to submit a uniform report from each institution regarding its debt burden and anticipated debt levels, in addition to other data and information relating to each institution's fiscal management. Those Institution Reports are attached to the Study as **Appendix D**.

Methodology Used

Since the Act defines "debt" for the purposes of the Study to exclude debt serviced with "funds appropriated from the General Fund of the State," the Study primarily focuses on special obligation bonds issued under Article 3 of Chapter 116D ("*special obligation bonds*" or "*general revenue bonds*") and other long-term debt issued on behalf of each institution to finance various capital facilities, including housing and other enterprise projects.

N.C. General Statute §116D-26(a) prohibits using the obligated resources of one institution to secure the debt of another institution, meaning the University has no debt capacity independent of its constituent Institutions' individual ability to issue debt. The Study does not, therefore, aggregate each institution's individual debt levels and obligated resources to derive a University-wide debt capacity metric. Instead, the Study offers a comprehensive review of each institution's debt capacity using the guidelines presented in the Act, which the System has presented in detail in the Institution Reports included as part of **Appendix D**.

The Act expressly requires the University to establish guidelines for two ratios—**debt to obligated resources** and a **five-year payout ratio**. The Study also includes two additional ratios that are more widely used to measure a public university's debt burden—**expendable resources to debt** and **debt service to operating expenses**. For more details on the ratios, see the information under the caption "Description of Ratios" on the following page.

The Study is based on a financial model that has been developed to measure four ratios on a pro forma basis over the next five years (the "*Study Period*"). Recognizing the wide diversity in enrollment, funding sources and missions across each institution, the UNC System has worked with each institution to establish tailored and meaningful target policies for its respective ratios.

While an institution's ultimate debt capacity is affected by numerous quantitative and qualitative factors, for the purposes of the Study, "*estimated debt capacity*" is defined as the maximum amount of debt each institution could issue without exceeding its ceiling ratio for debt to obligated resources in any single year of the study period.

Description of Ratios

The model considers the following four ratios:

Statutory Ratios

Ratio	Explanation	Commentary
Debt to Obligated Resources	Compares each institution's outstanding debt to the funds legally available to service its debt	• Provides a general indication of an institution's ability to repay debt from wealth that can be accessed over time • Tied to the statutory framework for institution debt, so ratio is not used outside the State
Five-Year Payout	Measures the percentage of each institution's debt to be retired within the subsequent five year period	• Indicates how rapidly an institution's debt is amortizing and how much additional debt capacity may be created in the near term • Five year horizon is not widely used

Supplementary Ratios

Ratio	Explanation	Commentary
Debt Service to Operations	Measures debt service burden as a percentage of each institution's total operating expenses	• Indicates an institution's operating flexibility to finance existing requirements and new initiatives • Uses expenses rather than revenues because expenses tend to be more table year-over-year • Permits comparison to peers outside the State
Expendable Resources to Debt	Measures the number of times each institution's liquid and expendable net assets covers its aggregate debt	• Provides a general indication of an institution's ability to repay debt from wealth that can be accessed over time • Permits comparison to peers outside the State

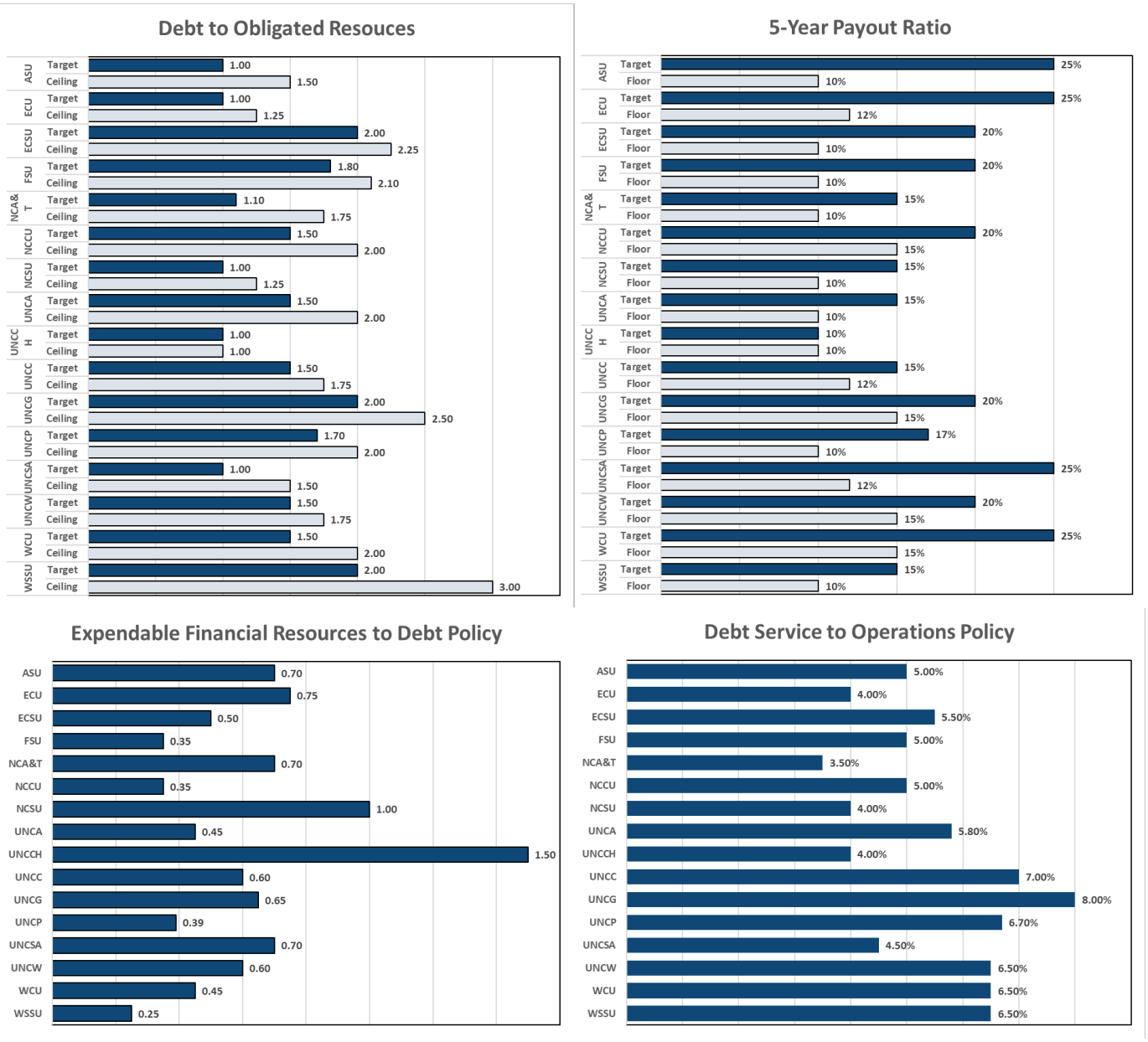
The first two ratios—**debt to obligated resources** and **five-year payout**—are mandated by the Act. While the ratios provide useful snapshots of each institution's debt profile and fiscal condition, the two ratios are not used outside of North Carolina. To provide additional data points and peer comparisons, the Study tracks two additional ratios—**debt service to operations** and **expendable resources to debt**.

Note that the Study uses each institution's "Available Funds" as a proxy for its obligated resources. "Available Funds" is reported publicly by each institution with outstanding general revenue bond debt and reflects how Article 3's "obligated resources" concept has been translated into the bond documentation governing each institution's general revenue bonds. The two concepts are identical for most institutions, but to the extent there is any discrepancy, "Available Funds" will produce a lower, more conservative figure.

See **Appendix A** for more information on the ratios and the definitions for related terms.

Overview of Target and Policy Ratios

For the two statutorily-required ratios—**debt to obligated resources** and **the five-year payout ratio**—each institution has set both a target ratio and a floor or ceiling policy, as applicable. The target and policy ratios are summarized below. See **Appendix C** for more information on the methodology each institution used in setting its target and policy ratios.

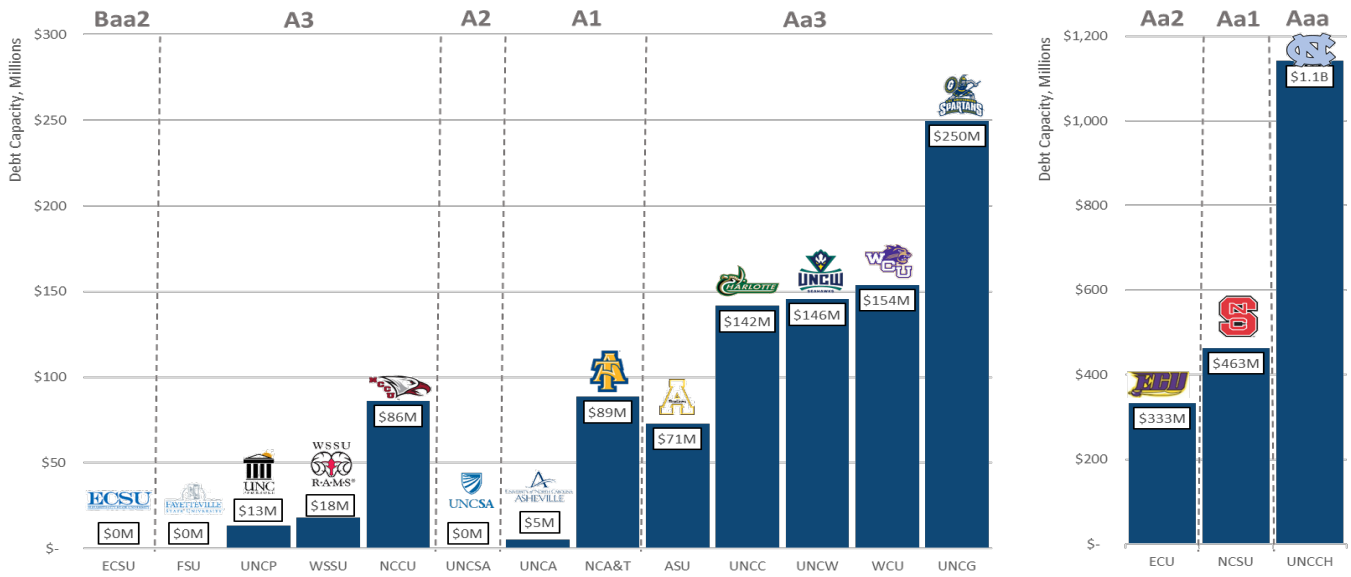


Conclusions

The following table summarizes the **current estimated debt capacity** of each institution as defined for the purposes of the Study. The numbers in the table reflect **the maximum amount of debt each institution could issue in fiscal year 2020** without exceeding its ceiling ratio for **debt to obligated resources** during any year of

the Study Period, after taking into account any Approved Future Projects. The Approved Future Projects for each institution, if any, are detailed in its report included as part of **Appendix D.**

Estimated Debt Capacity Across the System (2020)

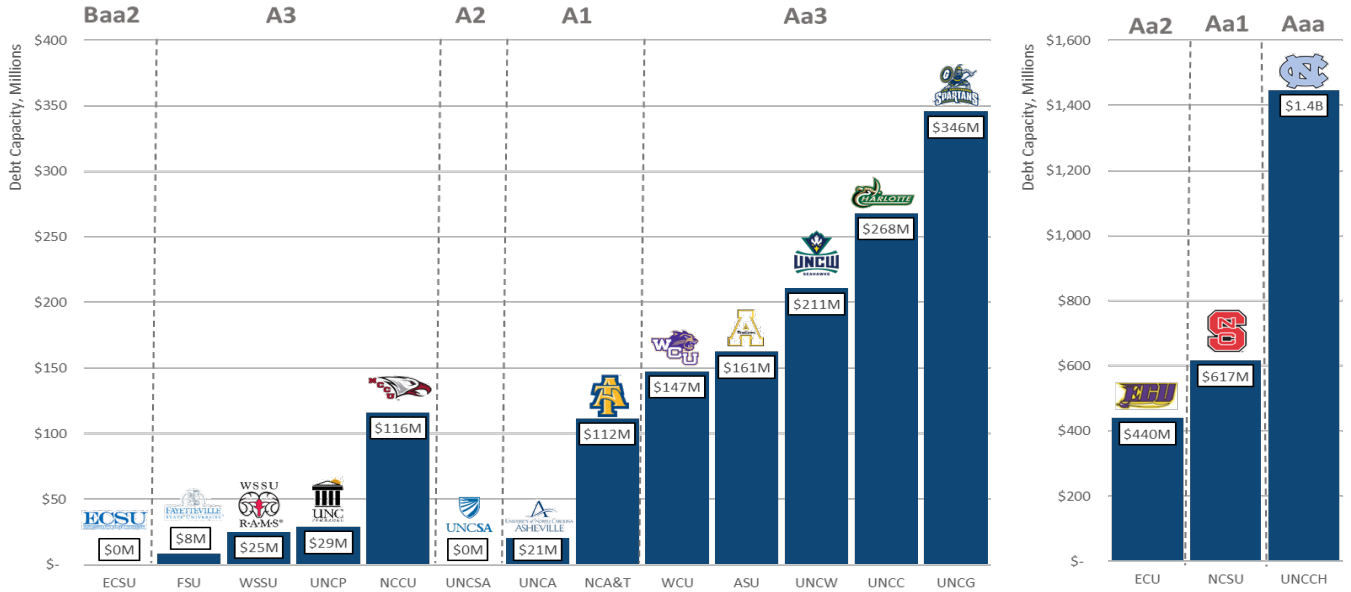


The estimated debt capacity figures for ECU, NC State and UNC-Chapel Hill have been presented in a separate chart using a compressed scale to make the estimated debt capacity figures for the other institutions easier to interpret.

FSU and UNCP are not currently rated by Moody's. FSU and UNCP have been grouped based on their corresponding ratings from either Standard and Poor's or Fitch.

Generally, debt capacity for each institution will grow over the course of the Study Period. The table below summarizes each institution's **projected estimated debt capacity for fiscal year 2024,** assuming it issued no debt (other than debt to finance any Approved Future Projects) until the last year of the Study Period.

Estimated Debt Capacity Across the System (2024)



The estimated debt capacity figures for ECU, NC State and UNC-Chapel Hill have been presented in a separate chart using a compressed scale to make the estimated debt capacity figures for the other institutions easier to interpret.

FSU and UNCP are not currently rated by Moody's. FSU and UNCP have been grouped based on their corresponding ratings from either Standard and Poor's or Fitch.

The credit ratings in the graphs on the previous page represent the Moody's rating or assumed Moody's rating as of June 30, 2019 except for UNC School of the Arts, which received its credit rating from Moody's in January 2020. ECU, N.C. A&T, and FSU received rating changes after the end of the study period. Moody's downgraded ECU to Aa3. Fitch upgraded N.C. A&T to AA-. Standard and Poor's lowered FSU to BBB+.

The range of capacities reflects the diversity among the Institutions, each with its own strengths, challenges and mission. The Study reflects the general health and proactive management of each institution's balance sheet, much of which is attributable to the State's history of strong support for the University and its Institutions. The general growth in capacity over the course of the Study Period indicates relatively rapid amortization rates for most institutions.

The limited debt capacity shown for Elizabeth City State University, UNC Asheville, UNC School of the Arts, and Fayetteville State University reflect recent or future financings that have already been approved by the Board and the General Assembly and are already factored into the debt-related ratios for those institutions. It is anticipated those institutions will have limited additional borrowing needs during the study period.

A small handful of institutions are facing significant headwinds in terms of enrollment and revenue growth, which is reflected in their debt capacity results. For those institutions, improving debt capacity alone may not be a priority; instead, their debt capacity will improve as they continue to work with the UNC System to implement new strategies and policies to meet their unique challenges.

While the Study provides useful insight into the overall fiscal position and capital needs of each institution, policymakers and other stakeholders identify trends and challenges facing each institution and the University over time, the Study also underscores the unique nature of public higher education debt and the value of the UNC System's centralized support and oversight. The Study's emphasis on aggregate debt and asset levels is valuable, but the current approval process, which is predicated on a collaborative, project-by-project analysis of tailored cost estimates and project-specific sources of repayment, should continue to drive decision-making with respect to any proposed project.

Recommendations

Recommended Use of the Study

Since the Study is framed broadly to accommodate the complexity and diversity of each institution's mission, business model, size and infrastructure needs, the Study should be used as a general assessment of each institution's overall fiscal position and to help Institutions, policymakers, and other stakeholders identify trends and challenges facing each institution and the UNC System over time. Like any other management tool, the Study is not intended as a substitute for the considered judgment of institution leadership, the UNC System, the Board, or the General Assembly. An institution may be better served, for example, foregoing a project when it has significant debt capacity or pursuing a financing even if doing so would cause the institution to exceed one of its stated target ratios.

While the Study will help policymakers and stakeholders determine when additional scrutiny for a project may be warranted to ensure Institutions are deploying debt prudently and strategically, institution debt policies and the University's debt approval process--which is predicated on a project-by-project analysis of tailored cost estimates and identified sources of repayment—should continue to drive decision-making with respect to any proposed financing.

The graphic below summarizes how the Study is intended to be integrated into a comprehensive debt management framework that includes each institution's debt policy and the University's debt approval process.

Annual Debt Capacity Study

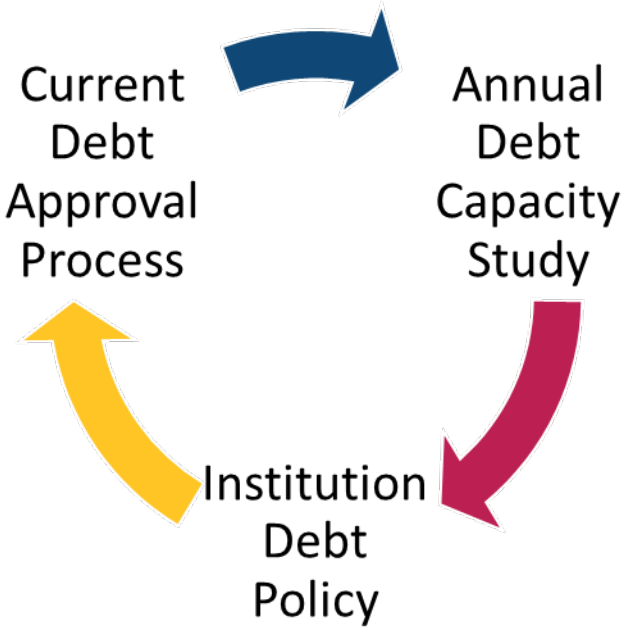
- Provides a snapshot of each institution's current estimated debt capacity
- May indicate when a proposed project requires heightened scrutiny
- Updated annually to reflect newly approved debt and the institution's latest financial results and projects

Institution Debt Policy

- Clarifies each institution's strategic approach to debt and its capital investment needs
- Establishes criteria for evaluating projects and approving debt, including benchmarks to measure prudent debt levels

Current Debt Approval Process

- Evaluates each proposed project's affordability based on identified sources of repayment and projected impact on student cost
- Uses estimated debt capacity results to assess strategic value of proposed projects in light of an institution's overall debt burden, mission, and needs



Debt Consolidation Initiatives

In keeping with the State's constitutional mandate to provide all people of the State with access to the benefits of the University at the lowest practicable cost, the Board and the UNC System are committed to exploring all options that may help the institutions operate in a more cost-effective manner.

As discussed above and in more detail on **Appendix B**, institutions generally meet their financing needs by issuing general revenue bonds through the Board under Article 3 of Chapter 116D of the General Statutes of North Carolina, as amended. Under the current approach, the bonds issued on behalf of each institution are rated and priced based solely on that institution's ability to repay the debt from its own resources. This siloed approach results in a wide range of borrowing costs across the System, with the smallest institutions forced to borrow at interest rates significantly higher than the rates charged to the largest institutions.

To find a more efficient way for institutions to obtain financing and for smaller institutions to access the capital markets, the Board and UNC System continue to explore options to develop and implement a new consolidated borrowing structure that would provide credit support to institutions in the System. Under the proposed structure, a credit facility would be in place to lend to participating institutions, subject to diligence review by the UNC System and receiving approval by Board of Governors. The UNC System Office is evaluating various structures and options to accomplish this goal and the extent to which legislative changes may be required to effectively implement those solutions.

Use and Impact of Project-Based Financing Structures

Project-based financing structures—i.e., debt obligations payable solely or primarily from the financed project's revenues (collectively, "**Project Financings**")—have been used effectively throughout the State for many years. Institutions have structured their Project Financings using both their affiliate support organizations (collectively, "**Foundation Financings**") and unaffiliated, tax-exempt organizations (collectively, "**Privatized Financings**"). Many Project Financings have been structured with the support of master lease arrangements with the institutions (collectively, "**State-Supported Project Financings**"), while others have been structured so that the institutions have no obligation to repay any associated debt (collectively, "**Nonrecourse Project Financings**").

Since project revenues in Nonrecourse Project Financings accrue to the project owner and not the institution, Nonrecourse Project Financings are not payable from the obligated resources of an institution and have therefore been **excluded** from the Study's debt capacity calculations. By contrast, State-Supported Project Financings, which are supported by the institution's obligated resources, **are included** in the Study's debt capacity calculations.

Over the past year, several institutions have entered into (or have obtained approval to enter into) large-scale Project Financings for new, on-campus housing facilities. Each of those transactions has been structured as Nonrecourse Project Financings, so those debt instruments are **not** included in the Study's debt capacity calculations. The rating agencies have made it clear in recent months, however, that they will be more likely to include Nonrecourse Project Financings in their institution leverage metrics for on-campus housing, even if the institution has no legal obligation to repay the debt. Thus, the use of Nonrecourse Project Financing structures may reduce the debt capacity of an institution in the eyes of the rating agencies.

The UNC System Office has developed guidelines for the prudent use of Project Financing structures and will continue to work with the institutions and other stakeholders in State government to ensure Project Financing structures are used strategically and in keeping with the UNC System's mandate to provide access to the benefits of the University at the lowest practicable cost.

Update S&P Credit Ratings Due To COVID-19 Impact

In April 2020, S&P Global issued revised credit rating outlooks in response to the COVID-19 impacts for US higher education. While the entire US education system is under pressure, S&P noted institutions having BBB ratings and lower have the greatest concern. Uncertainties about the timing and duration of social distancing may impact enrollment levels in Fall 2020 and associated tuition revenues. S&P further indicated those institutions hardest hit will be those without adequate reserves, insufficient liquidity, high debt levels, and increased reliance on state appropriation funding.

As of December 31, 2019, 9.2% of S&P's rated institutions (approximately 40 out of 438 private and public institutions) carried negative outlooks. With the current April assessment, 38% (or 166 institutions) have negative outlooks. Recently, credit ratings for Fayetteville State University, UNC Pembroke, and Winston-Salem State University have been revised with negative outlooks due to risks of state funding cuts and risks to associated entities linked to certain debt issuances by these universities.

Appendix A: Key Definitions

Debt: Debt incurred under Chapter 116D of the North Carolina General Statutes or any other debt that will be serviced with funds available to the institutions from gifts, grants, receipts, Medicare reimbursements for education costs, hospital receipts from patient care, or other funds, or any combination of these funds, but not including debt that will be serviced with funds from the General Fund of the State. "Debt" does not include project-based financing structures that are nonrecourse to the institutions.

Obligated Resources: Any sources of income or receipts of the Board of Governors or the institution at which a special obligation bond project is or will be located that are designated by the Board as the security and source of payment for bonds issued under this Article to finance a special obligation bond project, including, without limitation, any of the following:

a. Rents, charges, or fees to be derived by the Board of Governors or the institution from any activities conducted at the institution.

b. Earnings on the investment of the endowment fund of the institution at which a special obligation project will be located, to the extent that the use of the earnings will not violate any lawful condition placed by the donor upon the part of the endowment fund that generates the investment earnings.

c. Funds to be received under a contract or a grant agreement, including "overhead costs reimbursement" under a grant agreement, entered into by the Board of Governors or the institution to the extent the use of the funds is not restricted by the terms of the contract or grant agreement or the use of the funds as provided in this Article does not violate the restriction.

d. Funds appropriated from the General Fund to the Board of Governors on behalf of a constituent institution for utilities of the institution that constitute energy savings as that term is defined in G.S. 143-64.17.

Generally, obligated resources do not include funds appropriated to the Board of Governors or the institution from the General Fund by the General Assembly from funds derived from general tax and other revenues of the State, and obligated resources do not include tuition payment by students.

5-Year Payout Ratio: Percentage of each institution's long-term debt scheduled to be retired during the succeeding five-year period.

Debt Service to Operations: Ratio that measures an institution's debt service burden as a percentage of its total expenses. Ratio uses aggregate operating expenses as opposed to operating revenues because expenses are generally more stable. Operating Expenses also include an adjustment for any noncash charge relating to the implementation of GASB 68 and 75.

Debt Service to Operations = (Annual Debt Service) / (Total Operating Expenses)

Expendable Resources to Debt:

Ratio that measures the number of times an institution's liquid and expendable net assets covers the institution's aggregate funded debt. In calculating the ratio, the institution's Unrestricted Net Assets has been adjusted to add any non-cash charges for the period (such as adjustments required by GASB 68 and 75).

Expendable Resources to Debt = (Adjusted Unrestricted Net Assets + Restricted Expendable Net Assets) / (Debt)

Appendix B: Overview of UNC System Debt

Most debt within the scope of the Study is comprised of special obligation bonds issued by the Board on behalf of each institution in accordance with Article 3 of Chapter 116D of the General Statutes of North Carolina, as amended ("*Article 3*"). Institutions may use special obligation bonds (or "*general revenue bonds*," as they are commonly called) to finance any capital facility located at the campus that supports the institution's mission, but only if the Board has specifically designated the project as a "special obligation bond project" in accordance with Article 3.

Article 3 contains procedural safeguards to ensure the thoughtful use of special obligation bonds. For example, before any general revenue bonds are issued, Article 3 requires the approval of the Institution's Board of Trustees, the Board of Governors, the General Assembly and the Director of the Budget (in consultation, if necessary with the Joint Legislative Commission on Governmental Operations).

As part of its approval, the Board of Governors must (1) designate the proposed project as a "special obligation bond project" and the obligated resources that will serve as the source of repayment for the proposed bonds and (2) establish that sufficient obligated resources are reasonably expected to be available to service the proposed bonds. In its report to the General Assembly seeking approval for a proposed Article 3 project, the Board must provide details regarding the project need, expected project costs, expected increases in operating costs following completion (including any contemplated impact on student costs), estimated debt service and the sources and amounts of obligated resources to be used to repay the debt.

Although Article 3 focuses on an institution's obligated resources in the aggregate, as a practical matter, the plan of finance for each proposed project is evaluated on a standalone basis. **If an institution is unable to demonstrate that existing or future revenues associated with a project are sufficient to service the proposed debt, then the financing will generally not move forward unless the project is redesigned to a sustainable and appropriate scale**. Those project-specific revenues may take the form of enterprise system revenues (such as dormitory or dining system revenues) or other dedicated revenue sources (such as capital campaign donations or student fees). Institution debt issued under other legislative authority, including student housing revenue bonds under Article 19 of Chapter 116D, is also subject to procedural safeguards and are evaluated on a project-by-project basis.

This slight disconnect between the statutory framework for evaluating debt capacity—**with its focus on affordability relative to each institution's aggregate obligated resources**—and the practical manner in which projects are evaluated and approved—**with its focus on an individual project's affordability based on a specific source of repayment**—means that the Study presents an inherently conservative picture of each institution's debt capacity. While the model's inherent conservatism encourages prudent planning, the Study's limitations in evaluating the affordability of any single campus project should be noted.

Unlike the State of North Carolina's debt capacity study, for example, where future debt service is paid out of well-defined and relatively predictable revenue streams, campus projects may be financed through a variety of revenue sources, none of which is easily modeled on a pro forma basis at the aggregate obligated resources level. In addition, the Act establishes a target ratio that compares aggregate debt (which will increase immediately by the full amount of the debt once issued) to obligated resources (which will increase incrementally over time). This means that any new financing will generally reduce the institution's debt capacity as reflected in the Study, even if the new project would be entirely supported by new revenues that would not exist but for the project.

None of the institution debt included in the Study affects the State of North Carolina's debt capacity or credit rating. Such obligations are payable only from the applicable institution's obligated resources (or other pledged revenues) and do not constitute a debt or liability of the State or a pledge of the State's full faith and credit.

Appendix C: Study Methodology and Background

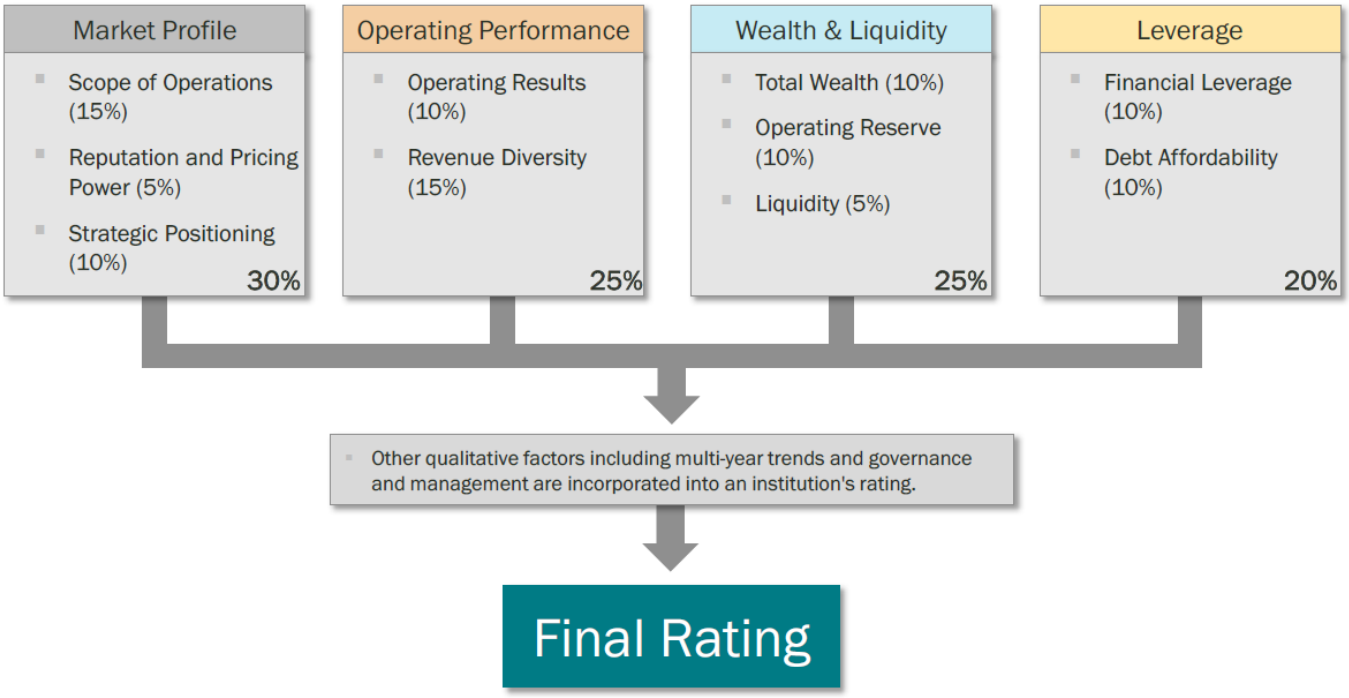
Overview of Strategic Debt Management and Credit Assessment

The prudent use of debt, in service of each institution's mission, provides several strategic benefits:

- **Achieving intergenerational equity** – Most capital projects will benefit students for decades. Financing a portion of each institution's planned capital investments enables each institution to better align the benefits and financial burdens across multiple generations.
- **Enhancing effectiveness** – An institution may use debt to invest in transformative projects on an accelerated schedule, permitting the institution to leverage its resources to better scale its programs, serve its stakeholders and meet its mandated mission.
- **Imposing discipline** – Debt can be used to clarify priorities and reduce other spending that may crowd-out investments necessary for the institution's long-term health.

Burdensome debt levels, however, can undermine an institution's effectiveness and viability. Debt may diminish the future operational flexibility of an institution and may limit its ability to adapt to future developments and trends in the marketplace. In the worst instances, debt levels may hasten the decline of an institution, creating a downward spiral that exerts ever-increasing pressure on its balance sheet.

Each institution's credit rating (for those with rated debt) serves as a general barometer of how the rating agencies view the institution's financial strength and its debt management practices, which, in turn, informs the institution's reputation in the capital markets. In assessing a public university's creditworthiness, rating agencies generally consider three or four broad categories of factors. The table below summarizes the factors that Moody's Investors Service ("***Moody's***") considers as part of its "scorecard," which guides its credit profile analysis in the higher education sector:



*The Study focuses on Moody's methodology, as it rates nearly all of the Institutions.

As part of their criteria, the rating agencies give significant weight to various qualitative factors, such as the strength of the institution's leadership, the quality and responsiveness of its long-range planning and the role of any centralized oversight. In a rating report issued in February of 2016 in connection with an institution bond offering, for example, Moody's noted that the institution "**benefits from being part of the UNC system, which has a demonstrated history of strong oversight of member institutions**" and listed the institution's "**generous operating and capital support from the State of North Carolina**" as a primary credit strength.

For several reasons, the Study has not attempted to tie "debt capacity" to the predicted impact any new debt may have on an institution's credit rating. First, each institution's mission and strategic planning should drive its debt management decisions, not the rating agencies' outside assessment of the institution's credit profile. Managing an institution's operations solely to achieve a certain credit rating may distort strategic objectives and lead to unintended consequences. As Moody's states in its current Rating Methodology for Global Higher Education (dated November 23, 2015):

> "Strategic positioning depends on effective short- and long-range planning, consistent self-assessment and benchmarking, and ongoing monitoring and accountability. … Determining the appropriate level of investment is a significant challenge, as too little investment can result in a gradual loss of student demand, research funding, or philanthropy if donors feel that the university is in decline. Overinvesting can saddle a college with an unsustainable business model, with revenue unable to support high fixed costs, including debt service."

Second, projecting the exact amount of debt an institution could issue during the study period without negatively impacting its credit rating is difficult. Any single financial ratio makes up only a fraction of the overall credit analysis, and weak ratios may be ignored or deemphasized in a particular situation based on multi-year trends, projections and other qualitative factors. Further, while the financial performance of its institutions has no impact on the State's credit rating, each institution's credit rating has historically benefitted from the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category, making comparisons to median ratios challenging. Finally, because median ratios are not perfectly correlated to rating outcomes, a model that attempts to draw a linear relationship between any single ratio and a projected rating outcome would have limited predictive value.

In this context, **it is important to distinguish "debt capacity" from "debt affordability."** Debt capacity provides a general indication of each institution's ability to absorb debt on its balance sheet during the study period. Debt affordability, on the other hand, evaluates the merits of a specific financing (or a specific amount of debt), taking into account a number of quantitative and qualitative factors relating to the projects under consideration, including project revenues and expenses, cost of funds, competing strategic priorities and the "hidden" costs of foregoing the projects entirely.

Development of the Financial Model

To support the Study, a financial model has been developed to analyze four financial ratios for each institution on a pro forma basis over the course of the study period. Since Article 3 does not permit the institutions to pool their obligated resources to form a common source of funds to support all institution project financings, the Study focuses on the individual institution data and does not attempt to aggregate each institution's capacity to derive a University-wide measure of "debt capacity." The other components of the model are designed to assist

each institution in establishing guidelines for maintaining prudent debt levels and for evaluating capital investment priorities in light of fiscal constraints.

Each institution's debt capacity reflects the amount of debt each institution could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**. Each institution has developed its own target policy for each ratio in consultation with the UNC System to ensure the ratio is tailored and meaningful for that institution's size, mission, resources, and average age of plant.

Methodology for Setting Target Ratios

Since there are differences in each institution's mission, enrollment, resources, and capital needs, imposing a single set of target policies across all institutions would distort the information produced by the Study—either by generating too much capacity for the larger institutions or by holding smaller institutions to unrealistic benchmarks relative to their size and scale. To produce a more meaningful model for each institution, the Institutions, in consultation with the UNC System, have set their own target policies for the model ratios.

In setting its target policies, each institution considered many quantitative and qualitative factors, including comparisons to its designated peer institutions, its strategic initiatives, its historical results, its average age of plant, its recent and projected growth and any existing debt policies. As discussed above, the credit ratings of the Institutions are bolstered by several favorable qualitative factors, including, most importantly, the State's long history of support. Since the institutions benefit from those qualitative factors, it follows that many quantitative measures are weaker than the median ratios for their assigned rating category. Institutions were not forced, therefore, to set their target ratios directly in line with those median ratios, as that approach would invite quantitative comparisons to larger, wealthier peers. Institutions used median ratios as an important benchmark in setting their policy ratios.

Other Assumptions and Factors Affecting the Model

The financial model is based on each institution's financial results as of **June 30, 2019**—the most recent period for which audited financials are available. The model includes debt issued to finance new projects since June 30, 2019, but the model excludes any refinancing, redemption or other debt payments that have occurred during the current fiscal year, building an additional element of conservatism into the model.

The financial model also takes into account any legislatively approved project that an institution plans to finance during the study period. Interest rate assumptions for any pro forma debt are based on conservative, fixed rate projections and are adjusted to account for each institution's credit rating and the expected term of the financing.

The financial model adds back to each institution's unrestricted and restricted expendable net assets any noncash charge taken in connection with the implementation of GASB 68 and GASB 75 and will make similar adjustments for the implementation of related accounting policies in the future. While GASB 68 impacts an institution's unrestricted net assets and not restricted expendable net assets, GASB 75 impacts both figures. This is relevant as the calculation of Available Funds incorporates unrestricted net assets but not restricted expendable net assets, while the calculation of Expendable Financial Resources includes both figures. Therefore, the GASB 75 adjustment made to Available Funds and Expendable Financial Resources will not match.

Finally, by default, the financial model assumes that each institution's Available Funds, expendable resources, and operating expenses will grow by an annual rate equal to the Consumer Price Index (1.70% at the time the model was developed). Each institution was given the option, however, to adjust the growth factor for each of the model components based on its reasonable expectations for its performance over the study period. Any

such adjustment, along with the factors considered in making the adjustment, is described in the individual institution reports attached as **Appendix D**.

Appendix D: Reports from Constituent Institutions

May 19, 2020

The University of North Carolina System Debt Capacity Study – Fiscal Year 2019

Appalachian State University

Institution Report

Appalachian State University

Approved by the UNC Board of Governors on May 20, 2020

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1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), Appalachian State University ("*Appalachain*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. Appalachain has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, Appalachain, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—Appalachain has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, Appalachain's debt capacity reflects the amount of debt Appalachain could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that Appalachain intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Instituiton Report also includes the following information required by the Act:

- Appalachain's current debt profile, including project descriptions financed with, and the sources of repayment for, Appalachain's outstanding debt;
- Appalachain's current credit profile, along with recommendations for maintaining or improving Appalachain's credit rating; and
- A copy of any Appalachain debt management policy currently in effect.

Overview of Appalachain

For the fall 2018 semester, Appalachain had a headcount student population of approximately 19,108 including 17,381 undergraduate students and 1,727 graduate and doctoral students. During the 2018 academic year, Appalachain employed approximately 1,175 full-time, part-time and temporary instructional faculty.

Over the past five years, Appalachain's enrollment has increased approximately 6%. Appalachain's average age of plant (14.63 years), which is higher than the median ratio for all institutions (14.53 years). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs.

Appalachain anticipates incurring $2.5M in additional debt during the Study period, as summarized in **Section 3** below. Appalachain has made no changes to the financial model's standard growth assumptions, which are based on the consumer price index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Outstanding debt service is based on Appalachain's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to Appalachain by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt Appalachain expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below overstates Appalachain's current debt burden.

1	2	3	4	5	6
		Obligated Resources			
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	172,255,352	22,273,490	-		194,528,842
2016	186,032,430	16,955,500	-	4.35%	202,987,930
2017	205,017,229	19,229,751	-	10.47%	224,246,980
2018	(247,807,774)	23,248,893	456,629,959	3.49%	232,071,078
2019	(227,971,336)	26,094,254	435,923,401	0.85%	234,046,319
2020	238,025,106	-	-	1.70%	238,025,106
2021	242,071,533	-	-	1.70%	242,071,533
2022	246,186,749	-	-	1.70%	246,186,749
2023	250,371,924	-	-	1.70%	250,371,924
2024	254,628,247	-	-	1.70%	254,628,247

		Operating Expenses			
Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	362,739,731	4,619,801	-		367,359,532
2016	367,993,253	5,331,612	-	1.62%	373,324,865
2017	394,708,091	(2,248,908)	-	5.13%	392,459,183
2018	403,462,561	(4,006,763)	3,288,040	2.62%	402,743,838
2019	417,888,768	(2,827,682)	20,712,838	8.20%	435,773,924
2020	443,182,081	-	-	1.70%	443,182,081
2021	450,716,176	-	-	1.70%	450,716,176
2022	458,378,351	-	-	1.70%	458,378,351
2023	466,170,783	-	-	1.70%	466,170,783
2024	474,095,686	-	-	1.70%	474,095,686

7	8	9	10	11
		Outstanding Debt		
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	13,487,301	10,261,548	23,748,849	284,033,845
2021	15,825,443	10,066,388	25,891,830	268,208,403
2022	15,587,104	9,423,694	25,010,798	252,621,298
2023	16,362,209	8,819,795	25,182,003	236,259,089
2024	16,920,727	8,171,969	25,092,696	219,338,362
2025	15,670,662	7,517,992	23,188,654	203,667,700
2026	16,386,696	6,877,630	23,264,326	187,281,004
2027	15,098,851	6,264,611	21,363,462	172,182,153
2028	14,902,151	5,730,302	20,632,453	157,280,002
2029	11,964,999	5,206,377	17,171,376	145,315,003
2030	12,485,000	4,767,300	17,252,300	132,830,003
2031	13,035,000	4,302,515	17,337,515	119,795,003
2032	11,730,000	3,863,556	15,593,556	108,065,003
2033	10,729,999	3,508,314	14,238,313	97,335,004
2034	11,160,000	3,183,295	14,343,295	86,175,004
2035	9,525,000	2,873,758	12,398,758	76,650,004
2036	8,970,002	2,573,896	11,543,898	67,680,002
2037	8,340,002	2,295,496	10,635,498	59,340,000
2038	4,835,000	2,100,781	6,935,781	54,505,000
2039	5,090,000	1,957,725	7,047,725	49,415,000
2040	5,355,000	1,804,881	7,159,881	44,060,000
2041	5,060,000	1,640,319	6,700,319	39,000,000
2042	4,270,000	1,478,941	5,748,941	34,730,000
2043	4,565,000	1,305,481	5,870,481	30,165,000
2044	4,875,000	1,119,188	5,994,188	25,290,000
2045	5,210,000	919,328	6,129,328	20,080,000
2046	5,535,000	727,822	6,262,822	14,545,000
2047	5,880,000	519,025	6,399,025	8,665,000
2048	4,200,000	329,200	4,529,200	4,465,000
2049	4,465,000	160,500	4,625,500	-

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Unrestricted Net Position plus Foundation Temporarily Restricted Net Position minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projection period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	39,511,169	9,463,239	25,279,071	54,999,821	7,040,187		22,273,490	144,486,603
2016	51,645,922	10,542,418	27,253,336	49,717,522	2,970,575	5.99%	16,955,500	153,144,123
2017	52,779,465	13,688,945	29,425,315	54,589,623	3,676,733	8.42%	19,229,751	166,036,366
2018	(398,051,847)	19,916,307	31,519,826	69,117,568	7,423,476	17.42%	479,878,852	194,957,230
2019	(377,001,181)	25,082,685	34,172,348	67,754,453	11,792,293	2.71%	462,017,655	200,233,667
2020	86,461,754	25,509,091	34,753,278	68,906,278	11,992,762	1.70%	-	203,637,639
2021	87,931,604	25,942,745	35,344,084	70,077,685	12,196,639	1.70%	-	207,099,479
2022	89,426,441	26,383,772	35,944,933	71,269,006	12,403,982	1.70%	-	210,620,170
2023	90,946,691	26,832,296	36,555,997	72,480,579	12,614,849	1.70%	-	214,200,713
2024	92,492,784	27,288,445	37,177,449	73,712,749	12,829,302	1.70%	-	217,842,125

3. Proposed Debt Financings

The table below summarizes any legislatively approved projects that Appalachain expects to finance during the Study Period. Using the assumptions outlined in the table below, the model has developed a tailored, but conservative, debt service schedule for each proposed financing and incorporated each pro forma debt service schedule into its calculations of the financial ratios as detailed in **Section 4** on the following page.

Appalachain Proposed Debt Financings

Year	Use of Funds	Borrowing Amount	Term	Source of Repayment
2020	Field Turf Project	2,552,000	10	Millenial Campus Revenue
Total		2,552,000		

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** Appalachain's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

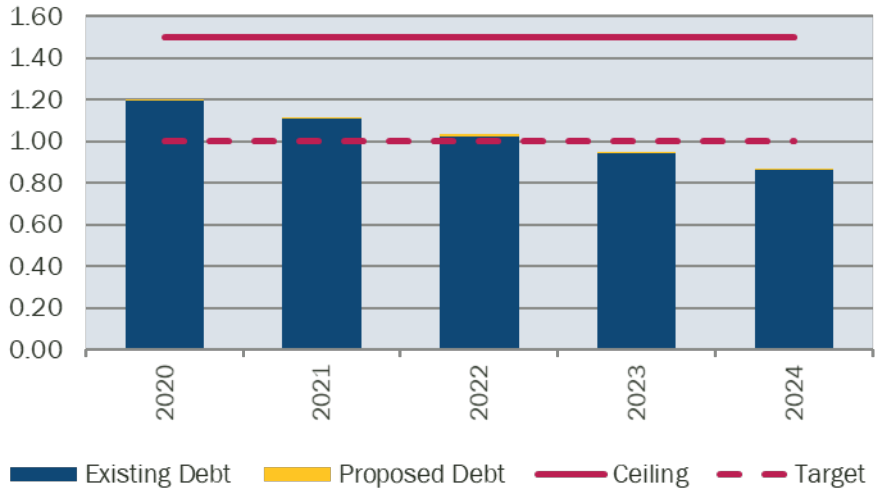
- Target Ratio: 1.00
- Ceiling Ratio: Not to exceed 1.50
- Projected 2020 Ratio: 1.20
- Highest Study Period Ratio: 1.20 (2020)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	238,025,106	1.70%	284,033,845	2,319,148	1.19	0.01	1.20
2021	242,071,533	1.70%	268,208,403	2,081,592	1.11	0.01	1.12
2022	246,186,749	1.70%	252,621,298	1,839,237	1.03	0.01	1.03
2023	250,371,924	1.70%	236,259,089	1,591,987	0.94	0.01	0.95
2024	254,628,247	1.70%	219,338,362	1,339,743	0.86	0.01	0.87

Debt to Obligated Resources



5-Year Payout Ratio Overview

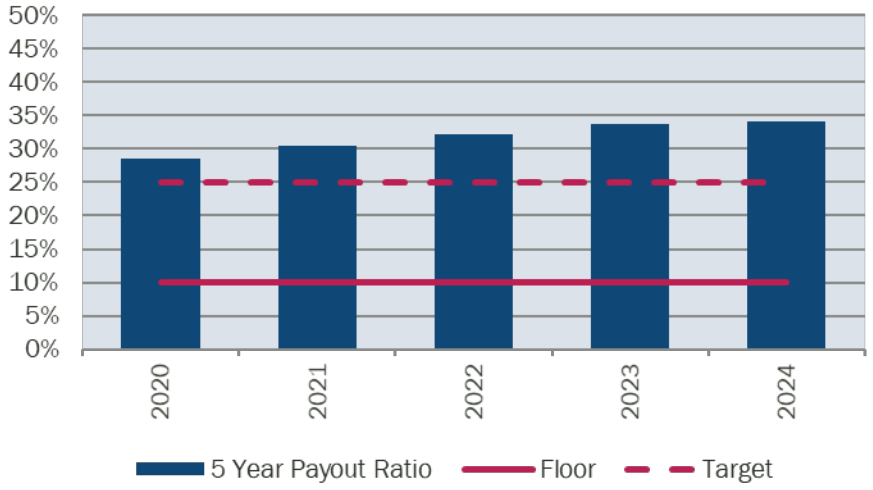
- **What does it measure?** The percentage of Appalachain's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

- Target Ratio: 25%
- Floor Ratio: Not less than 10%
- Projected 2020 Ratio: 28%
- Lowest Study Period Ratio: 28% (2020)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	286,352,993	28%
2021	270,289,994	30%
2022	254,460,536	32%
2023	237,851,077	34%
2024	220,678,105	34%

5-Year Payout Ratio



Expendable Resources to Debt

- **What does it measure?** The number of times Appalachain's liquid and expendable net position covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

- Floor Ratio: Not less than 0.70x
- Projected 2020 Ratio: 0.71x
- Lowest Study Period Ratio: 0.71x (2020)

Expendable Resources to Debt

1	2	3	4	5	6	7
			Expendable Resources to Debt			
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	203,637,639	1.70%	284,033,845	2,319,148	0.72	0.71
2021	207,099,479	1.70%	268,208,403	2,081,592	0.77	0.77
2022	210,620,170	1.70%	252,621,298	1,839,237	0.83	0.83
2023	214,200,713	1.70%	236,259,089	1,591,987	0.91	0.90
2024	217,842,125	1.70%	219,338,362	1,339,743	0.99	0.99

Expendable Resources to Debt

Debt Service to Operating Expenses

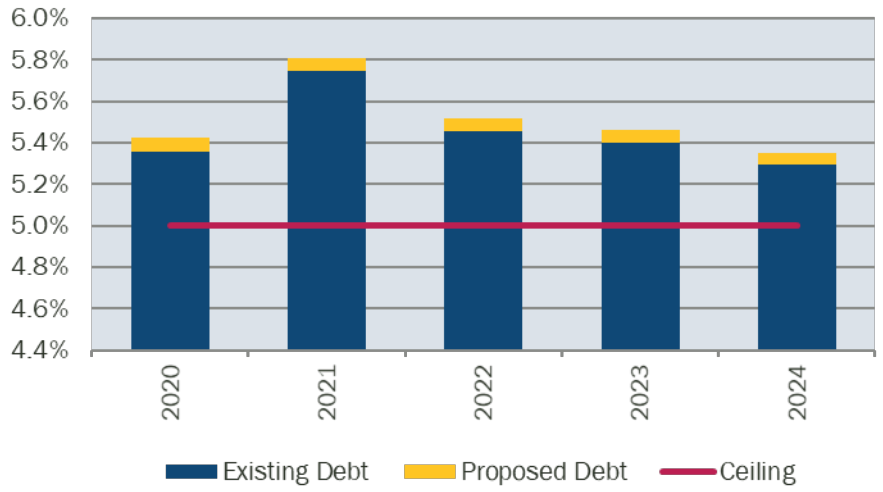
- **What does it measure?** Appalachain's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

- Policy Ratio: Not to exceed 5.00%
- Projected 2020 Ratio: 5.42%
- Highest Study Period Ratio: 5.81% (2021)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	443,233,631	1.70%	23,748,849	284,403	5.36%	0.06%	5.42%
2021	450,763,023	1.70%	25,891,830	284,403	5.74%	0.06%	5.81%
2022	458,420,399	1.70%	25,010,798	284,403	5.46%	0.06%	5.52%
2023	466,207,936	1.70%	25,182,003	284,403	5.40%	0.06%	5.46%
2024	474,127,844	1.70%	25,092,696	284,403	5.29%	0.06%	5.35%

Debt Service to Operating Expenses



5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, Appalachain's debt capacity is based on the amount of debt Appalachain could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, **the lowest constraint on Appalachain's debt capacity** in any single year during the Study Period occurs in 2019.
- Based solely on the **debt to obligated resources** ratio, Appalachain's current estimated debt capacity is **$70,684,667.** After taking into account any legislatively approved projects detailed in **Section 3** above, if Appalachain issued no additional debt until the last year of the Study Period, then Appalachain's debt capacity for 2024 is projected to increase to **$161,264,265.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	1.20	1.50	70,684,667
2021	1.12	1.50	92,817,305
2022	1.03	1.50	114,819,588
2023	0.95	1.50	137,706,809
2024	0.87	1.50	161,264,265

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of Appalachain's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" does not necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- **If Appalachain were to use all of its calculated debt capacity during the Study Period, Appalachain's credit ratings may face significant downward pressure**.
- The debt capacity calculation shown above provides a general indication of Appalachain's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" does not necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities..
- Projecting the exact amount Appalachain could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **Use of Multiple Factors**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.

- Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.

- **The State's Impact**
  - Historically, each Institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
  - If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.
- **Factor Interdependence**
  - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
  - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its institution to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
  - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
  - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.
  - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

Appalachain's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 2009B	UNC System Pool Revenue Bonds	505,000	10/1/2019	Frank Residence Hall Renovation		Housing Revenues
				Athletic Facilities		Athletic Revenues
Series 2010B-1	UNC System Pool Revenue Bonds	2,955,000	10/1/2025	Cone Residence Hall Renovation		Housing Revenues
				Athletic Facilities		Athletic Revenues
				Athletic Facilities		Debt Service Fee
				Bookstore	2001	Bookstore Revenues
Series 2011	General Revenue Bonds	5,760,000	10/1/2021	Addition to Student Union		Debt Service Fee
				Honors Residence Hall		Housing Revenues
				Student Leadership Annex		Debt Service Fee
				Steam Utility System		Steam Utility Revenues
Series 2011	ASU Utility System Revenue Bonds	675,000	12/20/2021	Electric Utility Infrastructure		Electric Utility Revenues
Series 2012	General Revenue Refunding Bonds	19,455,000	5/1/2028	Housing	2002	Housing Revenues
				Housing	2005	Housing Revenues
				Student Recreation Center	2003A	Debt Service Fee
				Athletic Facilities	2005	Athletic Revenues
Series 2014A	General Revenue Refunding Bonds	19,330,000	7/15/2039	Belk Residence Hall Renovation		Housing Revenues
				Anne Belk Hall Renovation (Academic)		Debt Service Fee
				Athletic Facilities		Athletic Revenues
				Residence Halls	2005	Housing Revenues
				Athletic Facilities	2005	Athletic Revenues
				Athletic Facilities		Debt Service Fee
				Parking	2005	Parking Revenues
Series 2014B	Taxable General Revenue Refunding Bonds	10,230,000	7/15/2025	Residence Halls	2005	Housing Revenues
				Athletic Facilities	2005	Athletic Revenues
				Athletic Facilities		Debt Service Fee
				Parking	2005	Parking Revenues
Series 2014C	General Revenue Refunding Bonds	18,765,000	10/1/2031	Housing	2006A	Housing Revenues
				Dining	2006A	Debt Service Fee

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Series 2016A	General Revenue Refunding Bonds	23,965,000	10/1/2033	Steam Utility System	2008A	Steam Utility Revenues
				Cannon Residence Hall Renovation	2008A	Housing Revenues
				Parking Improvements	2008A	Parking Revenues
				Athletic Facilities	2008A	Athletic Revenues
				Athletic Facilities		Debt Service Fee
Series 2016	ASU Utility System Revenue Bonds	2,555,000	5/5/2026	Electric Utility Infrastructure		Electric Utility Revenues
Series 2016B	General Revenue Refunding Bonds	5,260,000	10/1/2026	Doughton Residence Hall Renovation	2006A	Housing Revenues
				New Dining Hall	2006A	Dining Revenues
				Hoey Residence Hall Renovation	2006A	Housing Revenues
				Student Recreation Center	2006A	Debt Service Fee
				Broyhill Inn	2006A	Debt Service Fee
Series 2016C	General Revenue Bonds	25,845,000	10/1/2046	Winkler Hall		Housing Revenues
Series 2016D	General Revenue Refunding Bonds	10,895,000	10/1/2034	Frank Residence Hall Renovation	2009B	Housing Revenues
				Athletic Facilities	2009B	Athletic Revenues
Series 2017A	General Revenue Refunding Bonds	56,390,000	10/1/2036	Cone Residence Hall Renovation	2010B-1	Housing Revenues
				Athletic Facilities	2010B-1	Athletic Revenues
				Athletic Facilities	2010B-1	Debt Service Fee
				Bookstore	2010B-1	Bookstore Revenues
				Addition to Student Union	2011	Debt Service Fee
				Honors Residence Hall	2011	Housing Revenues
				Student Leadership Annex	2011	Debt Service Fee
				Steam Utility System	2011	Steam Utility Revenues
Series 2018A	General Revenue Refunding Bonds	9,270,000	10/1/2023	Steam Utility System	2008A	Steam Utility Revenues
Series 2018	Millienial Campus Revenue Bonds	39,865,000	5/1/2049	Athletic and Dining Facilities		Athletic and Auxiliary Services Revenues
Series 2019	General Revenue Bonds	16,640,000	10/1/2048	Sanford Hall Renovation (Academic)		Debt Service Fee
Total		268,360,000				

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7. Credit Profile

The following page provides a snapshot of Appalachain's current credit ratings, along with (1) a summary of various credit factors identified in Appalachain's most recent rating report and (2) recommendations for maintaining and improving Appalachain's credit ratings in the future.

Appalachian STATE UNIVERSITY

Credit Profile of the University – (General Revenue)

Overview

- Moody's maintains a Aa3 rating on Appalachian's general revenue bonds. The outlook is negative.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-

Non Investment Grade

Key Information Noted in Reports

Credit Strengths

- Healthy support for operations and capital projects from the Aaa-rated State of North Carolina
- Well-established market presence as a moderate-sized public university with increasing demand
- Predictable operating performance reflects the sound financial oversight and close alignment of revenue and expense growth

Credit Challenges

- Narrow liquidity relative to operating expenses is well below the Aa3 median
- Limited prospects to increase financial reserves given investments in capital and program growth
- Growth in spendable cash and investments unlikely to keep pace with peers or additional debt-financed capital plans
- Slow growth in financial reserves relative to debt and expenses

Recommendations & Observations

- Pursue strategies, working within the existing statutory framework relating to reversions, to increase liquidity through growth in cash reserves.

Approved by the UNC Board of Governors on May 20, 2020

8. Peer Comparison

Moody's Key Credit Ratios	Appalachian State University	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2019	Rowan University	College of Charleston	Bowling Green State	University of Northern Iowa	
Most Senior Rating	Aa3	A2	A1	A1	A1	Aa3
Total Debt ($, in millions)	303	661	196	284	113	437
Total Cash & Investments ($, in millions)	270	420	276	416	299	735
Operating Revenue ($, in millions)	422	550	269	360	278	691
Operating Expenses ($, in millions)	421	535	260	373	272	641
Market Performance Ratios						
Annual Change in Operating Revenue (%)	6.0%	2.9%	3.5%	-0.7%	2.0%	2.7%
Operating Ratios						
Operating Cash Flow Margin (%)	7.6%	17.9%	12.4%	9.1%	10.2%	12.1%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	0.6	0.8	1.1	1.1	1.1	1.0
Total Debt to Operating Expenses (x)	0.7	1.2	0.8	0.8	0.4	0.5
Monthly Days Cash on Hand (x)	85	184	103	224	171	156
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	0.9	0.6	1.4	1.5	2.6	1.6
Debt Service to Operating Expenses (%)	4.2%	9.5%	5.9%	4.6%	5.5%	4.5%
Total Debt-to-Cash Flow (x)	9.4	6.7	5.9	8.7	4.0	4.6

9. Debt Management Policies

Appalachain's current debt policy is included in the following pages.

Debt Management Policy

Appalachian State University

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Introduction

Appalachian State University ("ASU") views its debt capacity as a limited resource that should be used, when appropriate, to help fund the capital investments necessary for the successful implementation of ASU's strategic vision to prepare its students to lead purposeful lives as engaged global citizens who understand their responsibilities in creating a sustainable future for all. ASU recognizes the important role that debt-related strategies may play as it makes the necessary investments in its infrastructure in order to become and remain the destination institution for dedicated students seeking challenging academic programs, engaged faculty and a vibrant campus culture.

This Policy has been developed to assist ASU's efforts to manage its debt on a long-term, portfolio basis and in a manner consistent with ASU's stated policies, objectives and core values. Like other limited resources, ASU's debt capacity should be used and allocated strategically and equitably.

Specifically, the objective of this Policy is to provide a framework that will enable ASU's Board of Trustees (the "Board") and finance staff to:

(i) Identify and prioritize projects eligible for debt financing;

(ii) Limit and manage risk within ASU's debt portfolio;

(iii) Establish debt management guidelines and quantitative parameters for evaluating ASU's financial health, debt affordability and debt capacity;

(iv) Manage and protect ASU's credit profile in order to maintain ASU's credit rating at a strategically optimized level and maintain access to the capital markets; and

(v) Ensure ASU remains in compliance with all of its post-issuance obligations and requirements.

This Policy is intended solely for ASU's internal planning purposes. The Vice Chancellor for Business Affairs will review this Policy annually and, if necessary, recommend changes to ensure that it remains consistent with University's strategic objectives and the evolving demands and accepted practices of the public higher education marketplace. Proposed changes to this Policy are subject to the Board's approval.

2. Authorization and Oversight

ASU's Vice Chancellor for Business Affairs is responsible for the day-to-day management of ASU's financial affairs in accordance with the terms of this Policy and for all of ASU's debt financing activities. Each University financing will conform to all applicable State and Federal laws.

The Board will consider for approval each proposed financing in accordance with the requirements of any applicable State law.

3. Process for Identifying and Prioritizing Capital Projects Requiring Debt

Only projects that directly or indirectly relate to the mission of ASU will be considered for debt financing.

(i) Self-Liquidating Projects – A project that has a related revenue stream (self-liquidating project) will receive priority consideration. Each self-liquidating project financing must be supported by an achievable plan of finance that provides, or identifies sources of funds, sufficient to (1) service the debt associated with the project, (2) pay for any related infrastructure improvements, (3) cover any new or increased operating costs and (4) fund appropriate reserves for anticipated replacement and renovation costs.

(ii) Energy Conservation Projects – Each energy conservation project financing must provide annual savings sufficient to service the applicable debt and all related monitoring costs.

(iii) Other Projects – Other projects funded through budgetary savings, gifts and grants will be considered on a case-by-case basis. Any projects that will require gift financing or include a gift financing component must be jointly approved by the Vice Chancellor for University Advancement and the Vice Chancellor for Business Affairs before any project-restricted donations are solicited. The fundraising goal for any project to be financed primarily with donations should also include, when feasible, an appropriately-sized endowment for deferred maintenance and other ancillary ownership costs. In all cases, institutional strategy, and not donor capacity, must drive the decision to pursue any proposed project.

4. Benchmarks and Debt Ratios

Overview

When evaluating its current financial health and any proposed plan of finance, ASU takes into account both its debt affordability and its debt capacity. Debt affordability focuses on ASU's cash flows and measures ASU's ability to service its debt through its operating budget and identified revenue streams. Debt capacity, on the other hand, focuses on the relationship between ASU's net assets and its total debt outstanding.

Debt capacity and affordability are impacted by a number of factors, including ASU's enrollment trends, reserve levels, operating performance, ability to generate additional revenues to support debt service, competing capital improvement or programmatic needs, and general market conditions. Because of the number of potential variables, ASU's debt capacity cannot be calculated based on any single ratio or even a small handful of ratios.

ASU believes, however, that it is important to consider and monitor objective metrics when evaluating ASU's financial health and its ability to incur additional debt. To that end, ASU has identified three key financial ratios that it will use to assess its ability to absorb additional debt based on its current and projected financial condition:

(i) Debt to Obligated Resources

(ii) Expendable Resources to Debt

(iii) Debt Service to Operating Expenses

Note that the selected financial ratios are also monitored as part of the debt capacity study for The University of North Carolina delivered each year under Article 5 of Chapter 116D of the North Carolina General Statutes (the "UNC Debt Capacity Study"), which ASU believes will promote clarity and consistency in ASU's debt management and planning efforts.

ASU has established for each ratio a floor or ceiling target, as the case may be, with the expectation that ASU will operate within the parameters of those ratios most of the time. To the extent possible, the policy ratios established from time to time in this Policy should align with the ratios used in the report ASU submits each

year as part of the UNC Debt Capacity Study. The policy ratios have been established to help preserve ASU's financial health and operating flexibility and to ensure ASU is able to access the market to address capital needs or to take advantage of potential refinancing opportunities. Attaining or maintaining a specific credit rating is not an objective of this Policy.

ASU recognizes that the policy ratios, while helpful, have limitations and should not be viewed in isolation of ASU's strategic plan or other planning tools. In accordance with the recommendations set forth in the initial UNC Debt Capacity Study delivered April 1, 2016, ASU has developed as part of this Policy specific criteria for evaluating and, if warranted, approving critical infrastructure projects even when ASU has limited debt capacity as calculated by the UNC Debt Capacity Study or the benchmark ratios in this Policy. In such instances, the Board may approve the issuance of debt with respect to a proposed project based on one or more of the following findings:

(i) The proposed project would generate additional revenues (including, if applicable, dedicated student fees or grants) sufficient to support the financing, which revenues are not currently captured in the benchmark ratios.

(ii) The proposed project would be financed entirely with private donations based on pledges already in hand.

(iii) The proposed project is essential to the implementation of one of the Board's strategic priorities.

(iv) The proposed project addresses life and safety issues or addresses other critical infrastructure needs.

(v) Foregoing or delaying the proposed project would result in significant additional costs to ASU or would negatively impact ASU's credit rating.

At no point, however, should ASU intentionally operate outside an established policy ratio without conscious and explicit planning.

Ratio 1 – Debt to Obligated Resources

What does it measure? ASU's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt under the General Revenue Bond Statutes

Why is it tracked? The ratio, which is based on the legal structure proscribed by the General Revenue Bond Statutes, provides a general indication of ASU's ability to absorb debt on its balance sheet and is the primary ratio used to calculate ASU's "debt capacity" under the methodology used in the UNC Debt Capacity Study

How is it calculated? Aggregate debt divided by obligated resources*

Policy Ratio: Not to exceed 1.50x (UNC Debt Capacity Study Target Ratio = 1.00x)

*Available Funds, which is the concept commonly used to capture each UNC's campus's obligated resources in its loan and bond documentation, has been used as a proxy for obligated resources. The two concepts are generally identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of ASU's obligated resources.

Ratio 2 – Expendable Resources to Debt

What does it measure? The number of times ASU's liquid and expendable net assets covers its aggregate debt

Why is it tracked? The ratio, which is widely tracked by rating agencies and other capital market participants, is a basic measure of financial health and assesses ASU's ability to settle its debt obligations using only its available net assets as of a particular date

How is it calculated? The sum of (1) Adjusted Unrestricted Net Assets and (2) Restricted Expendable Net Assets divided by aggregate debt

Policy Ratio: Not less than 0.70x

Ratio 3 – Debt Service to Operating Expenses

What does it measure? ASU's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues

Why is it tracked? The ratio, which is widely tracked by rating agencies and other capital market participants, evaluates ASU's relative cost of borrowing to its overall expenditures and provides a measure of ASU's budgetary flexibility

How is it calculated? Annual debt service divided by annual operating expenses

Policy Ratio: Not to exceed 5.00%

Reporting

The Vice Chancellor for Business Affairs will review each ratio in connection with the delivery of the University's audited financials and will provide an annual report to the Board substantially in the form of **Appendix A** detailing (1) the calculation of each ratio for that fiscal year and (2) an explanation for any ratio that falls outside the University's stated policy ratio, along with (a) any applicable recommendations, strategies and an expected timeframe for aligning such ratio with the University's stated policy or (b) the rationale for any recommended changes to any such stated policy ratio going forward (including any revisions necessitated by changes in accounting standards or rating agency methodologies).

5. Debt Portfolio Management and Transaction Structure Considerations

Generally

Numerous types of financing structures and funding sources are available, each with specific benefits, risks, and costs. Potential funding sources and structures will be reviewed and considered by the Vice Chancellor for Business Affairs within the context of this Policy and the overall portfolio to ensure that any financial product or structure is consistent with ASU's stated objectives. As part of effective debt management, ASU must also consider its investment and cash management strategies, which influence the desired structure of the debt portfolio.

Method of Sale

ASU will consider various methods of sale on a transaction-by-transaction basis to determine which method of sale (i.e., competitive, negotiated or private placement) best serves ASU's strategic plan and financing objectives. In making that determination, ASU will consider, among other factors: (1) the size and complexity of the issue, (2) the current interest rate environment and other market factors (such as bank and investor appetite) that might affect ASU's cost of funds, and (3) possible risks associated with each method of sale (e.g., rollover risk associated with a financing that is privately placed with a bank for a committed term that is less than the term of the financing).

Tax Treatment

When feasible and appropriate for the particular project, the use of tax-exempt debt is generally preferable to taxable debt. Issuing taxable debt may reduce ASU's overall debt affordability due to higher rates but may be appropriate for projects that do not qualify for tax-exemption, or that may require interim funding. For example, taxable debt may be justified if it sufficiently mitigates ASU's ongoing administrative and compliance risks. When used, taxable debt should be structured to provide maximum repayment flexibility and rapid principal amortization.

Structure and Maturity

To the extent practicable, ASU should structure its debt to provide for level annual payments of debt service, though ASU may elect alternative structures when the Vice Chancellor for Business Affairs determines it to be in ASU's best interest. In addition, when financing projects that are expected to be self-supporting (such as a revenue-producing facility or a facility to be funded entirely through a dedicated fundraising campaign), the debt service may be structured to match future anticipated receipts.

ASU will use maturity structures that correspond with the life of the facilities financed, not to exceed 30 years. Equipment should be financed for a period not to exceed 120% of its useful life. Such determinations may be made on a blended basis, taking into account all assets financed as part of a single debt offering. As market dynamics change, maturity structures should be reevaluated. Call features should be structured to provide the highest degree of flexibility relative to cost.

Variable Rate Debt

ASU recognizes that a degree of exposure to variable interest rates within ASU's debt portfolio may be desirable in order to (1) take advantage of repayment or restructuring flexibility, (2) benefit from historically lower average interest costs and (3) provide a "match" between debt service requirements and the projected cash flows from ASU's assets. ASU's debt portfolio should be managed to ensure that no more than 20% of ASU's total debt bears interest at an unhedged variable rate.

ASU's finance staff will monitor overall interest rate exposure and will analyze and quantify potential risks, including interest rate, liquidity and rollover risks. ASU may manage the liquidity risk of variable rate debt either through its own working capital/investment portfolio, the type of instrument used, or by using third party sources of liquidity. ASU may manage interest rate risk in its portfolio through specific budget and central bank management strategies or through the use of derivative instruments.

Public Private Partnerships

To address ASU's anticipated capital needs as efficiently and prudently as possible, ASU may choose to explore and consider opportunities for alternative and non-traditional transaction structures (collectively, "P3 Arrangements"). Because rating agencies will generally treat a P3 Arrangement as University debt if the project is located on ASU's campus or if the facility is to be used for an essential University function, the

structure and terms of any P3 Arrangement for a university-related facility to be located on land owned by the State, ASU or a ASU affiliate must be reviewed in advance by the Vice Chancellor for Business Affairs.

P3 Arrangements may be pursued in accordance with applicable State law when (1) the Chancellor has determined that the P3 Arrangement serves a compelling strategic interest and (2) the Vice Chancellor for Business Affairs, in consultation with ASU's advisors, has determined that ASU has sufficient debt capacity to undertake its obligations under the P3 Arrangement after taking into account the P3 Arrangement's likely impact on ASU's debt-related metrics and credit profile.

Refunding Considerations

ASU will actively monitor its outstanding debt portfolio for refunding or restructuring opportunities. Absent a compelling economic or strategic reason to the contrary, ASU should evaluate opportunities to issue bonds for the purpose of refunding existing debt obligations of ASU ("Refunding Bonds") using the following general guidelines:

(i) The life of the Refunding Bonds should not exceed the remaining life of the bonds being refunded.

(ii) Refunding Bonds issued to achieve debt service savings should have a target savings level measured on a present net value basis of at least 3% of the par amount refunded.

(iii) Refunding Bonds that do not achieve debt service savings may be issued to restructure debt or provisions of bond documents if such refunding serves a compelling interest.

(iv) Refunding Bonds may also be issued to relieve ASU of certain limitations, covenants, payment obligations or reserve requirements that reduce operational flexibility.

6. Derivative Products

ASU recognizes that derivative products may provide for more flexible management of the debt portfolio. In certain circumstances, interest rate swaps and other derivatives permit ASU to adjust its mix of fixed- and variable-rate debt and manage its interest rate exposures. Derivatives may also be an effective way to manage liquidity risks. ASU will use derivatives only to manage and mitigate risk; ASU will not use derivatives to create leverage or engage in speculative transactions.

As with underlying debt, ASU's finance staff will evaluate any derivative product comprehensively, taking into account its potential costs, benefits and risks, including, without limitation, any tax risk, interest rate risk, liquidity risk, credit risk, basis risk, rollover risk, termination risk, counterparty risk, and amortization risk. Before entering into any derivative product, the Vice Chancellor for Business Affairs must (1) conclude, based on the advice of a reputable swap advisor, that the terms of any swap transaction are fair and reasonable under current market conditions and (2) ensure that ASU's finance staff has a clear understanding of the proposed transaction's costs, cash flow impact and reporting treatment.

ASU will use derivatives only when the Vice Chancellor for Business Affairs determines, based on the foregoing analysis, that the instrument provides the most effective method for accomplishing ASU's strategic objectives without imposing inappropriate risks on ASU.

May 19, 2020

The University of North Carolina System
Debt Capacity Study – Fiscal Year 2019

East Carolina University
Institution Report

East Carolina University

Approved by the UNC Board of Governors on May 20, 2020

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1. Executive Summary

Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), East Carolina University ("*ECU*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. ECU has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, ECU, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—ECU has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, ECU's debt capacity reflects the amount of debt ECU could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that ECU intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- ECU's current debt profile, including project descriptions financed with, and the sources of repayment for, ECU's outstanding debt;
- ECU's current credit profile, along with recommendations for maintaining or improving ECU's credit rating; and
- A copy of any ECU debt management policy currently in effect.

Overview of ECU

For the fall 2018 semester, ECU had a headcount student population of 28,718, including 23,071 undergraduate students and 5,647 graduate and doctoral students. During the 2018-19 academic year, ECU employed 1,849 full-time, part-time and temporary instructional faculty.

Over the past five years, ECU's enrollment has increased approximately 4%. ECU's average age of plant (12.69), which is lower than the median ratio for all institutions (14.53). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs.

ECU anticipates incurring no additional debt during the Study period, as summarized in **Section 3** below. ECU has made no changes to the financial model's standard growth assumptions, which are based on the consumer price index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Outstanding debt service is based on ECU's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to ECU by the federal government (discounted by an assumed 5.9% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt ECU expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below may overstate ECU's current debt burden.

1	2	3	4	5	6
Obligated Resources					
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	436,214,840	54,009,405	-		490,224,245
2016	446,816,116	41,698,354	-	-0.35%	488,514,470
2017	536,354,777	45,890,059	-	19.19%	582,244,836
2018	(552,661,813)	54,243,494	1,101,751,866	3.62%	603,333,547
2019	(554,898,565)	61,244,665	1,052,064,598	-7.45%	558,410,698
2020	567,903,680	-	-	1.70%	567,903,680
2021	577,558,042	-	-	1.70%	577,558,042
2022	587,376,529	-	-	1.70%	587,376,529
2023	597,361,930	-	-	1.70%	597,361,930
2024	607,517,083	-	-	1.70%	607,517,083

Operating Expenses					
Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	817,708,689	9,809,962	-		827,518,651
2016	825,342,729	12,329,211	-	1.23%	837,671,940
2017	883,542,900	(4,164,008)	-	4.98%	879,378,892
2018	908,643,029	(8,352,415)	11,868,636	3.73%	912,159,250
2019	909,413,839	(7,001,171)	50,259,886	4.44%	952,672,554
2020	968,867,987	-	-	1.70%	968,867,987
2021	985,338,743	-	-	1.70%	985,338,743
2022	1,002,089,502	-	-	1.70%	1,002,089,502
2023	1,019,125,023	-	-	1.70%	1,019,125,023
2024	1,036,450,149	-	-	1.70%	1,036,450,149

7	8	9	10	11
Outstanding Debt				
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	15,318,862	13,704,045	29,022,907	377,015,000
2021	14,270,000	14,054,291	28,324,291	362,745,000
2022	14,650,000	13,414,547	28,064,547	348,095,000
2023	14,225,000	12,863,403	27,088,403	333,870,000
2024	14,795,000	12,275,095	27,070,095	319,075,000
2025	14,285,000	11,649,870	25,934,870	304,790,000
2026	14,985,000	11,019,627	26,004,627	289,805,000
2027	14,400,000	10,438,712	24,838,712	275,405,000
2028	15,200,000	9,862,343	25,062,343	260,205,000
2029	15,805,000	9,237,539	25,042,539	244,400,000
2030	16,470,000	8,592,583	25,062,583	227,930,000
2031	15,070,000	7,961,432	23,031,432	212,860,000
2032	14,835,000	7,413,641	22,248,641	198,025,000
2033	15,330,000	6,908,832	22,238,832	182,695,000
2034	15,850,000	6,383,319	22,233,319	166,845,000
2035	14,415,000	5,876,122	20,291,122	152,430,000
2036	12,555,000	5,425,723	17,980,723	139,875,000
2037	11,915,000	5,008,050	16,923,050	127,960,000
2038	12,350,000	4,577,988	16,927,988	115,610,000
2039	12,810,000	4,119,759	16,929,759	102,800,000
2040	13,300,000	3,636,234	16,936,234	89,500,000
2041	13,800,000	3,123,359	16,923,359	75,700,000
2042	14,140,000	2,579,325	16,719,325	61,560,000
2043	14,690,000	2,025,500	16,715,500	46,870,000
2044	15,250,000	1,469,013	16,719,013	31,620,000
2045	12,330,000	948,325	13,278,325	19,290,000
2046	11,085,000	499,150	11,584,150	8,205,000
2047	4,030,000	216,650	4,246,650	4,175,000
2048	4,175,000	73,063	4,248,063	-

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Unrestricted Net Position plus Foundation Temporarily Restricted Net Position minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projection period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	157,628,074	46,304,086	14,388,438	46,766,048	14,676,235		54,009,405	304,419,815
2016	205,681,490	55,828,890	13,501,383	42,092,018	25,363,152	9.53%	41,698,354	333,438,982
2017	209,652,685	68,538,857	15,936,544	49,450,966	33,750,247	6.68%	45,890,059	355,718,863
2018	(890,248,645)	81,647,325	16,077,765	57,392,237	36,379,132	7.30%	1,153,186,432	381,675,982
2019	(896,818,997)	85,403,450	17,774,306	58,134,228	40,873,716	-12.61%	1,109,927,717	333,546,988
2020	216,731,568	86,855,309	18,076,469	59,122,510	41,568,569	1.70%	-	339,217,287
2021	220,416,005	88,331,849	18,383,769	60,127,593	42,275,235	1.70%	-	344,983,981
2022	224,163,077	89,833,490	18,696,293	61,149,762	42,993,914	1.70%	-	350,848,708
2023	227,973,849	91,360,660	19,014,130	62,189,308	43,724,810	1.70%	-	356,813,136
2024	231,849,405	92,913,791	19,337,370	63,246,526	44,468,132	1.70%	-	362,878,960

3. Proposed Debt Financings

While ECU evaluates its capital investment needs on a regular basis, ECU currently has no legislatively approved projects that it anticipates financing during the Study Period.

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** ECU's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

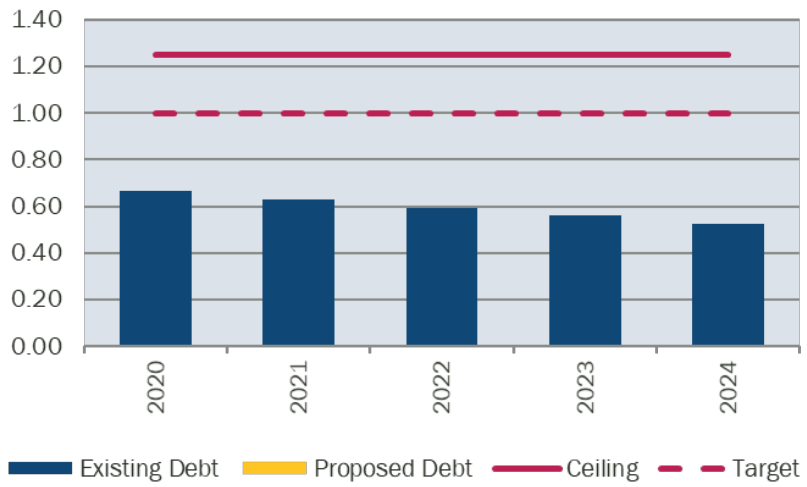
- Target Ratio: 1.00
- Ceiling Ratio: Not to exceed 1.25
- Projected 2020 Ratio: 0.66
- Highest Study Period Ratio: 0.66 (2020)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	567,903,680	1.70%	377,015,000	-	0.66	n/a	0.66
2021	577,558,042	1.70%	362,745,000	-	0.63	n/a	0.63
2022	587,376,529	1.70%	348,095,000	-	0.59	n/a	0.59
2023	597,361,930	1.70%	333,870,000	-	0.56	n/a	0.56
2024	607,517,083	1.70%	319,075,000	-	0.53	n/a	0.53

Debt to Obligated Resources



5-Year Payout Ratio Overview

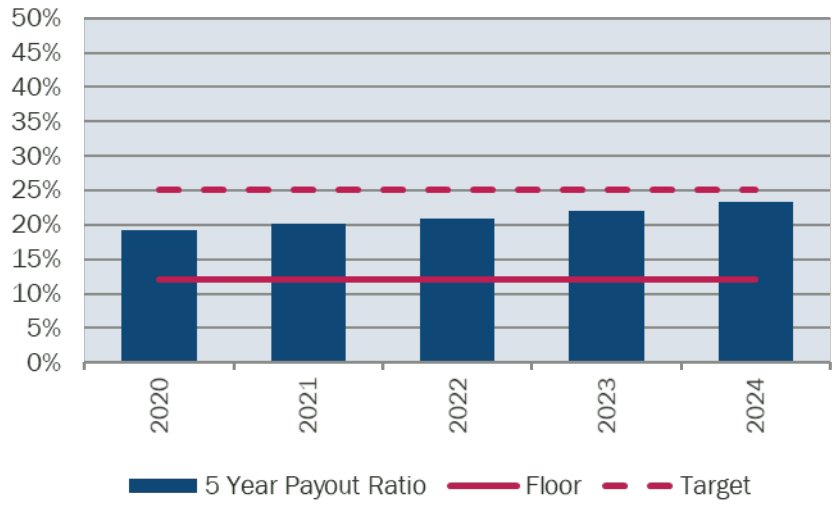
- **What does it measure?** The percentage of ECU's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

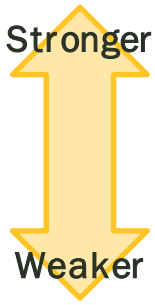
- Target Ratio: 25%
- Floor Ratio: Not less than 12%
- Projected 2020 Ratio: 19%
- Lowest Study Period Ratio: 19% (2020)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	377,015,000	19%
2021	362,745,000	20%
2022	348,095,000	21%
2023	333,870,000	22%
2024	319,075,000	23%

5-Year Payout Ratio





Expendable Resources to Debt

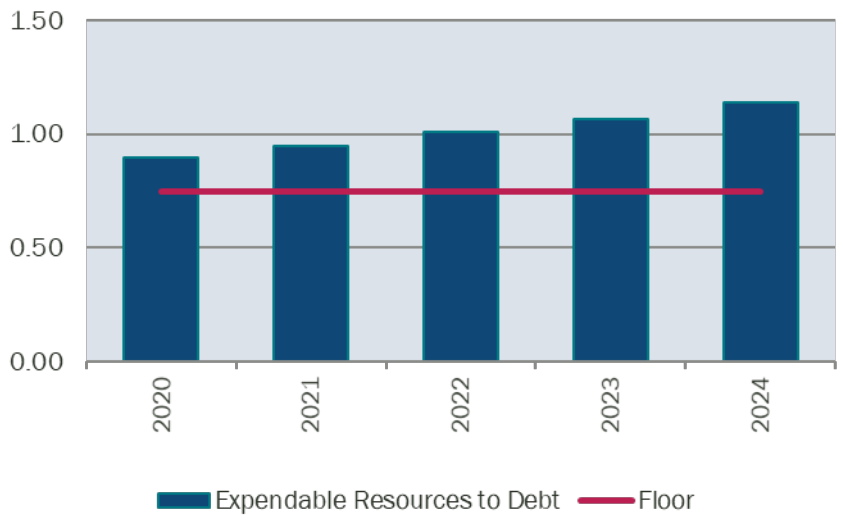
- **What does it measure?** The number of times ECU's liquid and expendable net position covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

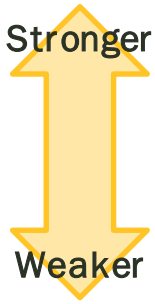
- Floor Ratio: Not less than 0.75x
- Projected 2020 Ratio: 0.90x
- Lowest Study Period Ratio: 0.90x (2020)

Expendable Resources to Debt

1	2	3	4	5	6	7
			Expendable Resources to Debt			
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	339,217,287	1.70%	377,015,000	-	0.90	0.90
2021	344,983,981	1.70%	362,745,000	-	0.95	0.95
2022	350,848,708	1.70%	348,095,000	-	1.01	1.01
2023	356,813,136	1.70%	333,870,000	-	1.07	1.07
2024	362,878,960	1.70%	319,075,000	-	1.14	1.14

Expendable Resources to Debt





Debt Service to Operating Expenses

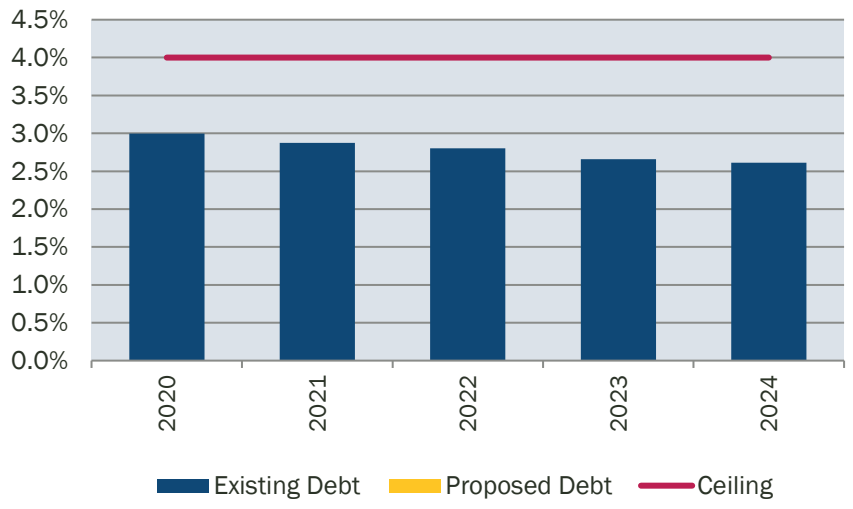
- **What does it measure?** ECU's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

- Policy Ratio: Not to exceed 4.00%
- Projected 2020 Ratio: 3.00%
- Highest Study Period Ratio: 3.00% (2020)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	968,867,987	1.70%	29,022,907	-	3.00%	n/a	3.00%
2021	985,338,743	1.70%	28,324,291	-	2.87%	n/a	2.87%
2022	1,002,089,502	1.70%	28,064,547	-	2.80%	n/a	2.80%
2023	1,019,125,023	1.70%	27,088,403	-	2.66%	n/a	2.66%
2024	1,036,450,149	1.70%	27,070,095	-	2.61%	n/a	2.61%

Debt Service to Operating Expenses



5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, ECU's debt capacity is based on the amount of debt ECU could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, ECU's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, ECU's current estimated debt capacity is **$332,864,600,** After taking into account any legislatively approved projects detailed in **Section 3** above, if ECU issued no additional debt until the last year of the Study Period, then ECU's debt capacity for 2024 is projected to increase to **$440,321,354.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	0.66	1.25	332,864,600
2021	0.63	1.25	359,202,553
2022	0.59	1.25	386,125,661
2023	0.56	1.25	412,832,413
2024	0.53	1.25	440,321,354

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of ECU's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" does not necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- **If ECU were to use all of its calculated debt capacity during the Study Period, ECU's credit ratings may face significant downward pressure**.
- Projecting the exact amount ECU could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **Use of Multiple Factors**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.

- **The State's Impact**
  - Historically, each Institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
  - If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.
- **Factor Interdependence**
  - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
  - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its institution to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
  - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
  - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

ECU's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 2009A	UNC System Pool Revenue Bonds	1,495,000	10/1/2019	Croatan Dining Project		Dining Receipts
				Scott Residence Hall		Housing Receipts
				Softball Field		Student Fee
Series 2010A	UNC System Pool Revenue Bonds	3,540,000	10/1/2021	East End Zone		Athletic Receipts
				College Hill Residence Hall	2004C	Housing Receipts
Series 2010B	Taxable General Revenue Bonds (BABs)	21,465,000	10/1/2035	Tyler Residence Hall		Housing Receipts
				Wright Place Dining Renovations		Dining Receipts
				Olympic Sports Facility		Student Fee
Series 2011A	UNC System Pool Revenue Bonds	2,820,000	5/1/2023			
				West End Dining	2003A	Dining Receipts
				College Hill Residence Hall	2004C	Housing Receipts
2012	US Bank Note (Gymnasium)	763,862	11/1/2019	Auxiliary Gym		Pledge Receipts and Athletics
Series 2013A	General Revenue Refunding Bonds	10,905,000	10/1/2033	College Hill Residence Hall	2004C	Housing Receipts
Series 2014A	General Revenue Bonds	50,690,000	10/1/2043	Gateway East and West Residence Halls		Housing Receipts
Series 2015A	General Revenue Bonds	63,225,000	10/1/2044	West Campus Student Union		Student Fee
				Croatan Dining Project	2009A	Dining Receipts
				Scott Residence Hall	2009A	Housing Receipts
				Softball Field Project	2009A	Student Fee
				College Hill Residence Hall	2006A	Housing Receipts
Series 2015B	Taxable General Revenue Bonds	2,910,000	10/1/2021	Jones Residence Hall	2006A	Housing Receipts
				Galley Dining	2006A	Dining Receipts
Series 2016A	General Revenue Bonds	136,650,000	10/1/2045	East Campus Student Union		Student Fee
				Parking		Parking Receipts
				Dining		Dining Receipts
				White Residence Hall Renovation		Housing Receipts
				Clement Residence Hall Renovation		Housing Receipts
				Greene Residence Hall Renovation		Housing Receipts
Series 2017A	General Revenue Bonds	12,325,000	10/1/2029	East End Zone	2010A	Athletic Receipts
Series 2017B	General Revenue Bonds	8,060,000	10/1/2026	West End Dining	2012	Dining Receipts
				College Hill Residence Hall		Housing Receipts
Series 2018A	General Revenue Bonds	75,795,000	10/1/2047	Dowdy-Ficklen Stadium		Athletic Receipts
				Greene Residence Hall Renovation		Housing Receipts
Series 2018B	Taxable General Revenue Bonds	1,690,000	10/1/2019	Dowdy-Ficklen Stadium		Athletic Receipts
Total		392,333,862				

Approved by the UNC Board of Governors on May 20, 2020

7. Credit Profile

The following page provides a snapshot of ECU's current credit ratings, along with (1) a summary of various credit factors identified in ECU's most recent rating report and (2) recommendations for maintaining and improving ECU's credit ratings in the future.

Credit Profile of the University – (General Revenue)

Overview

- Moody's maintains a Aa2 rating on ECU's general revenue bonds. The outlook is stable.
- Standard and Poor's maintains a AA- rating on ECU's general revenue bonds. The outlook is stable.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-
Non Investment Grade		

Key Information Noted in Reports

Credit Strengths

- Healthy support from the Aaa-rated State
- Improving leverage as debt subsides
- Strong management of university finances and enrollment translates into steady operating results
- Revenue diversity, including patient care revenue, student charges, and state support, helps insulate ECU from pressure on any one revenue source

Credit Challenges

- Modest wealth compared to relative Aa2-rated peers
- Debt has increased faster than cash flow from operations or balance sheet reserve growth over the past 5 years

Recommendations & Observations

- Pursue strategies, working within the existing statutory framework relating to reversions, to increase liquidity through growth in cash reserves.
- Continue to seek strategies to limit new debt in the near term while addressing critical infrastructure needs, in accordance ECU's existing debt policy and in service of ECU's other strategic initiatives.

Approved by the UNC Board of Governors on May 20, 2020

8. Peer Comparison

Moody's Key Credit Ratios	East Carolina University	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2019	Virginia Commonwealth University	Central Michigan University	Western Michigan University	University of South Carolina	
Most Senior Rating	Aa2	Aa2	Aa3	Aa3	Aa2	Aa2
Total Debt ($, in millions)	397	1091	142	299	765	1396
Total Cash & Investments ($, in millions)	521	3294	436	735	1522	1974
Operating Revenue ($, in millions)	908	1060	437	572	1411	2120
Operating Expenses ($, in millions)	920	1104	436	519	1309	2133
Market Performance Ratios						
Annual Change in Operating Revenue (%)	-1.1%	0.1%	-3.2%	0.5%	4.2%	2.4%
Operating Ratios						
Operating Cash Flow Margin (%)	3.6%	0.1%	7.6%	17.0%	13.4%	9.5%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	0.6	3.0	1.0	1.4	1.2	0.7
Total Debt to Operating Expenses (x)	0.4	1.0	0.3	0.6	0.6	0.9
Monthly Days Cash on Hand (x)	99	144	269	0	200	136
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	1.3	3.0	3.1	2.5	2.0	0.6
Debt Service to Operating Expenses (%)	3.3%	3.8%	2.7%	18.8%	3.1%	5.7%
Total Debt-to-Cash Flow (x)	12.3	26.0	4.3	3.1	4.1	6.6

9. Debt Management Policies

ECU's current debt policy is included in the following pages.

East Carolina University

Debt Management Guidelines

Last Revised: 3-31-2011

East Carolina University
East Fifth St
Greenville, NC 27858-4353
252.328.6131

Approved by the UNC Board of Governors on May 20, 2020

East Carolina University

Debt Management Guidelines

Table of Contents

Approved by the UNC Board of Governors on May 20, 2020

East Carolina University
Debt Management Guidelines

I. Introduction

Purpose

To fulfill its mission, East Carolina University will need to make ongoing strategic capital investments for additional academic, student life, medical, athletic, and other plant facilities using an appropriate mix of funding sources including State bonds and appropriations, University bonds, internal reserves, and private giving.

The purpose of this debt policy is to ensure the appropriate mix of funding sources is used and to provide guidance on the strategic use of debt as a funding source. Debt is a valuable source of capital project financing and its use should be limited to projects that relate to the mission and strategic objectives of the University. The amount of debt incurred affects the financial health of the University and its credit rating. Debt provides a limited low cost source of funding for capital projects and, together with other limited resources, should be used and allocated appropriately and strategically.

This policy provides a discipline and framework that will be used by management to evaluate the appropriate use of debt in capital financing plans.

Objectives of the Debt Policy

The objectives stated below provide the framework by which decisions will be made regarding the use and management of debt. The debt policy and objectives are subject to re-evaluation and change over time.

This Debt Policy is set forth to:

1. Outline a process for identifying and prioritizing capital projects considered eligible for debt financing and assuring that debt-financed projects have a feasible plan of repayment. Projects that relate to the core mission and that have associated revenues will generally be given higher priority for debt financing.

2. Define the quantitative tests that will be used to evaluate the University's overall financial health and present and future debt capacity.

3. Define project specific quantitative tests, as appropriate, that will be used to determine the financial feasibility of an individual project.

4. Manage the University's debt to maintain an acceptable credit rating. The University, consistent with the capital objectives, will limit its overall debt to a level that will maintain an acceptable credit rating with bond rating agencies. Maintaining an acceptable credit rating will permit the University to continue to issue debt and finance capital

projects at favorable interest rates, although the attainment or maintenance of a specific rating is not an objective of this policy.

5. Establish guidelines to limit the risk of the University's debt portfolio. The University will manage debt on a portfolio basis, rather than on a transactional or project specific basis, and will use an appropriate mix of fixed and variable rate debt to achieve the lowest cost of capital while limiting exposure to market interest rate shifts. Various types of debt structures and instruments will be considered, monitored, and managed within the framework established in this policy and according to internal management procedures. Debt instruments covered by this policy include not only bonds, but obligations of the university, such as special obligations, lease purchases, installment purchases, commercial paper, limited obligations, notes, etc.

6. Assign responsibilities for the implementation and management of the University's Debt Policy.

II. Process for Identifying and Prioritizing Capital Projects Requiring Debt

At the current credit rating the University has adequate but limited debt capacity. Additionally, the State of North Carolina adheres to limits on debt issuance provided in its adopted debt affordability policy and the University must compete with all other state agencies for capital projects bonding authority. Therefore it is essential that the University appropriately prioritize capital projects requiring debt.

Management will allocate the use of debt financing within the University to include prioritization of debt resources among all uses, including academic and student life projects, plant and equipment financing, and projects with University-wide impact.

The debt allocation matrix below depicts an approach to prioritizing capital projects requiring debt.

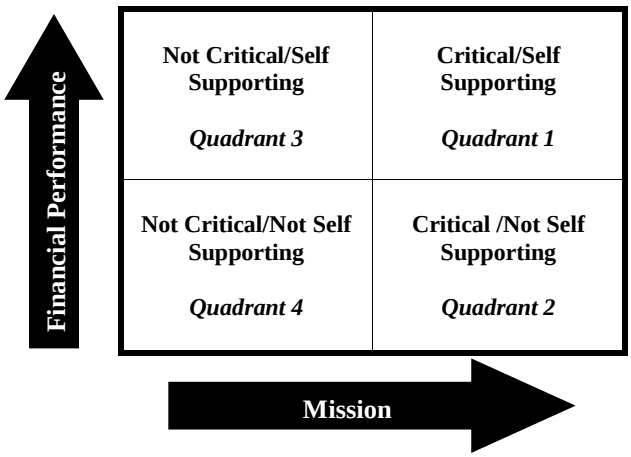


Figure 1 Debt Allocation Matrix

Explanation of debt allocation matrix

Quadrant 1:

Project is critical to the core missions of research, service or instruction **and** has its own funding source (i.e., non-general fund supported).

Quadrant 2

Project is critical to the core missions of research, service or instruction **but** **does not** have its own funding source (i.e., will require-general fund support).

Quadrant 3

Project is not critical to the core missions of research, service or instruction **but** has its own funding source (i.e., non-general fund supported).

Quadrant 4

Project is not critical to the core missions of research, service or instruction **and** **does not have** its own funding source (i.e., will require general fund support).

Note that approval of projects in Quadrant 3 and 4 will reduce the ability to issue debt for the mission critical projects identified in Quadrants 1 and 2.

Guidelines for Prioritizing Capital Projects Requiring Debt

Management will use the following guidelines when prioritizing capital projects and making decisions about financing options and use of debt:

1. Only projects related to the mission of the University, directly or indirectly, will be eligible for debt financing.

2. State funding and philanthropy are expected to remain major sources of financing for the University's capital projects. In assessing the possible use of debt, all other financing and revenue sources will be considered. State appropriations and bonds, philanthropy, project-generating revenues, research facilities and administration cost reimbursement, expendable reserves, and other sources are expected to finance a portion of the cost of a project. Debt is to be used conservatively and strategically.

3. The University will consider other funding opportunities (e.g., joint ventures, real estate development, etc.) when appropriate and advantageous to the University. Opportunities and financing sources will be evaluated within the context of the Debt Policy.

4. Federal research projects will receive priority consideration for debt financing due to partial reimbursement of operating expenses (including the interest component of applicable debt service) of research facilities.

5. Every project considered for financing must have a defined, supportable plan of costs (construction and incremental operating) approved by management. A project that has a related revenue stream or can create budgetary savings will receive priority consideration. However, projects may not receive a higher priority simply because they are self-supporting. For example, a project that mitigates life safety issues may be given preferences over a self supporting project.

III. Debt Ratios

The University will establish guidelines for overall debt management using a select number of ratios that are specific to the ability to issue debt and are key determinants used by the rating agencies in rating the University's bonds. The Moody's Investors Service annual Public University Median Report will be used as a guide and the University will review and contrast performance measures that are viewed with more emphasis, including but not limited to: unrestricted resources to debt, expendable resources to debt, and debt burden. The ratios will be calculated and reported annually and when new debt is issued, and revised periodically to reflect any changes in accounting standards. A goal is to measure the total amount of outstanding debt compared to University balance-sheet resources and the annual operating budget. These ratios can be derived from the financial statements and are based on current GAAP requirements, including the GASB 34/35 reporting format and are consistent with ratios used in the higher education industry to permit benchmarking. Furthermore, in light of GASB implemented changes to GAAP accounting rules, any changes made by the rating analysts to ratio methodology will be incorporated accordingly.

IV. Project Specific Quantitative Tests

Consideration of the performance ratios will determine the ability and/or advisability of issuing additional debt from a University-wide perspective. Determination of the prioritization of individual projects to be allocated a portion of available debt capacity is a separate, internal decision that must be made before a project is initiated.

Many factors will influence this internal decision process. First and foremost will be how the project is prioritized with regard to mission criticality as described by the debt allocation matrix (four quadrant model) above. Although debt will be structured to meet the University's comprehensive long-term objectives, each project being financed will be required to provide a sound business plan, including the source of repayment for the debt and appropriate and realistic repayment terms. Among other things, the repayment terms will require that the loan term is no greater than the expected useful life of the asset financed. Additionally, every project considered for debt financing must have a management approved plan of project costs, including incremental operating expenses and revenues. Incremental revenues include revenue increases directly associated with the project (e.g., usage fees) that can only be realized if the project is undertaken. Similarly, incremental expenses include any increase in expected operating costs associated with the project. Revenues and cost savings should be estimated conservatively, especially for high-risk projects.

V. General Debt Management Guidelines

Methods of Sale

The University will use the method of sale that will achieve the lowest cost of capital considering the complexity of the transaction. This can be achieved by using either a competitive or negotiated sale method for the placement of bond offerings. For transactions using new or non-traditional pledges of University revenues, or those involving greater complexity, a negotiated method of sale will be considered, and legislative approval requested, on an individual transaction basis. Bonds may also be sold through a private or limited placement, but only if it is determined that a public offering through either a competitive or negotiated sale is not in the best interests of the university.

Selection of Financial Advisors, Underwriters and Bond Counsel

The University will use a request for proposal process to select Financial Advisors, Underwriters and Bond Counsel. Firms providing financial advisory and bond counsel services are generally selected for a specific period of time rather than for individual transactions. Underwriting firms will be selected on individual transactions and will be selected based upon expertise related to the specific transaction. Additionally, the University may use the Financial Advisors, Underwriters and Bond Counsel selected by General Administration through its own similar competitive process.

Structure and Maturity

Generally, debt should be structured on a level debt basis, i.e., so that the annual debt service repayments will, as nearly as practicable, be the same in each year. A deviation from these preferences is permissible if it can be demonstrated to be in the university's best interest, such as restructuring debt to avoid a default. On projects that are designed to be self sufficient, the debt service may be structured to match future anticipated receipts.

The University will issue bonds to finance capital projects under the provisions of trust indentures approved by the Board of Trustees.

Debt in the form of capitalized lease obligations will be approved by the Board of Trustees and issued on behalf of the University by the ECU Real Estate Foundation, and other financing entities.

The University will employ maturity structures that correspond with the life of the facilities financed, generally not to exceed 30 years. Equipment will be financed for a period up to 120% of its useful life. As market dynamics change, maturity structures should be reevaluated. Call features should be structured to provide the highest degree of flexibility relative to cost.

Variable Rate Debt

A degree of exposure to variable interest rates within the University's debt portfolio may be desirable in order to:

(i) take advantage of repayment/restructuring flexibility; and

(ii) benefit from historically lower average interest costs; and

(iii) diversify the debt portfolio; and,

(iv) provide a hedge to short-term working capital balances.

Management will monitor overall interest rate exposure, analyze and quantify potential risks, and coordinate appropriate fixed/variable allocation strategies.

Recognizing the desire to manage interest rate risk, the amount of variable rate debt outstanding shall not exceed 20% of the University's outstanding debt. This limit is based on (i) the University's desire to limit annual variances in its debt portfolio, (ii) provide sufficient structuring flexibility to management, (iii) keep the University's variable rate allocation within acceptable external parameters, and (iv) use variable rate debt (and/or swaps) to optimize debt portfolio allocation and minimize costs.

$$\frac{\textbf{VARIABLE RATE AND LIQUIDITY EXPOSURE}}{\textbf{TOTAL LONG-TERM DEBT OUTSTANDING}} \quad \textbf{< 20\%}$$

Budgetary controls for variable rate debt: To avoid a situation in which debt service on variable rate bonds exceeds the annual amount budgeted; the following guidelines should be followed in establishing a variable rate debt service budget:

i) A principal amortization schedule should be established, with provision made for payment of amortization installments in each respective annual budget;

ii) Provide for payment of interest for each budget year using an assumed budgetary interest rate that allows for fluctuations in interest rates on the bonds without exceeding the amount budgeted. The budgetary interest rate may be established by:
(1) using an artificially high interest rate given current market conditions; or (2) setting the rate based on the last 12 months actual rates of an appropriate index plus a 200 basis point cushion or spread to anticipate interest rate fluctuations during the budget year. The spread should be determined by considering the historical volatility of short-term interest rates, the dollar effect on the budget and current economic conditions and forecasts; or, (3) any other reasonable method determined by the university

iii) The amount of debt service incurred in each budget year should be monitored monthly by the university to detect any significant deviations from the annual budgeted debt service. Any deviations in interest rates that might lead to a budgetary problem should be addressed immediately; and

iv) As part of the effort to monitor actual variable rate debt service in relation to the budgeted amounts and external benchmarks, the university should establish a system to

monitor the performance of any service provider whose role it is to periodically reset the interest rates on the debt, i.e., the remarketing agent or auction agent.

Liquidity: One of the features typical of variable rate debt instruments is the bondholder's right to require the issuer to repurchase the debt at various times and under certain conditions. This, in theory, could force the issuer to repurchase large amounts of its variable rate debt on short notice, requiring access to large amounts of liquid assets. Issuers that do not have large amounts of liquid assets may establish a liquidity facility with a financial institution that will provide the money needed to satisfy the repurchase. The liquidity provider should have a rating of A1/P1 or higher. The liquidity agreement does not typically run for the life of long-term debt. Accordingly, there is a risk that the provider will not renew the agreement or that it could be renewed only at substantially higher cost. Similar issues may arise if the liquidity provider encounters credit problems or an event occurs that results in early termination of the liquidity arrangement; in either case the issuer must arrange for a replacement liquidity facility.

Swaps: Should the University participate in the use of Swaps, it must do so in agreement with the Board of Governors of the University of North Carolina "Swap Policy for Constituent Institutions", as shown in Appendix A.

Taxable Debt (without Federal subsidies)

While all the University's capital projects may not qualify for tax-exempt debt, taxable debt should be used only in appropriate cases as it generally represents a more expensive source of capital relative to tax-exempt issuance. Issuing taxable debt reduces the University's overall debt affordability due to higher associated interest expense. When utilized, taxable debt will be structured to provide maximum repayment flexibility and rapid principal amortization.

Capitalized Interest

Capitalized interest from bond proceeds is used to pay debt service until a revenue producing project is completed or to manage cash flows for debt service in special circumstances. Because the use of capitalized interest increases the cost of the financing, it should only be used when necessary for the financial feasibility of the project. In revenue-producing transactions, the University will attempt to structure debt service payments to match the revenue structure in order to minimize the use of capitalized interest.

Credit Ratings

The University will maintain ongoing communication and interaction with bond rating agencies, striving to educate the agencies about the general credit structure and financial performance of the University in order to attain the highest credit rating possible.

Refunding Targets

Generally, refunding bonds are issued to achieve debt service savings by redeeming high interest rate debt with lower interest rate debt. Refunding bonds may also be issued to restructure debt or modify covenants contained in the bond documents. Current tax law limits to one time the issuance of tax-exempt advance refunding bonds to refinance bonds issued after 1986. There is

no similar limitation for tax-exempt current refunding bonds. The University will continuously monitor its outstanding tax-exempt debt portfolio for refunding and/or restructuring opportunities. The following guidelines should apply to the issuance of refunding bonds, unless circumstances warrant a deviation there from:

a) Refunding bonds should generally be structured to achieve level annual debt service savings.

b) The life of the refunding bonds should not exceed the remaining life of the bonds being refunded.

c) Advance refunding bonds issued to achieve debt service savings should have a minimum target savings level measured on a present value basis equal to 2-3% of the par amount of the bonds being advance refunded. The 2-3% minimum target savings level for advance refundings should be used as a general guide to guard against prematurely using the one advance refunding opportunity for post-1986 bond issues. However, because of the numerous considerations involved in the sale of advance refunding bonds, the target should not prohibit advance refundings when the circumstances justify a deviation from the guideline.

d) Refunding bonds that do not achieve debt service savings may be issued to restructure debt or provisions of bond documents if such refunding serves a compelling university interest.

For current refundings, the University will consider transactions that, in general, produce present value savings (based on refunded bonds). A refunding will also be considered if it relieves the University of certain limitations, covenants, payment obligations or reserve requirements that reduce flexibility. The University will also consider refinancing certain obligations within a new money offering even if savings levels are minimal in order to consolidate debt into a general revenue pledge, and/or reduce the administrative burden and cost of managing many small outstanding obligations.

VI. Disclosure

Primary Disclosure

The University shall use best practices in preparing disclosure documents in connection with the public offer and sale of debt so that accurate and complete financial and operating information needed by the markets to assess the credit quality and risks of each particular debt issue is provided.

The disclosure recommendations of the Government Finance Officers Association's "Disclosure for State and Local Governments Securities," and the National Federation of Municipal Analysts' "Recommended Best Practices in Disclosure for Private Colleges and Universities" should be followed to the extent practicable, specifically including the recommendation that

financial statements be prepared and presented according to generally accepted accounting principles.

Secondary Disclosure

The University will continue to meet its ongoing disclosure requirements as required under Rule 15c2-12 of the Securities and Exchange Commission. The University will submit financial reports, statistical data, and any other material events as required under outstanding bond indentures.

VII. Tax-Exempt Debt - Post Issuance Considerations

Bond Proceeds Investment

The University will invest bond-funded construction funds, capitalized interest funds, and costs of issuance funds appropriately to achieve the highest return available under arbitrage limitations. When sizing bond transactions, the University will consider funding on either a net or gross basis.

Arbitrage

The University will comply with federal arbitrage requirements on invested tax-exempt bond proceeds, causing arbitrage rebate calculations to be performed annually and rebate payments to be remitted to the IRS periodically as required.

Private Use and Gifts

The University will monitor all arrangements with third parties to use bond-financed property, including the federal government and other colleges and universities, in order to ensure the tax-exempt status of the related debt. The University will monitor any sales of bond-financed property, and any lease management contracts, research arrangements and naming rights agreements to the extent such arrangements impact bond-financed property, and will work closely with bond counsel in determining events/actions that may cause a bond issue to become taxable. The University will also work with the bond counsel to train University personnel in these matters. In order to track arrangements that could potentially result in a loss of tax-exempt status of University debt, a record of financed facilities, including facilities financed by the State will be maintained.

The University will track gifts which are restricted to facilities financed, or to be financed with tax-exempt debt and will work with bond counsel to ensure that such gifts are used in a manner that complies with federal tax law limitations.

VIII. Responsibility

Assignment of Responsibilities

The Vice Chancellor for Administration and Finance is directly responsible for overseeing capital debt management and adhering to advice and guidelines adopted by the Board of Trustees.

Facilities Planning and Facilities Management

The Associate Vice Chancellor for Campus Operations will take the lead role in estimating and defining project costs and in maintaining a list of projects that are being considered. The Associate Vice Chancellor for Campus Operations will take the lead role in developing capital planning documents for the current year, current biennium and the capital plan.

Treasury Management

The Financial Director will maintain a schedule of current and forecasted debt and associated payment of principal, interest and fees. The Associate Vice Chancellor for Financial Services is responsible for the administration of all aspects of debt financing, including accounting, and contracting with financial advisors, underwriters and bond counsel to issue new debt or refinance existing debt.

Management

A Debt/Capital Committee will be established by the Vice Chancellor of Administration and Finance. The committee will consist of no more than 12 individuals from various areas of the University including, but not necessarily limited to: Financial Services, Campus Operations, Academic Affairs, Health Sciences, Research and Graduate Studies, Student Life, and Athletics. The Debt/Capital Committee will meet on a regular basis to review projects being considered and the various financing options available. They will make recommendations to the Vice Chancellor for Administration and Finance who will present the recommendations of this group to the Executive Council and the Chancellor, for further discussion and prioritization.

Board of Trustees

The Board of Trustees will consider for approval each special obligation project of the University, in accordance with State law. The Board of Trustees will consider and approve this Debt Policy and any proposed changes to it.

Review of Debt Policy/Oversight

This debt policy is a living document. The Executive Council will review this policy at least annually and change as needed to reflect changing conditions and practices. However, it is noted that consistent application of the University's debt policy provides evidence of debt management discipline over the long term. This review process is necessary to ensure that the policy remains consistent with the University's objectives/debt philosophy and responsive to evolving practices. In addition, the Debt/Capital Committee will hold periodic meetings in order to review short and intermediate term financing needs, market opportunities, and financial performance. This periodic review will help the University determine appropriate financial decisions as well as review capital investments and the timing of financing plans responsive to market conditions.

Glossary

Annual debt service – the principal and interest due on long-term debt in a fiscal year.

Bridge financing – any type of financing used to "bridge" a period of time. For universities, it generally refers to financings that provide funding in advance of a long-term bond issue or the receipt of gift funding.

Capital project – physical facilities or equipment or software that may be capitalized.

GAAP – Generally Accepted Accounting Principles.

GASB 34/35 – Government Accounting Standards Board Statement Nos. 34 and 35.

Leverage – long-term debt as a component of the total assets of the University. "High leverage" indicates an institution that has a considerable portion of its assets that are debt financed.

Competitive sale – A sale of municipal securities by an issuer in which underwriters or syndicates of underwriters submit sealed bids to purchase the securities. The securities are won and purchased by the underwriter or syndicate of underwriters who submit the best bid according to guidelines in the notice of sale.

Negotiated sale – In a negotiated underwriting the sale of bonds is by negotiation and agreement with an underwriter or underwriting syndicate selected by the issuer before the moment of sale. This is in contrast to a competitive or an advertised sale.

Advance refunding – A financing structure under which new bonds are issued to repay an outstanding bond issue more than ninety (90) days from the date of issuance of the new issue. Generally, the proceeds of the new issue are invested in government securities, which are placed in escrow. The interest and principal repayments on these securities are then used to repay the old issue, usually on the first call date. Advance refundings are done to save interest, extend the maturity of the debt or change existing restrictive covenants.

Current refunding – Sale of a new issue, the proceeds of which are to be used, within ninety (90) days, to retire an outstanding issue by, essentially, replacing the outstanding issues with the new issue. Current refundings are done to save interest cost, extend the maturity of the debt, or change existing restrictive covenants.

Primary disclosure – SEC Rule 15c2-12 obligates underwriters participating in primary (new) offerings of municipal securities (of $1,000,000 or more; are sold to more than 35 people; and have a maturity greater than 9 months) to obtain, review, and distribute to investors copies of the issuer's official statement. While previously exempt, as of December 1, 2010, all new Variable Rate Demand Obligations will also be subject to Rule 15c2-12.

Secondary disclosure - At the time bonds are offered, the issuer must outline the type of Annual Financial Information it will provide annually and the terms of its continuing disclosure agreement. Issuers are also required to provide notice of certain events to each NRMSIR or Municipal Securities Rulemaking Board within 10 business days after the occurrence of the event. Certain events require an events notice to be filed, ***regardless of materiality*** as follows:

1. Failure to pay principal and interest;
2. Unscheduled draws on debt service reserves;
3. Unscheduled draws on credit enhancement;
4. Substitution of credit or liquidity providers, or their failure to perform;
5. Adverse tax opinions or events affecting the tax-exempt status of the security;
6. Defeasances;
7. Rating changes;
8. Issuance by IRS of proposed or final determination of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the securities;
9. Tender offers; and,
10. Bankruptcy, insolvency, receivership or similar proceeding.

For other events, an events notice only needs to be filed if ***deemed material.***

1. Non-payment related defaults;
2. Modifications to rights of security holders;
3. Bond calls;
4. Release, substitution, or sale of property securing repayment of the securities;
5. Mergers, consolidations, acquisitions the sale of all or substantially all of the assets of the obligated person or their termination; and,
6. Appointment of a successor or additional trustee or the change of the name of a trustee.

East Carolina University
Financing Schedule
Example

Date [Actual Dates to Be Inserted]	Event	Responsibility
Month 1	Develop/Review financial projections for available revenues to repay debt service	ECU/FA
Month 1	Schedule conference call with UNC-GA staff to discuss the proposed financing and schedule	ECU/FA
Month 1	Select underwriting team	ECU/FA
Month 2	Organizational conference call with the working group to review the plan of finance and the financing schedule	WG
Month 2	Board of Trustees approval	ECU
Month 2	Underwriters Counsel and Bond Counsel receive disclosure/due diligence information from ECU	ECU
Month 2	Distribute Preliminary Official Statement and legal documents to working group	BC/UC
Month 3	Document review meeting/conference call	WG
Month 3	Distribute 2nd draft of legal documents and POS	BC/UC
Month 3	Board of Governors resolution to General Administration	BC
Month 3	Conference call to review 2nd draft of documents	WG
Month 3	Distribute information package to Rating Agencies/ Bond Insurers	FA; U
Month 4	Board of Governors Finance Committee approval	S
Month 4	Board of Governors approval	S
Month 4	Rating Agency/Insurer visits or conference calls	ECU, FA; U
Month 4	Receive Bond Insurance bids and select Bond Insurer	ECU, FA, U
Month 5	Receive Ratings	ECU, FA, U
Month 5	Distribute Preliminary Official Statement	UC
Month 5	Bond Sale	ECU, FA, U
Month 5	Sign Bond Purchase Agreement	U, ECU
Month 5	Distribute Final Official Statement	U; UC
Month 5	Pre-closing	WG
Month 5	Closing	WG

Key	Working Group Participants
ECU	University staff
WG	Working Group
FA	Financial Advisor
BC	Bond Counsel
S	UNC System
U	Underwriter
UC	Underwriter Counsel
WG	Working Group

Appendix A

BOARD OF GOVERNORS OF THE UNIVERSITY OF NORTH CAROLINA

SWAP POLICY FOR CONSTITUENT INSTITUTIONS

This policy will govern the use by the constituent institutions of the University of North Carolina System of Swap Agreements.

DEFINITIONS

"*Chief Financial Officer*" means the person from time to time serving as the responsible financial person for a Constituent Institution.

"*Constituent Institution*" means one of the constituent institutions of the University of North Carolina System listed in Section 116-4 of the North Carolina General Statutes, as amended.

"Swap Agreement" mean a written contract entered into in connection with the debt issued or to be issued by or on behalf of a Constituent Institution in the form of a rate swap agreement, basis swap agreement, forward rate agreement, interest rate option agreement, rate cap agreement, rate floor agreement, rate collar agreement, or other similar agreement, including any option to enter into or terminate any of the foregoing or any combination of such agreements.

THE CONDITIONS UNDER WHICH SWAP AGREEMENTS MAY BE ENTERED INTO

Purposes

A Constituent Institution may use a Swap Agreement for the following purposes only:

(a) To achieve significant savings as compared to a product available in the debt market.

(b) To enhance investment returns within prudent risk guidelines.

(c) To prudently hedge risk in the context of a particular financing or the overall asset/liability management of the Constituent Institution.

(d) To incur variable rate exposure, such as selling interest rate caps or entering into a swap in which the Constituent Institution's payment obligation is floating rate.

(e) To achieve more flexibility in meeting the Constituent Institution's overall financial objectives than can be achieved in conventional markets.

Legality. The Board must receive an opinion acceptable to the market from a nationally recognized bond counsel law firm acceptable to the Chief Financial Officer of the Constituent Institution that the Swap Agreement is a legal, valid and binding obligation of the Board and entering into the transaction complies with applicable law.

SPECULATION

A Constituent Institution may not use a Swap Agreement for speculative purposes. Associated risks will be prudent risks that are appropriate for the Constituent Institution to take.

ASPECTS OF RISK EXPOSURE ASSOCIATED WITH A SWAP AGREEMENT

Before entering into a Swap Agreement, the Constituent Institution shall evaluate all the risks inherent in the transaction. These risks to be evaluated could include counterparty risk, termination risk, rollover risk, basis risk, tax event risk and amortization risk.

The Constituent Institution shall endeavor to diversify its exposure to counterparties. To that end, before entering into a transaction, it should determine its exposure to the relevant counterparty or counterparties and determine how the proposed transaction would affect the exposure. The exposure should not be measured solely in terms of notional amount, but rather how changes in interest rates would affect the Constituent Institution's exposure.

COUNTERPARTY SELECTION CRITERIA

The Constituent Institution may enter into a Swap Agreement if the counterparty has at least two long term unsecured credit ratings in the double A category from Fitch Ratings, Moody's, or S&P and the counterparty has demonstrated experience in successfully executing a Swap Agreement. The Constituent Institution may enter into a Swap Agreement if the counterparty has at least two long term unsecured credit ratings in the single A category or better from Fitch Ratings, Moody's, or S&P only if (a) the counterparty either provides a guarantor or assigns the agreement to a party meeting the rating criteria in the preceding sentence or (b) the counterparty (or guarantor) collateralizes the Swap Agreement in accordance with the criteria set forth in this Policy and the transaction documents.

If the rating of the counterparty, or if secured, the entity unconditionally guaranteeing its payment obligations not satisfy the requirements of the Counterparty Selection Criteria, then the obligations of the counterparty must be fully and continuously collateralized by direct obligations of, or obligations the principal and interest on which are guaranteed by, the United States of America and such collateral must be deposited with financial institution serving as a custodial agent for the Constituent Institution.

METHODS BY WHICH A SWAP AGREEMENT IS TO BE PROCURED

Negotiated Method. A Constituent Institution may procure a Swap Agreement by a negotiated method under any of the following conditions:

(a) (1) If the Chief Financial Officer of the Constituent Institution makes a determination that, due to the size or complexity of a particular swap, a negotiated transaction would result in the most favorable pricing and terms; or

(2) If a derivative embedded within a refunding issue is proposed and meets the Constituent Institution's savings target; and

(b) If the Constituent Institution receives a certification from an independent financial institution or financial advisor that the terms and conditions of the Swap Agreement provides the Constituent Institution a fair

market value as of the date of its execution in light of the facts and circumstances.

Competitive Method. A Constituent Institution may also procure a Swap Agreement by competitive bidding. The competitive bid can limit the number of firms solicited to no fewer than three. The Constituent Institution may determine which parties it will allow to participate in a competitive transaction. In situations in which the Constituent Institution would like to achieve diversification of counterparty exposure, the Constituent Institution may allow a firm or firms not submitting the bid that produces the lowest cost to match the lowest bid. The parameters for the bid must be disclosed in writing to all potential bidders.

LONG-TERM IMPLICATIONS

In evaluating a particular transaction involving the use of Swap Agreement, the Constituent Institution shall review long-term implications associated with entering into the Swap Agreement, including costs of borrowing, historical interest rate trends, variable rate capacity, credit enhancement capacity, opportunities to refund related debt obligations and other similar considerations.

May 19, 2020

The University of North Carolina System
Debt Capacity Study – Fiscal Year 2019

Elizabeth City State University

Institution Report

Elizabeth City State University

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), Elizabeth City State University ("*ECSU*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. ECSU has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, ECSU, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—ECSU has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, ECSU's debt capacity reflects the amount of debt ECSU could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that ECSU intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- ECSU's current debt profile, including project descriptions financed with, and the sources of repayment for, ECSU's outstanding debt;
- ECSU's current credit profile, along with recommendations for maintaining or improving ECSU's credit rating; and
- A copy of any ECSU debt management policy currently in effect.

Overview of ECSU

For the fall 2018 semester, ECSU had a headcount student population of approximately 1,677, including 1,636 undergraduate students and 41 graduate and doctoral students. ECSU employs approximately 124 full-time, part-time and temporary instructional faculty.

ECSU's enrollment has declined 10% over the previous five years but seen significant increases beginning with the Fall 2017 incoming class. ECSU's average age of plant (16.43 years) is higher than the median ratio for all institutions (14.53 years). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs.

ECSU anticipates incurring approximately $10 million in additional debt during the Study period, as summarized in Section 3 below.

ECSU has made no changes to the financial model's standard growth assumptions for the duration of the Study Period, which are based on the Consumer Price Index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Outstanding debt service is based on ECSU's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to ECSU by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt ECSU expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below may overstate ECSU's current debt burden.

1	2	3	4	5	6
		Obligated Resources			
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	2,753,167	7,232,487	-		9,985,654
2016	6,861,024	5,538,864	-	24.18%	12,399,888
2017	6,113,968	5,179,254	-	-8.92%	11,293,222
2018	(48,531,378)	4,843,755	53,437,332	-13.67%	9,749,709
2019	(45,810,694)	4,428,382	50,606,572	-5.39%	9,224,260
2020	9,381,072	-	-	1.70%	9,381,072
2021	9,540,551	-	-	1.70%	9,540,551
2022	9,702,740	-	-	1.70%	9,702,740
2023	9,867,687	-	-	1.70%	9,867,687
2024	10,035,437	-	-	1.70%	10,035,437

		Operating Expenses			
Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	60,724,158	1,232,478	-		61,956,636
2016	57,754,471	1,696,041	-	-4.04%	59,450,512
2017	55,896,903	361,648	-	-5.37%	56,258,550
2018	60,193,391	337,227	694,773	8.83%	61,225,391
2019	61,327,611	420,817	2,859,309	5.52%	64,607,737
2020	65,706,068	-	-	1.70%	65,706,068
2021	66,823,072	-	-	1.70%	66,823,072
2022	67,959,064	-	-	1.70%	67,959,064
2023	69,114,368	-	-	1.70%	69,114,368
2024	70,289,312	-	-	1.70%	70,289,312

7	8	9	10	11
		Outstanding Debt		
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	140,000	577,896	717,896	14,490,000
2021	145,000	660,725	805,725	14,345,000
2022	75,000	655,550	730,550	14,270,000
2023	140,000	651,425	791,425	14,130,000
2024	645,000	645,225	1,290,225	13,485,000
2025	680,000	612,550	1,292,550	12,805,000
2026	715,000	578,100	1,293,100	12,090,000
2027	745,000	541,875	1,286,875	11,345,000
2028	675,000	504,125	1,179,125	10,670,000
2029	715,000	470,375	1,185,375	9,955,000
2030	745,000	434,625	1,179,625	9,210,000
2031	785,000	397,375	1,182,375	8,425,000
2032	805,000	374,806	1,179,806	7,620,000
2033	825,000	350,656	1,175,656	6,795,000
2034	850,000	324,875	1,174,875	5,945,000
2035	880,000	297,250	1,177,250	5,065,000
2036	920,000	253,250	1,173,250	4,145,000
2037	965,000	207,250	1,172,250	3,180,000
2038	1,010,000	159,000	1,169,000	2,170,000
2039	1,060,000	108,500	1,168,500	1,110,000
2040	1,110,000	55,500	1,165,500	-
2041			-	-
2042			-	-
2043			-	-

Notes

- Expendable Resources equals Unrestricted Net Assets plus Restricted, Expendable Net Assets plus Foundation Unrestricted Net Assets plus Foundation Temporarily Restricted Net Assets minus Restricted, Expendable Net Assets Restricted for Capital Projects.
- Unrestricted Net Assets has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projection period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	1,720,155	11,725,158	-	-	743,197		7,232,487	19,934,604
2016	2,012,754	11,939,669	-	-	1,837,413	-11.44%	5,538,864	17,653,874
2017	1,294,199	12,448,952	-	-	1,888,982	-3.51%	5,179,254	17,033,424
2018	(54,410,648)	13,433,567	-	-	2,853,137	-16.00%	58,138,089	14,307,872
2019	(53,869,796)	12,501,345			2,235,023	-20.10%	55,034,954	11,431,480
2020	1,184,966	12,713,867	-	-	2,273,018	1.70%	-	11,625,815
2021	1,205,110	12,930,003	-	-	2,311,660	1.70%	-	11,823,454
2022	1,225,597	13,149,813	-	-	2,350,958	1.70%	-	12,024,452
2023	1,246,432	13,373,360	-	-	2,390,924	1.70%	-	12,228,868
2024	1,267,621	13,600,707	-	-	2,431,570	1.70%	-	12,436,759

3. Proposed Debt Financings

The table below summarizes any legislatively approved projects that ECSU expects to finance during the Study Period. Using the assumptions outlined in the table below, the model has developed a tailored, but conservative, debt service schedule for each proposed financing and incorporated each pro forma debt service schedule into its calculations of the financial ratios as detailed in Section 4 of this Institution Report.

ECSU Proposed Debt Financings

Year	Use of Funds	Borrowing Amount	Term	Source of Repayment
2020	Demolition of Hugh Cale and Doles Halls	611,294	24	Housing Revenues
2020	Update Master Plan	750,000	24	Housing Revenues
2020	Renovation of Bias Hall	8,638,706	24	Housing Revenues
Total		10,000,000		

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** ECSU's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

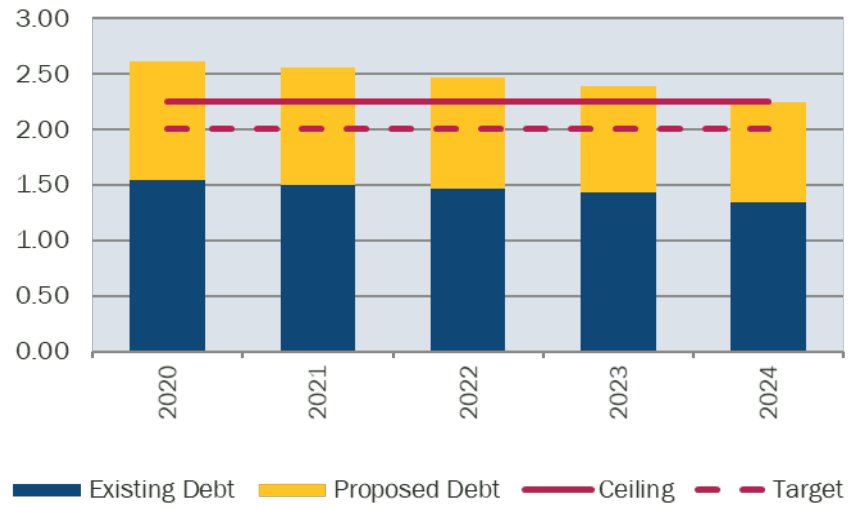
- Target Ratio: 2.00
- Ceiling Ratio: Not to exceed 2.25
- Projected 2020 Ratio: 2.61
- Highest Study Period Ratio: 2.61 (2020)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	9,381,072	1.70%	14,490,000	10,000,000	1.54	1.07	2.61
2021	9,540,551	1.70%	14,345,000	10,000,000	1.50	1.05	2.55
2022	9,702,740	1.70%	14,270,000	9,708,056	1.47	1.00	2.47
2023	9,867,687	1.70%	14,130,000	9,406,039	1.43	0.95	2.39
2024	10,035,437	1.70%	13,485,000	9,093,603	1.34	0.91	2.25

Debt to Obligated Resources



5-Year Payout Ratio Overview

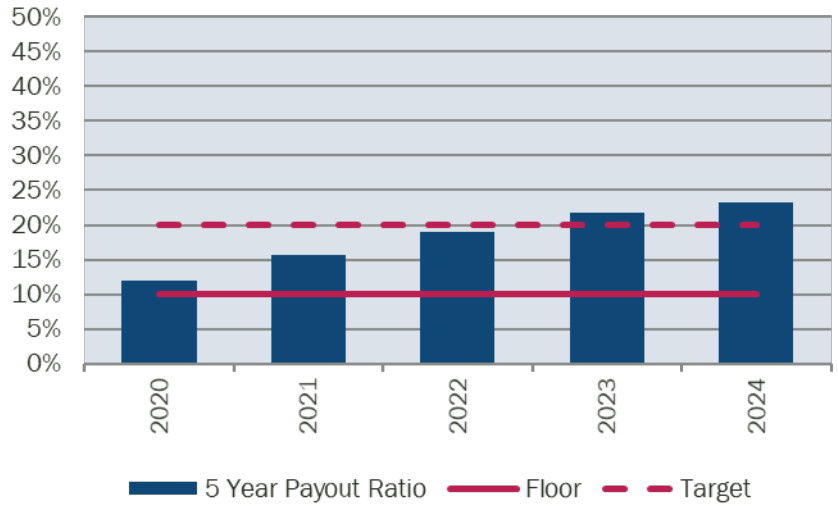
- **What does it measure?** The percentage of ECSU's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

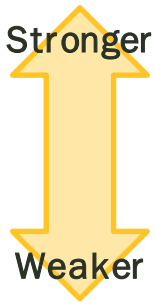
- Target Ratio: 20%
- Floor Ratio: Not less than 10%
- Projected 2020 Ratio: 12%
- Lowest Study Period Ratio: 12% (2020)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	24,490,000	12%
2021	24,345,000	16%
2022	23,978,056	19%
2023	23,536,039	22%
2024	22,578,603	23%

5-Year Payout Ratio





Expendable Resources to Debt

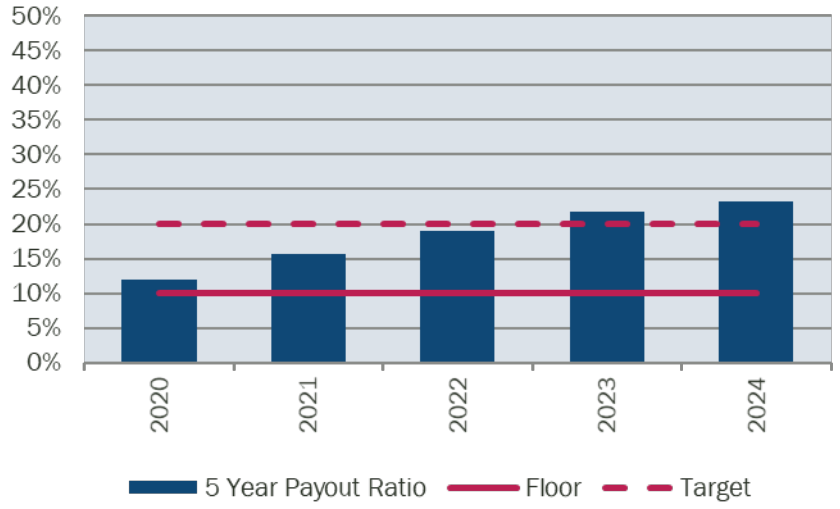
- **What does it measure?** The number of times ECSU's liquid and expendable net assets covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Assets and (2) Restricted Expendable Net Assets divided by aggregate debt

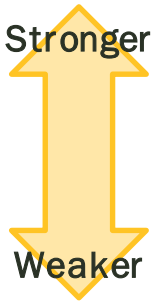
- Floor Ratio: Not less than 0.50x
- Projected 2020 Ratio: 0.47x
- Lowest Study Period Ratio: 0.47x (2020)

Expendable Resources to Debt

1	2	3	4	5	6	7
Expendable Resources to Debt						
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	11,625,815	1.70%	14,490,000	10,000,000	0.80	0.47
2021	11,823,454	1.70%	14,345,000	10,000,000	0.82	0.49
2022	12,024,452	1.70%	14,270,000	9,708,056	0.84	0.50
2023	12,228,868	1.70%	14,130,000	9,406,039	0.87	0.52
2024	12,436,759	1.70%	13,485,000	9,093,603	0.92	0.55

Expendable Resources to Debt





Debt Service to Operating Expenses

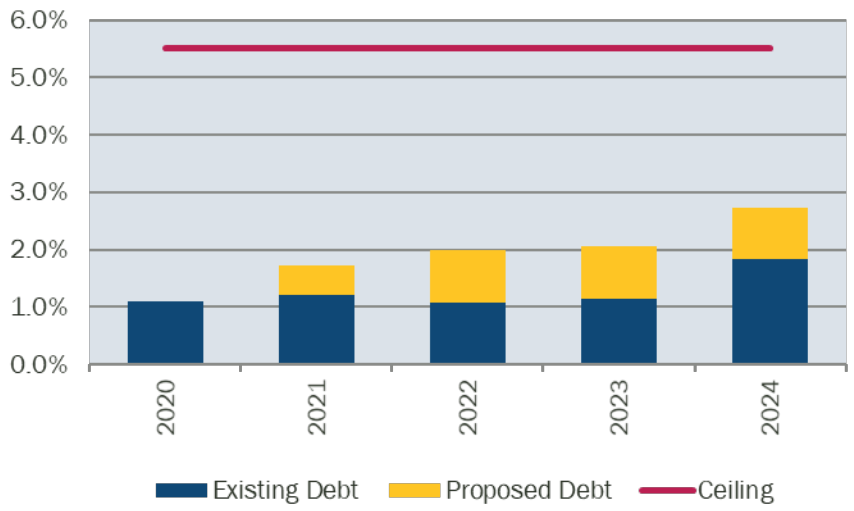
- **What does it measure?** ECSU's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

- Policy Ratio: Not to exceed 5.50%
- Projected 2020 Ratio: 2.73%
- Highest Study Period Ratio: 2.73% (2024)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	65,706,068	1.70%	717,896	-	1.09%	n/a	1.09%
2021	67,168,072	1.70%	805,725	345,000	1.20%	0.51%	1.71%
2022	68,304,064	1.70%	730,550	636,944	1.07%	0.93%	2.00%
2023	69,449,296	1.70%	791,425	636,944	1.14%	0.92%	2.06%
2024	70,613,820	1.70%	1,290,225	636,944	1.83%	0.90%	2.73%

Debt Service to Operating Expenses



5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, ECSU's debt capacity is based on the amount of debt ECSU could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, ECSU's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, ECSU has no current estimated debt capacity. After taking into account any legislatively approved projects detailed in **Section 3** above, if ECSU issued no additional debt until the last year of the Study Period, then ECSU's debt capacity for 2024 is projected to increase to **$1,131**.

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	2.61	2.25	(3,382,587)
2021	2.55	2.25	(2,878,761)
2022	2.47	2.25	(2,146,891)
2023	2.39	2.25	(1,333,744)
2024	2.25	2.25	1,131

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of ECSU's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" <u>does not</u> necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- Projecting the exact amount ECSU could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **<u>Use of Multiple Factors</u>**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.
  - **<u>The State's Impact</u>**
    - Historically, each Institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
    - If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.

- **Factor Interdependence**
  - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
  - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
  - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
  - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

ECSU's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

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Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 1981B	Dormitory System Revenue Bonds	140,000	10/1/2020	Wamack Hall		Housing Revenues
				Mitchell-Lewis Hall		Housing Revenues
Series 2010A	General Revenue Bonds	670,000	4/1/2027	Housing and Dining Facilities	2002B	Housing Revenues
Series 2019	General Revenue Refunding Bonds	13,820,000	4/1/2040	Viking Tower	2010B	Housing Revenues
Total		14,630,000				

7. Credit Profile

The following page provides a snapshot of ECSU's current credit ratings, along with (1) a summary of various credit factors identified in ECSU's most recent rating report and (2) recommendations for maintaining and improving ECSU's credit ratings in the future.

ECSU
ELIZABETH CITY STATE UNIVERSITY
FOUNDED 1891

Credit Profile of the University – (General Revenue)

Overview

- Moody's maintains a Baa2 rating on ECSU's general revenue bonds. The outlook is stable.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-

Non Investment Grade

Key Information Noted in Reports

Credit Strengths

- Very strong financial support from the Aaa-rated state
- Significant enrollment increases will provide increased operating appropriations from the state and more auxiliary revenue
- More favorable cost of capital with less onerous financial covenants following approval of USDA refinancing of outstanding 2003 Housing Foundation bonds

Credit Challenges

- High dependence on state appropriations which account for 59% of revenues
- Small operating scale, with $56 million in operating revenues, limits opportunities for additional spending reductions if necessary
- High dependence on availability of federal financial aid, serving a high proportion of Pell-eligible students

Recommendations & Observations

- Develop a formal debt policy to prioritize capital improvement needs in light of limited resources, including specific criteria for approving new debt financings when key financial ratios may indicate limited debt capacity.
- Continue to develop and implement strategies and policies to meet ECSU's unique challenges, including strategies to control expenses as the university scales to meet enrollment growth.

Approved by the UNC Board of Governors on May 20, 2020

8. Peer Comparison

Moody's Key Credit Ratios	Elizabeth City State University	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2018	University of Puerto Rico	Henderson State University	Wright State University	Illinois State University	
Most Senior Rating	Baa2	C	Baa2	Baa2	Baa2	Baa2
Total Debt ($, in millions)	30	597	63	76	155	107
Total Cash & Investments ($, in millions)	24	286	22	174	470	53
Operating Revenue ($, in millions)	56	1196	57	328	612	72
Operating Expenses ($, in millions)	60	1101	64	326	550	75
Market Performance Ratios						
Annual Change in Operating Revenue (%)	1.9%	-0.7%	5.9%	-4.0%	10.7%	3.4%
Operating Ratios						
Operating Cash Flow Margin (%)	3.1%	-0.7%	1.6%	7.8%	15.4%	6.4%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	0.4	0.4	0.3	0.5	0.9	0.6
Total Debt to Operating Expenses (x)	0.5	0.5	1.0	0.2	0.3	1.4
Monthly Days Cash on Hand (x)	75	63	6	52	215	115
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	0.8	0.7	0.3	2.3	3.0	0.4
Debt Service to Operating Expenses (%)	5.6%	5.2%	8.1%	3.2%	2.5%	6.4%
Total Debt-to-Cash Flow (x)	17.0	3.5	69.0	3.0	1.6	42.2

9. Debt Management Policies

ECSU's debt management policy is anticipated to be completed by June 2020.

May 19, 2020

The University of North Carolina System Debt Capacity Study – Fiscal Year 2019

Fayetteville State University

Institution Report

Fayetteville State University

[Type here]

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "***Act***"), Fayetteville State University ("***FSU***") has submitted this report (this "***Institution Report***") as part of the annual debt capacity study (the "***Study***") undertaken by The University of North Carolina (the "***University***") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. FSU has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, FSU, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—FSU has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, FSU's debt capacity reflects the amount of debt FSU could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that FSU intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- FSU's current debt profile, including project descriptions financed with, and the sources of repayment for, FSU's outstanding debt;
- FSU's current credit profile, along with recommendations for maintaining or improving FSU's credit rating; and
- A copy of any FSU debt management policy currently in effect.

Overview of FSU

For the fall 2018 semester, FSU had a headcount student population of approximately 6,318, including 5,473 undergraduate students and 845 graduate and doctoral students. FSU employed approximately 315 full-time, part-time and temporary instructional faculty for the 2018-19 academic year.

Over the past five years, FSU's enrollment has increased 7%. FSU's average age of plant (14.44 years) is lower than the median ratio for all institutions (14.53 years). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs.

FSU does not anticipate significant additional borrowings during the Study period.

FSU has made no changes to the financial model's standard growth assumptions, which are based on the consumer price index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Outstanding debt service is based on FSU's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to FSU by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt FSU expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below may overstate FSU's current debt burden.

Obligated Resources

1	2	3	4	5	6
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	22,953,182	8,711,219	-		31,664,401
2016	19,158,471	6,384,292	-	-19.33%	25,542,762
2017	22,679,002	6,308,260	-	13.49%	28,987,262
2018	(96,161,998)	7,522,665	119,850,968	7.67%	31,211,635
2019	(102,038,811)	8,621,417	115,635,037	-28.82%	22,217,643
2020	22,595,343	-	-	1.70%	22,595,343
2021	22,979,463	-	-	1.70%	22,979,463
2022	23,370,114	-	-	1.70%	23,370,114
2023	23,767,406	-	-	1.70%	23,767,406
2024	24,171,452	-	-	1.70%	24,171,452

Operating Expenses

Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	109,576,373	1,645,695	-		111,222,069
2016	106,847,885	2,245,747	-	-1.91%	109,093,632
2017	114,019,260	242,346	-	4.74%	114,261,606
2018	118,979,737	(907,886)	668,689	3.92%	118,740,540
2019	119,814,058	(1,095,127)	4,216,602	3.53%	122,935,533
2020	125,025,437	-	-	1.70%	125,025,437
2021	127,150,869	-	-	1.70%	127,150,869
2022	129,312,434	-	-	1.70%	129,312,434
2023	131,510,746	-	-	1.70%	131,510,746
2024	133,746,428	-	-	1.70%	133,746,428

Outstanding Debt

7	8	9	10	11
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	1,543,000	2,236,683	3,779,683	48,902,000
2021	1,609,000	2,185,326	3,794,326	47,293,000
2022	1,681,000	2,130,883	3,811,883	45,612,000
2023	1,663,000	2,073,543	3,736,543	43,949,000
2024	1,531,000	2,015,339	3,546,339	42,418,000
2025	1,608,000	1,959,481	3,567,481	40,810,000
2026	1,695,000	1,899,967	3,594,967	39,115,000
2027	1,778,000	1,836,298	3,614,298	37,337,000
2028	1,866,000	1,768,330	3,634,330	35,471,000
2029	1,960,000	1,692,338	3,652,338	33,511,000
2030	2,064,000	1,607,719	3,671,719	31,447,000
2031	2,184,000	1,518,225	3,702,225	29,263,000
2032	2,300,000	1,423,182	3,723,182	26,963,000
2033	2,426,000	1,322,475	3,748,475	24,537,000
2034	2,557,000	1,215,955	3,772,955	21,980,000
2035	1,890,000	1,114,563	3,004,563	20,090,000
2036	2,015,000	1,018,781	3,033,781	18,075,000
2037	2,145,000	916,644	3,061,644	15,930,000
2038	2,275,000	807,906	3,082,906	13,655,000
2039	2,415,000	692,563	3,107,563	11,240,000
2040	2,570,000	570,106	3,140,106	8,670,000
2041	2,725,000	439,775	3,164,775	5,945,000
2042	2,885,000	301,569	3,186,569	3,060,000
2043	3,060,000	155,231	3,215,231	-

*FSU has reviewed and changed the manner in which it calculates Available Funds, which resulted in the decline in Available Funds from fiscal year 2015 to 2017.

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Unrestricted Net Position plus Foundation Temporarily Restricted Net Position minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projected period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	(2,285,760)	14,576,816	-	-	914,082		8,711,219	20,088,192
2016	1,647,554	12,895,520	-	-	1,389,090	-2.74%	6,384,292	19,538,275
2017	2,295,945	12,948,068	-	-	1,551,978	2.36%	6,308,260	20,000,294
2018	(120,376,947)	21,308,599	-	-	7,635,600	1.68%	127,040,663	20,336,715
2019	(123,130,955)	22,937,907			8,249,707	-22.24%	124,256,454	15,813,699
2020	1,144,632	23,327,852	-	-	8,389,952	1.70%	-	16,082,532
2021	1,164,091	23,724,425	-	-	8,532,581	1.70%	-	16,355,935
2022	1,183,881	24,127,741	-	-	8,677,635	1.70%	-	16,633,986
2023	1,204,007	24,537,912	-	-	8,825,155	1.70%	-	16,916,764
2024	1,224,475	24,955,057	-	-	8,975,183	1.70%	-	17,204,349

3. Proposed Debt Financings

While FSU evaluates its capital investment needs on a regular basis, FSU currently has no legislatively approved projects that it anticipates financing during the Study Period.

4. Financial Ratios

Debt to Obligated Resources

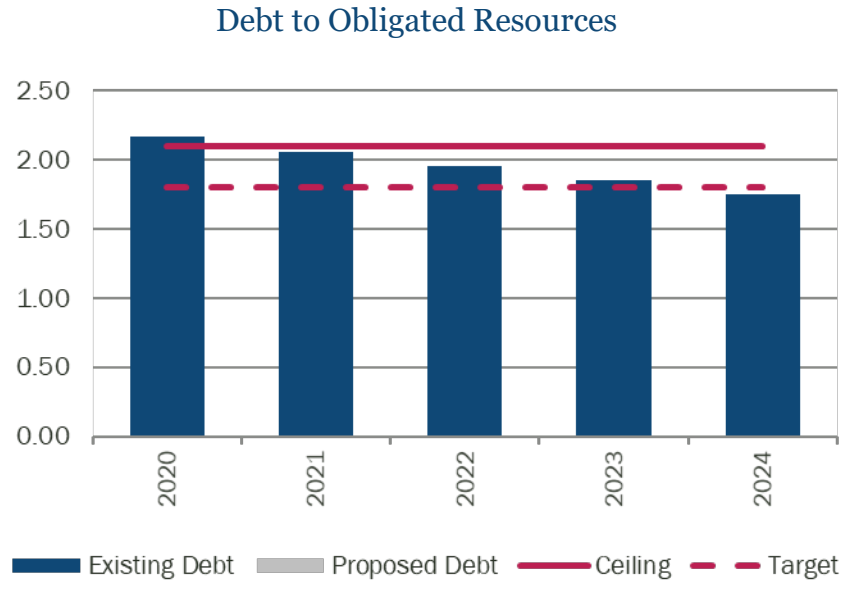
- **What does it measure?** FSU's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

- Target Ratio: 1.80
- Ceiling Ratio: Not to exceed 2.10
- Projected 2020 Ratio: 2.16
- Highest Study Period Ratio: 2.16 (2020)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
				Debt to Obligated Resources			
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	22,595,343	1.70%	48,902,000	-	2.16	n/a	2.16
2021	22,979,463	1.70%	47,293,000	-	2.06	n/a	2.06
2022	23,370,114	1.70%	45,612,000	-	1.95	n/a	1.95
2023	23,767,406	1.70%	43,949,000	-	1.85	n/a	1.85
2024	24,171,452	1.70%	42,418,000	-	1.75	n/a	1.75



5-Year Payout Ratio Overview

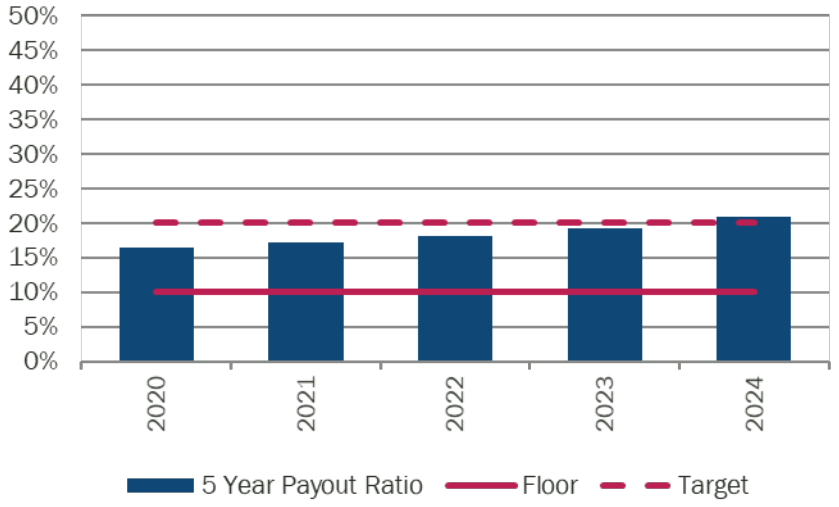
- **What does it measure?** The percentage of FSU's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

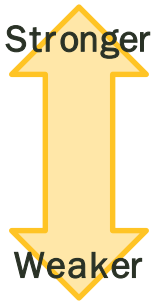
- Target Ratio: 20%
- Floor Ratio: Not less than 10%
- Projected 2019 Ratio: 16%
- Lowest Study Period Ratio: 16% (2019)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	48,902,000	17%
2021	47,293,000	17%
2022	45,612,000	18%
2023	43,949,000	19%
2024	42,418,000	21%

5-Year Payout Ratio





Expendable Resources to Debt

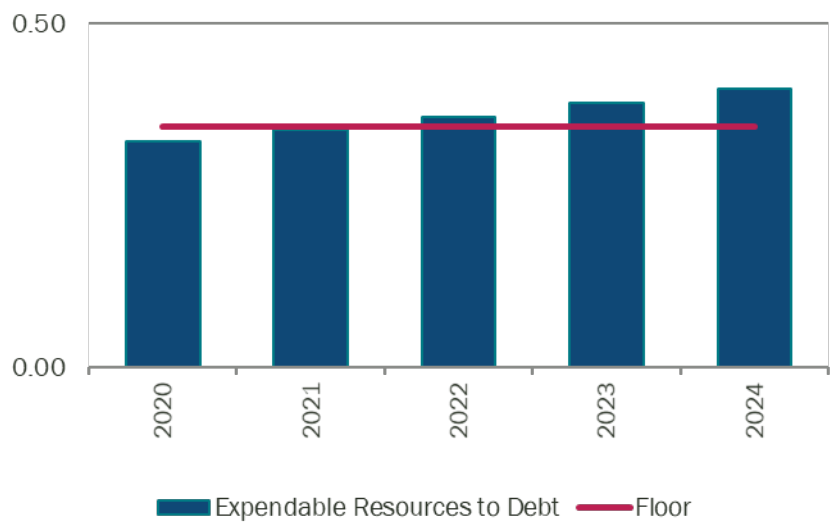
- **What does it measure?** The number of times FSU's liquid and expendable net position covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

- Floor Ratio: Not less than 0.35x
- Projected 2019 Ratio: 0.41x
- Lowest Study Period Ratio: 0.41x (2019)

Expendable Resources to Debt

1	2	3	4	5	6	7
			Expendable Resources to Debt			
Fiscal Year	Expendable Resources	Growth	Existing Bal.	Proposed Bal.	Existing Debt	Existing & Proposed Debt
2020	16,082,532	1.70%	48,902,000	-	0.33	0.33
2021	16,355,935	1.70%	47,293,000	-	0.35	0.35
2022	16,633,986	1.70%	45,612,000	-	0.36	0.36
2023	16,916,764	1.70%	43,949,000	-	0.38	0.38
2024	17,204,349	1.70%	42,418,000	-	0.41	0.41

Expendable Resources to Debt



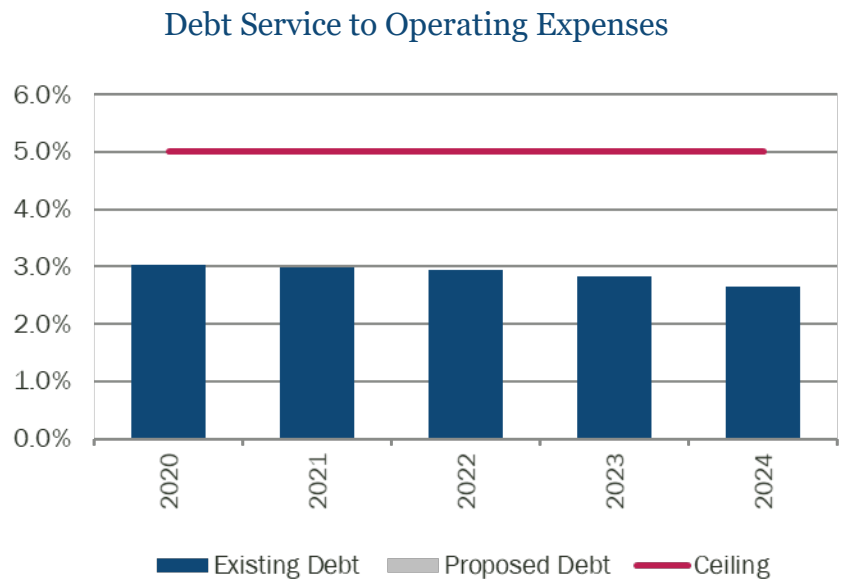
Debt Service to Operating Expenses

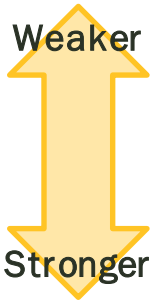
- **What does it measure?** FSU's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

- Policy Ratio: Not to exceed 5.00%
- Projected 2020 Ratio: 3.02%
- Highest Study Period Ratio: 3.02% (2020)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
			Debt Service to Operating Expenses				
Fiscal Year	Operating Expenses	Growth	Existing DS	Proposed DS	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	125,025,437	1.70%	3,779,683	-	3.02%	n/a	3.02%
2021	127,150,869	1.70%	3,794,326	-	2.98%	n/a	2.98%
2022	129,312,434	1.70%	3,811,883	-	2.95%	n/a	2.95%
2023	131,510,746	1.70%	3,736,543	-	2.84%	n/a	2.84%
2024	133,746,428	1.70%	3,546,339	-	2.65%	n/a	2.65%





5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, FSU's debt capacity is based on the amount of debt FSU could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, FSU's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, FSU's current estimated debt capacity is exhausted**.** After taking into account any legislatively approved projects detailed in **Section 3** above, if FSU issued no additional debt until the last year of the Study Period, then FSU's debt capacity for 2024 is projected to increase to **$8,342,050.**

1	2	3	4
		Debt Capacity Calculation	
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	2.16	2.10	(1,451,780)
2021	2.06	2.10	963,873
2022	1.95	2.10	3,465,240
2023	1.85	2.10	5,962,553
2024	1.75	2.10	8,342,050

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of FSU's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" does not necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- **If FSU were to use all of its calculated debt capacity during the Study Period, FSU's credit ratings may face significant downward pressure**.
- Projecting the exact amount FSU could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **Use of Multiple Factors**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.

- **The State's Impact**
  - In assessing each institution's credit rating, rating agencies also consider the State's credit rating and demographic trends, the health of its pension system, the level of support it has historically provided to the institution, and any legislation or policies affecting campus operations.
  - Historically, each institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
  - If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.
- **Factor Interdependence**
  - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
  - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
  - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
  - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

FSU's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 2011	Limited Obligation Bonds	18,685,000	4/1/2043	Renaissance Hall Student Housing Project		Housing Revenues
Series 2013A	General Revenue Bonds	20,785,000	4/1/2043	Rudolph Jones Student Center Renovation		Debt Service Fee
Series 2013B	Taxable General Revenue Bonds	545,000	4/1/2021	Rudolph Jones Student Center Renovation		Debt Service Fee
Series 2015	Taxable General Revenue Refunding Bond	789,000	4/1/2023	Dining Facilities Renovation	2005	Meal Plan Fee
Series 2017	Student Housing Facilities Revenue Refunding Bond	9,641,000	11/1/2033	University Place Apartments	2001	Housing Revenues
Total		50,445,000				

Approved by the UNC Board of Governors on May 20, 2020

7. Credit Profile

The following page provides a snapshot of FSU's current credit ratings, along with (1) a summary of various credit factors identified in FSU's most recent rating report and (2) recommendations for maintaining and improving FSU's credit ratings in the future.

Credit Profile of the University – (General Revenue)

Overview

- Standard and Poor's maintains an A- rating on FSU's general revenue bonds. The outlook is stable.
- Fitch maintains an A+ rating on FSU's general revenue bonds. The outlook is stable.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-
Non Investment Grade		

Key Information Noted in Reports

Credit Strengths

- Substantial operating and capital support from the state of North Carolina
- Stabilized full-time enrollment given the success of the strategic initiatives, and slight growth in headcount for fall 2015
- Moderate MADS burden of 4.1% relative to fiscal 2015 operating expenses

Credit Challenges

- Low level of adjusted UNA relative to expenses and debt
- Operating performance that is balanced on a cash basis but variable on full-accrual basis
- Off-campus competition for housing, with three alternatives in close proximity to campus

Recommendations & Observations

- Continue to develop and implement strategies and policies to meet FSU's unique challenges, including strategies to stabilize and improve enrollment and revenue.

8. Peer Comparison

Moody's Key Credit Ratios	Fayetteville State University	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2019	Northwest Missouri State University	Murray State University	New Jersey City State University	Fort Lewis College	
Most Senior Rating	A3*	A3	A2	Baa1	A2	A3
Total Debt ($, in millions)	59	62	76	214	48	34
Total Cash & Investments ($, in millions)	44	108	262	37	57	52
Operating Revenue ($, in millions)	83	119	183	150	74	58
Operating Expenses ($, in millions)	120	108	183	160	74	55
Market Performance Ratios						
Annual Change in Operating Revenue (%)	-6.4%	2.9%	0.2%	-0.8%	2.9%	-2.4%
Operating Ratios						
Operating Cash Flow Margin (%)	8.4%	22.1%	7.8%	3.9%	13.5%	11.0%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	0.4	1.0	1.4	0.2	0.8	0.7
Total Debt to Operating Expenses (x)	0.5	0.6	0.4	1.3	0.6	0.6
Monthly Days Cash on Hand (x)	17	263	197	53	179	136
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	0.7	1.8	3.5	0.0	1.2	1.5
Debt Service to Operating Expenses (%)	4.0%	6.5%	3.4%	11.5%	5.3%	5.1%
Total Debt-to-Cash Flow (x)	8.5	2.4	5.3	36.7	4.8	4.6

*Note: Moody's does not currently provide a credit rating for FSU. An estimated rating is provided in the table above.

9. Debt Management Policies

FSU's current debt policy is included in the following pages.

Debt Management Policy

Fayetteville State University

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Introduction

Fayetteville State University ("FSU") views its debt capacity as a limited resource that should be used, when appropriate, to help fund the capital investments necessary for the successful implementation of FSU's strategic vision to be a leading institution of opportunity and diversity committed to developing learned and responsible global citizens. FSU recognizes the important role that debt-related strategies may play as it makes the necessary investments in its infrastructure in order to become and remain the destination institution for dedicated students seeking challenging academic programs, engaged faculty and a vibrant campus culture.

This Policy has been developed to assist FSU's efforts to manage its debt on a long-term, portfolio basis and in a manner consistent with FSU's stated policies, objectives and core values. Like other limited resources, FSU's debt capacity should be used and allocated strategically and equitably.

Specifically, the objective of this Policy is to provide a framework that will enable FSU's Board of Trustees (the "Board") and finance staff to:

(i) Identify and prioritize projects eligible for debt financing;

(ii) Limit and manage risk within FSU's debt portfolio;

(iii) Establish debt management guidelines and quantitative parameters for evaluating FSU's financial health, debt affordability and debt capacity;

(iv) Manage and protect FSU's credit profile in order to maintain FSU's credit rating at a strategically optimized level and maintain access to the capital markets; and

(v) Ensure FSU remains in compliance with all of its post-issuance obligations and requirements.

This Policy is intended solely for FSU's internal planning purposes. The Vice Chancellor for Business and Finance will review this Policy annually and, if necessary, recommend changes to ensure that it remains consistent with University's strategic objectives and the evolving demands and accepted practices of the public higher education marketplace. Proposed changes to this Policy are subject to the Board's approval.

2. Authorization and Oversight

FSU's Vice Chancellor for Business and Finance is responsible for the day-to-day management of FSU's financial affairs in accordance with the terms of this Policy and for all of FSU's debt financing activities. Each University financing will conform to all applicable State and Federal laws.

The Board will consider for approval each proposed financing in accordance with the requirements of any applicable State law.

3. Process for Identifying and Prioritizing Capital Projects Requiring Debt

Only projects that directly or indirectly relate to the mission of FSU will be considered for debt financing.

(i) Self-Liquidating Projects – A project that has a related revenue stream (self-liquidating project) will receive priority consideration. Each self-liquidating project financing must be supported by an achievable plan of finance that provides, or identifies sources of funds, sufficient to (1) service the debt associated with the project, (2) pay for any related infrastructure improvements, (3) cover any new or increased operating costs and (4) fund appropriate reserves for anticipated replacement and renovation costs.

(ii) Energy Conservation Projects – Each energy conservation project financing must provide annual savings sufficient to service the applicable debt and all related monitoring costs.

(iii) Other Projects – Other projects funded through budgetary savings, gifts and grants will be considered on a case-by-case basis. Any projects that will require gift financing or include a gift financing component must be jointly approved by the Vice Chancellor for Business and Finance and the Foundation Assistant before any project-restricted donations are solicited. The fundraising goal for any project to be financed primarily with donations should also include, when feasible, an appropriately-sized endowment for deferred maintenance and other ancillary ownership costs. In all cases, institutional strategy, and not donor capacity, must drive the decision to pursue any proposed project.

4. Benchmarks and Debt Ratios

Overview

When evaluating its current financial health and any proposed plan of finance, FSU takes into account both its debt affordability and its debt capacity. Debt affordability focuses on FSU's cash flows and measures FSU's ability to service its debt through its operating budget and identified revenue streams. Debt capacity, on the other hand, focuses on the relationship between FSU's net assets and its total debt outstanding.

Debt capacity and affordability are impacted by a number of factors, including FSU's enrollment trends, reserve levels, operating performance, ability to generate additional revenues to support debt service, competing capital improvement or programmatic needs, and general market conditions. Because of the number of potential variables, FSU's debt capacity cannot be calculated based on any single ratio or even a small handful of ratios.

FSU believes, however, that it is important to consider and monitor objective metrics when evaluating FSU's financial health and its ability to incur additional debt. To that end, FSU has identified three key financial ratios that it will use to assess its ability to absorb additional debt based on its current and projected financial condition:

(i) Debt to Obligated Resources

(ii) Expendable Resources to Debt

(iii) Debt Service to Operating Expenses

Note that the selected financial ratios are also monitored as part of the debt capacity study for The University of North Carolina delivered each year under Article 5 of Chapter 116D of the North Carolina General Statutes (the "UNC Debt Capacity Study"), which FSU believes will promote clarity and consistency in FSU's debt management and planning efforts.

FSU has established for each ratio a floor or ceiling target, as the case may be, with the expectation that FSU will operate within the parameters of those ratios most of the time. To the extent possible, the policy ratios established from time to time in this Policy should align with the ratios used in the report FSU submits each year as part of the UNC Debt Capacity Study. The policy ratios have been established to help preserve FSU's financial health and operating flexibility and to ensure FSU is able to access the market to address capital needs or to take advantage of potential refinancing opportunities. Attaining or maintaining a specific credit rating is not an objective of this Policy.

FSU recognizes that the policy ratios, while helpful, have limitations and should not be viewed in isolation of FSU's strategic plan or other planning tools. In accordance with the recommendations set forth in the initial UNC Debt Capacity Study delivered April 1, 2016, FSU has developed as part of this Policy specific criteria for evaluating and, if warranted, approving critical infrastructure projects even when FSU has limited debt capacity as calculated by the UNC Debt Capacity Study or the benchmark ratios in this Policy. In such instances, the Board may approve the issuance of debt with respect to a proposed project based on one or more of the following findings:

(i) The proposed project would generate additional revenues (including, if applicable, dedicated student fees or grants) sufficient to support the financing, which revenues are not currently captured in the benchmark ratios.

(ii) The proposed project would be financed entirely with private donations based on pledges already in hand.

(iii) The proposed project is essential to the implementation of one of the Board's strategic priorities.

(iv) The proposed project addresses life and safety issues or addresses other critical infrastructure needs.

(v) Foregoing or delaying the proposed project would result in significant additional costs to FSU or would negatively impact FSU's credit rating.

At no point, however, should FSU intentionally operate outside an established policy ratio without conscious and explicit planning.

Ratio 1 – Debt to Obligated Resources

What does it measure? FSU's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt under the General Revenue Bond Statutes

Why is it tracked? The ratio, which is based on the legal structure proscribed by the General Revenue Bond Statutes, provides a general indication of FSU's ability to absorb debt on its balance sheet and is the primary ratio used to calculate FSU's "debt capacity" under the methodology used in the UNC Debt Capacity Study

How is it calculated? Aggregate debt divided by obligated resources*

Policy Ratio: Not to exceed 2.10x (UNC Debt Capacity Study Target Ratio = 1.80x)

*Available Funds, which is the concept commonly used to capture each UNC's campus's obligated resources in its loan and bond documentation, has been used as a proxy for obligated resources. The two concepts are generally identical, though

Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of FSU's obligated resources.

Ratio 2 – Expendable Resources to Debt

What does it measure? The number of times FSU's liquid and expendable net assets covers its aggregate debt

Why is it tracked? The ratio, which is widely tracked by rating agencies and other capital market participants, is a basic measure of financial health and assesses FSU's ability to settle its debt obligations using only its available net assets as of a particular date

How is it calculated? The sum of (1) Adjusted Unrestricted Net Assets and (2) Restricted Expendable Net Assets divided by aggregate debt

Policy Ratio: Not less than 0.35x

Ratio 3 – Debt Service to Operating Expenses

What does it measure? FSU's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues

Why is it tracked? The ratio, which is widely tracked by rating agencies and other capital market participants, evaluates FSU's relative cost of borrowing to its overall expenditures and provides a measure of FSU's budgetary flexibility

How is it calculated? Annual debt service divided by annual operating expenses

Policy Ratio: Not to exceed 5.00%

Reporting

The Vice Chancellor for Business and Finance will review each ratio in connection with the delivery of the University's audited financials and will provide an annual report to the Board substantially in the form of **Appendix A** detailing (1) the calculation of each ratio for that fiscal year and (2) an explanation for any ratio that falls outside the University's stated policy ratio, along with (a) any applicable recommendations, strategies and an expected timeframe for aligning such ratio with the University's stated policy or (b) the rationale for any recommended changes to any such stated policy ratio going forward (including any revisions necessitated by changes in accounting standards or rating agency methodologies).

5. Debt Portfolio Management and Transaction Structure Considerations

Generally

Numerous types of financing structures and funding sources are available, each with specific benefits, risks, and costs. Potential funding sources and structures will be reviewed and considered by the Vice Chancellor for Business and Finance within the context of this Policy and the overall portfolio to ensure that any financial product or structure is consistent with FSU's stated objectives. As part of effective debt management, FSU must

also consider its investment and cash management strategies, which influence the desired structure of the debt portfolio.

Method of Sale

FSU will consider various methods of sale on a transaction-by-transaction basis to determine which method of sale (i.e., competitive, negotiated or private placement) best serves FSU's strategic plan and financing objectives. In making that determination, FSU will consider, among other factors: (1) the size and complexity of the issue, (2) the current interest rate environment and other market factors (such as bank and investor appetite) that might affect FSU's cost of funds, and (3) possible risks associated with each method of sale (e.g., rollover risk associated with a financing that is privately placed with a bank for a committed term that is less than the term of the financing).

Tax Treatment

When feasible and appropriate for the particular project, the use of tax-exempt debt is generally preferable to taxable debt. Issuing taxable debt may reduce FSU's overall debt affordability due to higher rates but may be appropriate for projects that do not qualify for tax-exemption, or that may require interim funding. For example, taxable debt may be justified if it sufficiently mitigates FSU's ongoing administrative and compliance risks. When used, taxable debt should be structured to provide maximum repayment flexibility and rapid principal amortization.

Structure and Maturity

To the extent practicable, FSU should structure its debt to provide for level annual payments of debt service, though FSU may elect alternative structures when the Vice Chancellor for Business and Finance determines it to be in FSU's best interest. In addition, when financing projects that are expected to be self-supporting (such as a revenue-producing facility or a facility to be funded entirely through a dedicated fundraising campaign), the debt service may be structured to match future anticipated receipts.

FSU will use maturity structures that correspond with the life of the facilities financed, not to exceed 30 years. Equipment should be financed for a period not to exceed 120% of its useful life. Such determinations may be made on a blended basis, taking into account all assets financed as part of a single debt offering. As market dynamics change, maturity structures should be reevaluated. Call features should be structured to provide the highest degree of flexibility relative to cost.

Variable Rate Debt

FSU recognizes that a degree of exposure to variable interest rates within FSU's debt portfolio may be desirable in order to (1) take advantage of repayment or restructuring flexibility, (2) benefit from historically lower average interest costs and (3) provide a "match" between debt service requirements and the projected cash flows from FSU's assets. FSU's debt portfolio should be managed to ensure that no more than 20% of FSU's total debt bears interest at an unhedged variable rate.

FSU's finance staff will monitor overall interest rate exposure and will analyze and quantify potential risks, including interest rate, liquidity and rollover risks. FSU may manage the liquidity risk of variable rate debt either through its own working capital/investment portfolio, the type of instrument used, or by using third party sources of liquidity. FSU may manage interest rate risk in its portfolio through specific budget and central bank management strategies or through the use of derivative instruments.

Refunding Considerations

FSU will actively monitor its outstanding debt portfolio for refunding or restructuring opportunities. Absent a compelling economic or strategic reason to the contrary, FSU should evaluate opportunities to issue bonds for the purpose of refunding existing debt obligations of FSU ("Refunding Bonds") using the following general guidelines:

(i) The life of the Refunding Bonds should not exceed the remaining life of the bonds being refunded.

(ii) Refunding Bonds issued to achieve debt service savings should have a target savings level measured on a present net value basis of at least 3% of the par amount refunded.

(iii) Refunding Bonds that do not achieve debt service savings may be issued to restructure debt or provisions of bond documents if such refunding serves a compelling interest.

(iv) Refunding Bonds may also be issued to relieve FSU of certain limitations, covenants, payment obligations or reserve requirements that reduce operational flexibility.

6. Derivative Products

FSU recognizes that derivative products may provide for more flexible management of the debt portfolio. In certain circumstances, interest rate swaps and other derivatives permit FSU to adjust its mix of fixed- and variable-rate debt and manage its interest rate exposures. Derivatives may also be an effective way to manage liquidity risks. FSU will use derivatives only to manage and mitigate risk; FSU will not use derivatives to create leverage or engage in speculative transactions.

As with underlying debt, FSU's finance staff will evaluate any derivative product comprehensively, taking into account its potential costs, benefits and risks, including, without limitation, any tax risk, interest rate risk, liquidity risk, credit risk, basis risk, rollover risk, termination risk, counterparty risk, and amortization risk. Before entering into any derivative product, the Vice Chancellor for Business and Finance must (1) conclude, based on the advice of a reputable swap advisor, that the terms of any swap transaction are fair and reasonable under current market conditions and (2) ensure that FSU's finance staff has a clear understanding of the proposed transaction's costs, cash flow impact and reporting treatment.

FSU will use derivatives only when the Vice Chancellor for Business and Finance determines, based on the foregoing analysis, that the instrument provides the most effective method for accomplishing FSU's strategic objectives without imposing inappropriate risks on FSU.

May 19, 2020

The University of North Carolina System Debt Capacity Study – Fiscal Year 2019

North Carolina A&T State University

Institution Report

North Carolina A&T State University

Approved by the UNC Board of Governors on May 20, 2020

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1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), North Carolina A&T State University ("*N.C. A&T*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. N.C. A&T has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, N.C. A&T, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—N.C. A&T has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, N.C. A&T's debt capacity reflects the amount of debt N.C. A&T could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that N.C. A&T intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- N.C. A&T's current debt profile, including project descriptions financed with, and the sources of repayment for, N.C. A&T's outstanding debt;
- N.C. A&T's current credit profile, along with recommendations for maintaining or improving N.C. A&T's credit rating; and
- A copy of any N.C. A&T debt management policy currently in effect.

Overview of N.C. A&T

For the fall 2018 semester, N.C. A&T had a headcount student population of 12,142, including 10,629 undergraduate students and 1,513 graduate and doctoral students. During the 2018 academic year, N.C. A&T employed approximately 705 full-time, part-time and temporary instructional faculty.

Over the past five years, N.C. A&T's enrollment has increased approximately 13%. N.C. A&T's average age of plant (14.17 years) is lower than the median ratio for all institutions (14.53 years). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs. N.C. A&T does not anticipate significant additional borrowings during the Study period. N.C. A&T has made no changes to the financial model's standard growth assumptions, which are based on the Consumer Price Index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Outstanding debt service is based on N.C. A&T's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to N.C. A&T by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt N.C. A&T expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below may overstate N.C. A&T's current debt burden.

Obligated Resources

1	2	3	4	5	6
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	34,473,502	16,248,283	-		50,721,785
2016	71,623,591	11,902,719	-	64.68%	83,526,310
2017	71,816,337	12,649,799	-	1.13%	84,466,136
2018	(179,880,407)	14,329,939	261,855,241	14.02%	96,304,773
2019	(163,988,895)	16,138,225	249,520,134	5.57%	101,669,464
2020	103,397,845	-	-	1.70%	103,397,845
2021	105,155,608	-	-	1.70%	105,155,608
2022	106,943,254	-	-	1.70%	106,943,254
2023	108,761,289	-	-	1.70%	108,761,289
2024	110,610,231	-	-	1.70%	110,610,231

Operating Expenses

Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	246,294,140	3,734,670	-		250,028,810
2016	251,810,865	4,345,564	-	2.45%	256,156,429
2017	268,914,553	(725,974)	-	4.70%	268,188,579
2018	283,882,359	(1,659,280)	3,210,079	6.43%	285,433,158
2019	292,782,302	(1,793,901)	12,477,212	6.32%	303,465,613
2020	308,624,528	-	-	1.70%	308,624,528
2021	313,871,145	-	-	1.70%	313,871,145
2022	319,206,955	-	-	1.70%	319,206,955
2023	324,633,473	-	-	1.70%	324,633,473
2024	330,152,242	-	-	1.70%	330,152,242

Outstanding Debt

7	8	9	10	11
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	2,880,000	3,955,069	6,835,069	92,345,000
2021	2,955,000	3,883,742	6,838,742	89,390,000
2022	2,390,000	3,809,234	6,199,234	87,000,000
2023	2,465,000	3,735,725	6,200,725	84,535,000
2024	2,550,000	3,648,238	6,198,238	81,985,000
2025	2,675,000	3,533,213	6,208,213	79,310,000
2026	2,795,000	3,405,375	6,200,375	76,515,000
2027	2,925,000	3,274,384	6,199,384	73,590,000
2028	3,215,000	3,132,256	6,347,256	70,375,000
2029	3,345,000	3,005,631	6,350,631	67,030,000
2030	3,445,000	2,899,009	6,344,009	63,585,000
2031	3,560,000	2,785,469	6,345,469	60,025,000
2032	3,710,000	2,634,688	6,344,688	56,315,000
2033	3,670,000	2,450,750	6,120,750	52,645,000
2034	3,830,000	2,287,850	6,117,850	48,815,000
2035	3,505,000	2,129,075	5,634,075	45,310,000
2036	3,685,000	1,949,325	5,634,325	41,625,000
2037	3,870,000	1,760,450	5,630,450	37,755,000
2038	4,075,000	1,561,825	5,636,825	33,680,000
2039	3,570,000	1,370,700	4,940,700	30,110,000
2040	3,755,000	1,187,575	4,942,575	26,355,000
2041	3,950,000	994,950	4,944,950	22,405,000
2042	4,130,000	813,600	4,943,600	18,275,000
2043	4,300,000	645,000	4,945,000	13,975,000
2044	4,475,000	469,500	4,944,500	9,500,000
2045	4,655,000	286,900	4,941,900	4,845,000
2046	4,845,000	96,900	4,941,900	-

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Unrestricted Net Position plus Foundation Temporarily Restricted Net Position minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projection period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	17,698,430	19,891,736	5,427,290	8,239,898	-		16,248,283	67,505,638
2016	40,014,805	20,412,598	6,227,054	7,623,956	1,479,633	25.47%	11,902,719	84,701,499
2017	42,875,015	27,948,695	9,059,976	9,783,118	3,609,538	16.54%	12,649,799	98,707,065
2018	(214,666,438)	31,740,392	11,076,143	11,098,918	3,806,272	12.36%	275,465,930	110,908,673
2019	(204,003,373)	34,813,912	13,027,031	15,585,093	3,281,564	9.82%	265,658,359	121,799,458
2020	62,703,121	35,405,749	13,248,491	15,850,040	3,337,351	1.70%	-	123,870,049
2021	63,769,074	36,007,646	13,473,715	16,119,490	3,394,086	1.70%	-	125,975,840
2022	64,853,148	36,619,776	13,702,768	16,393,522	3,451,785	1.70%	-	128,117,429
2023	65,955,652	37,242,312	13,935,715	16,672,211	3,510,465	1.70%	-	130,295,425
2024	67,076,898	37,875,432	14,172,622	16,955,639	3,570,143	1.70%	-	132,510,447

3. Proposed Debt Financings

While N.C. A&T evaluates its capital investment needs on a regular basis, N.C. A&T currently has no legislatively approved projects that it anticipates financing during the Study period.

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** N.C. A&T's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

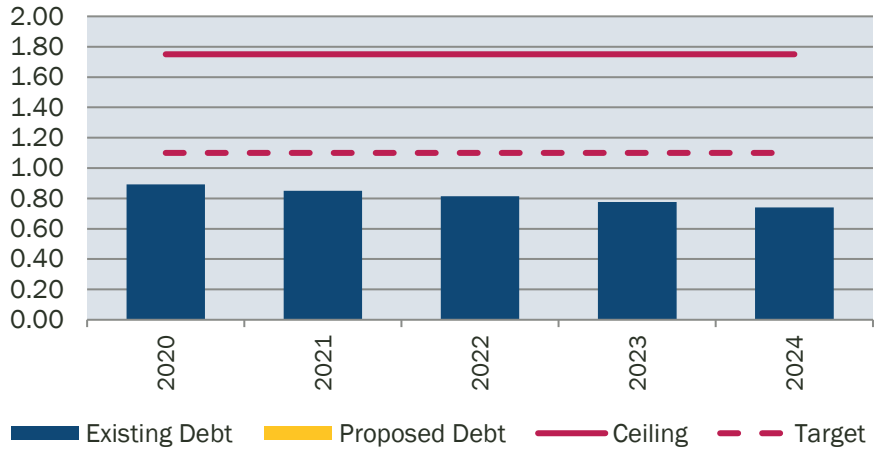
- Target Ratio: 1.10
- Ceiling Ratio: Not to exceed 1.75
- Projected 2020 Ratio: 0.89
- Highest Study Period Ratio: 0.89 (2020)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	103,397,845	1.70%	92,345,000	-	0.89	n/a	0.89
2021	105,155,608	1.70%	89,390,000	-	0.85	n/a	0.85
2022	106,943,254	1.70%	87,000,000	-	0.81	n/a	0.81
2023	108,761,289	1.70%	84,535,000	-	0.78	n/a	0.78
2024	110,610,231	1.70%	81,985,000	-	0.74	n/a	0.74

Debt to Obligated Resources



5-Year Payout Ratio Overview

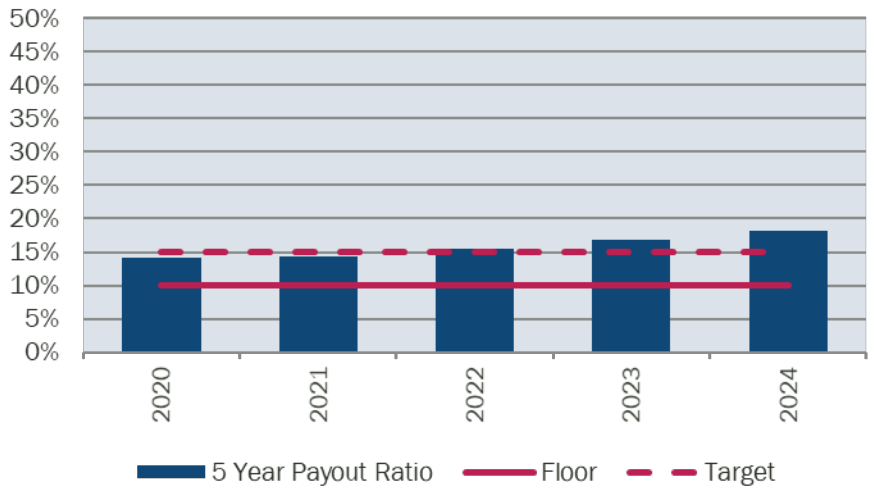
- **What does it measure?** The percentage of N.C. A&T's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

- Target Ratio: 15%
- Floor Ratio: Not less than 10%
- Projected 2020 Ratio: 14%
- Lowest Study Period Ratio: 14% (2020)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	92,345,000	14%
2021	89,390,000	14%
2022	87,000,000	15%
2023	84,535,000	17%
2024	81,985,000	18%

5-Year Payout Ratio



Expendable Resources to Debt

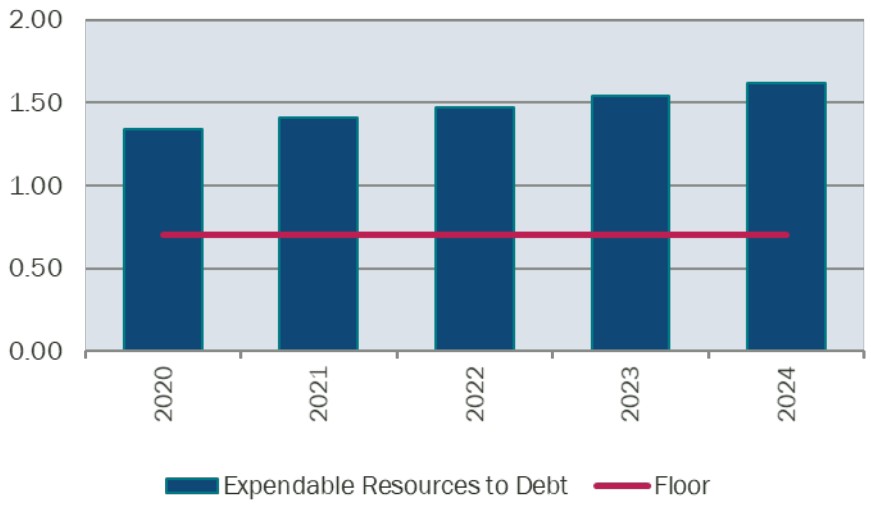
- **What does it measure?** The number of times N.C. A&T's liquid and expendable net position covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

- Floor Ratio: Not less than 0.70x
- Projected 2020 Ratio: 1.34x
- Lowest Study Period Ratio: 1.34x (2020)

Expendable Resources to Debt

1	2	3	4	5	6	7
			Expendable Resources to Debt			
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	123,870,049	1.70%	92,345,000	-	1.34	1.34
2021	125,975,840	1.70%	89,390,000	-	1.41	1.41
2022	128,117,429	1.70%	87,000,000	-	1.47	1.47
2023	130,295,425	1.70%	84,535,000	-	1.54	1.54
2024	132,510,447	1.70%	81,985,000	-	1.62	1.62

Expendable Resources to Debt



Debt Service to Operating Expenses

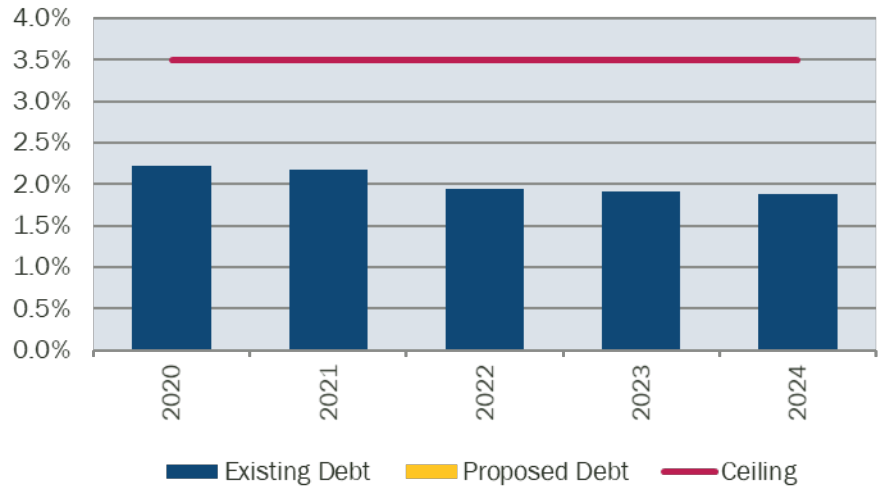
- **What does it measure?** N.C. A&T's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

- Policy Ratio: Not to exceed 3.50%
- Projected 2020 Ratio: 2.21%
- Highest Study Period Ratio: 2.21% (2020)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	308,624,528	1.70%	6,835,069	-	2.21%	n/a	2.21%
2021	313,871,145	1.70%	6,838,742	-	2.18%	n/a	2.18%
2022	319,206,955	1.70%	6,199,234	-	1.94%	n/a	1.94%
2023	324,633,473	1.70%	6,200,725	-	1.91%	n/a	1.91%
2024	330,152,242	1.70%	6,198,238	-	1.88%	n/a	1.88%

Debt Service to Operating Expenses



5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, NCAT's debt capacity is based on the amount of debt NCAT could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, NCAT's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, NCAT's current estimated debt capacity is **$786,601,229**. After taking into account any legislatively approved projects detailed in **Section 3** above, if NCAT issued no additional debt until the last year of the Study Period, then NCAT's debt capacity for 2024 is projected to increase to **$111,582,904.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	0.89	1.75	88,601,229
2021	0.85	1.75	94,632,314
2022	0.81	1.75	100,150,694
2023	0.78	1.75	105,797,256
2024	0.74	1.75	111,582,904

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of NCAT's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" does not necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- Projecting the exact amount NCAT could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **Use of Multiple Factors**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.

- **The State's Impact**
  - In assessing each institutions's credit rating, rating agencies also consider the State's credit rating and demographic trends, the health of its pension system, the level of support it has historically provided to the institution, and any legislation or policies affecting campus operations.
  - Historically, each institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
  - If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.
- **Factor Interdependence**
  - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
  - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
  - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
  - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

N.C. A&T's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 2011C	UNC System Pool Revenue Bonds	2,445,000	10/1/2031	Stadium Press Bonx		Unrestricted Auxiliary funds Allocations from Campus Enterprise operations Athletic ticket sales, press box rental receipts, and advertising Unrestricted gift income Unrestricted investment income
Series 2013	General Revenue Bonds	9,095,000	10/1/2037	Student Health Center		Unrestricted Auxiliary funds Allocations from Campus Enterprise operations Athletic ticket sales, press box rental receipts, and advertising Unrestricted gift income Unrestricted investment income
Series 2015A	General Revenue Bonds	76,835,000	10/1/2045	Student Center		Unrestricted Auxiliary funds Allocations from Campus Enterprise operations Athletic ticket sales, press box rental receipts, and advertising Unrestricted gift income Unrestricted investment income
Series 2015B	Taxable General Revenue Bonds	7,635,000	10/1/2022	Student Center Parking Deck	 2006B	Unrestricted Auxiliary funds Allocations from Campus Enterprise operations Athletic ticket sales, press box rental receipts, and advertising Unrestricted gift income Unrestricted investment income Unrestricted Auxiliary funds Allocations from Campus Enterprise operations Athletic ticket sales, press box rental receipts, and advertising Unrestricted gift income Unrestricted investment income
Series 2017	General Revenue Refunding Bond	2,010,000	10/1/2020	Parking Deck Improve and Enlarge Dining Facility	2006B 2006B	Unrestricted Auxiliary funds Allocations from Campus Enterprise operations Athletic ticket sales, press box rental receipts, and advertising Unrestricted gift income Unrestricted investment income Unrestricted Auxiliary funds Allocations from Campus Enterprise operations Athletic ticket sales, press box rental receipts, and advertising Unrestricted gift income Unrestricted investment income
Total		98,020,000				

Approved by the UNC Board of Governors on May 20, 2020

7. Credit Profile

The following page provides a snapshot of N.C. A&T's current credit ratings, along with (1) a summary of various credit factors identified in N.C. A&T's most recent rating report and (2) recommendations for maintaining and improving N.C. A&T's credit ratings in the future.

NORTH CAROLINA AGRICULTURAL AND TECHNICAL STATE UNIVERSITY

Credit Profile of the University – (General Revenue)

Overview

- Moody's maintains an A1 rating on N.C. A&T's general revenue bonds. The outlook is stable.
- Fitch maintains an A+ rating on N.C. A&T's general revenue bonds. The outlook is stable.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-

Non Investment Grade

Key Information Noted in Reports

Credit Strengths

- Market niche as a STEM focused HBCU (Historically black colleges and universities) attracting students from many states
- Total cash and investments have increased 64% since FY 2013-14
- Positive operating performance and strengthening fundraising should continue to support financial reserves
- Enrollment growth and net tuition revenue are expected to continue growing

Credit Challenges

- Absolute wealth relatively low compared to A1-rated public university median
- Low liquidity and elevated leverage compared to similarly rated peers
- Operating appropriations from the state have remained relatively flat despite enrollment growth over the past five years

Recommendations & Observations

- Pursue strategies, working within the existing statutory framework relating to reversions, to increase liquidity through growth in cash reserves.

Approved by the UNC Board of Governors on May 20, 2020

8. Peer Comparison

Moody's Key Credit Ratios	N.C. Agricultural & Technical State University	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2018	Cleveland State University	New Jersey Institute of Technology	New Mexico State University	Indiana State University	
Most Senior Rating	A1	A1	A1	A1	A1	A1
Total Debt ($, in millions)	161	277	225	155	231	113
Total Cash & Investments ($, in millions)	167	275	179	361	215	219
Operating Revenue ($, in millions)	279	301	313	464	253	250
Operating Expenses ($, in millions)	271	303	302	468	242	240
Market Performance Ratios						
Annual Change in Operating Revenue (%)	7.5%	-1.2%	8.2%	-2.9%	1.7%	2.7%
Operating Ratios						
Operating Cash Flow Margin (%)	8.4%	12.4%	12.3%	8.0%	14.1%	11.9%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	0.6	0.9	0.6	0.8	0.9	1.0
Total Debt to Operating Expenses (x)	0.6	0.9	0.7	0.3	1.0	0.5
Monthly Days Cash on Hand (x)	99	213	121	101	211	155
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	1.0	1.0	0.8	2.3	0.9	1.9
Debt Service to Operating Expenses (%)	2.7%	7.4%	5.9%	3.4%	7.2%	4.9%
Total Debt-to-Cash Flow (x)	6.9	7.4	5.9	4.2	6.5	4.9

9. Debt Management Policies

A draft of N.C. A&T's Strategic Debt Management Policy (pending approval) is included on the following pages.

NEW POLICY: Sets out the general limitations under which A&T will issue debt.

NORTH CAROLINA AGRICULTURAL AND TECHNICAL STATE UNIVERSITY

SEC. VI —FINANCE 1.0

Debt Management

UNIVERSITY POLICY

I. INTRODUCTION

North Carolina Agricultural and Technical State University ("A&T") views its debt capacity as a limited resource that should be used, when appropriate, to help fund the capital investments necessary for the successful implementation of A&T's strategic vision to provide its students a quality environment of exemplary teaching and learning, scholarly and creative research, and effective community engagement and public service within a diverse and inclusive community, while preserving the operational flexibility and resources necessary to support A&T's current and future programming. A&T recognizes the important role that the responsible stewardship of its financial resources will play as A&T seeks to invest in its campus and related infrastructure in a manner that is economically, socially, and environmentally sustainable.

This Policy has been developed to assist A&T's efforts to manage its debt on a long-term, portfolio basis and in a manner consistent with A&T's capital improvement plan, stated policies, objectives and core values. Like other limited resources, A&T's debt capacity should be used and allocated strategically and equitably, taking into account the benefits and burdens for both current and future students.

Specifically, the objective of this Policy is to provide a framework that will enable A&T's Board of Trustees (the "Board") and finance staff to:

- Identify and prioritize projects eligible for debt financing;

- Limit and manage risk within A&T's debt portfolio;

- Establish debt management guidelines and quantitative parameters for evaluating A&T's financial health, debt affordability and debt capacity;

- Manage and protect A&T's credit profile in order to maintain A&T's credit rating at a strategically optimized level and maintain access to the capital markets; and

- Ensure A&T remains in compliance with all of its post-issuance obligations and requirements.

This Policy is intended solely for A&T's internal planning purposes. The Vice Chancellor for Business and Finance, in consultation with the Chancellor, will review this Policy annually and, if necessary, recommend changes to ensure that it remains consistent with University's strategic objectives and the evolving demands and accepted practices of the public higher education marketplace. Proposed changes to this Policy are subject to the Board's approval.

II. Authorization and Oversight

A&T's Vice Chancellor for Business and Finance, in consultation with the Chancellor, is responsible for all of A&T's debt financing activities. A&T's Vice Chancellor for Business and Finance is responsible for the day-to-day management of A&T's financial affairs in accordance with the terms of this Policy. Each University financing will conform to all applicable State and Federal laws.

The Board will consider for approval each proposed financing in accordance with the requirements of any applicable State law.

A. Process for Identifying and Prioritizing Capital Projects Requiring Debt

Only projects that directly or indirectly relate to the mission of A&T will be considered for debt financing.

1. Self-Liquidating Projects_– A project that has a related revenue stream (self-liquidating project) will receive priority consideration. Each self-liquidating project financing must be supported by an achievable plan of finance that provides, or identifies sources of funds, sufficient to (1) service the debt associated with the project, (2) pay for any related infrastructure improvements, (3) cover any new or increased operating costs and (4) fund appropriate reserves for anticipated replacement and renovation costs.

2. Energy Conservation Projects_– Each energy conservation

project financing must provide annual savings sufficient to service the applicable debt and all related monitoring costs.

3. Other Projects – Other projects funded through budgetary savings, gifts and grants will be considered on a case-by-case basis. Any projects that will require gift financing or include a gift financing component must be jointly approved by the Vice Chancellor for University Advancement and the Vice Chancellor for Business and Finance before any project-restricted donations are solicited. The fundraising goal for any project to be financed primarily with donations should also include, when feasible, an appropriately-sized endowment for deferred maintenance and other ancillary ownership costs. In all cases, institutional strategy, and not donor capacity, must drive the decision to pursue any proposed project.

B. Benchmarks and Debt Ratios

Overview

When evaluating its current financial health and any proposed plan of finance, A&T takes into account both its debt affordability and its debt capacity. Debt affordability focuses on A&T's cash flows and measures A&T's ability to service its debt through its operating budget and identified revenue streams. Debt capacity, on the other hand, focuses on the relationship between A&T's net assets and its total debt outstanding.

Debt capacity and affordability are impacted by a number of factors, including A&T's enrollment trends, reserve levels, operating performance, ability to generate additional revenues to support debt service, competing capital improvement or programmatic needs, and general market conditions. Because of the number of potential variables, A&T's debt capacity cannot be calculated based on any single ratio or even a small handful of ratios.

A&T believes, however, that it is important to consider and monitor objective metrics when evaluating A&T's financial health and its ability to incur additional debt. To that end, A&T has identified four key financial ratios that it will use to assess its ability to absorb additional debt based on its current and projected financial condition:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

Note that the selected financial ratios are the same benchmarks monitored as part of the debt capacity study for The University of North Carolina delivered each year under

Article 5 of Chapter 116D of the North Carolina General Statutes (the "UNC Debt Capacity Study"), which A&T believes will promote clarity and consistency in A&T's debt management and planning efforts.

A&T has established for each ratio a floor or ceiling target, as the case may be, with the expectation that A&T will operate within the parameters of those ratios most of the time. To the extent possible, the policy ratios established from time to time in this policy should align with the ratios used in the report A&T submits each year as part of the UNC Debt Capacity Study. The policy ratios have been established to help preserve A&T's financial health and operating flexibility and to ensure A&T is able to access the market to address capital needs or to take advantage of potential refinancing opportunities. Attaining or maintaining a specific credit rating is not an objective of this policy.

A&T recognizes that the policy ratios, while helpful, have limitations and should not be viewed in isolation of A&T's strategic plan or other planning tools. In accordance with the recommendations set forth in the initial UNC Debt Capacity Study delivered April 1, 2016, A&T has developed as part of this policy specific criteria for evaluating and, if warranted, approving critical infrastructure projects even when A&T has limited debt capacity as calculated by the UNC Debt Capacity Study or the benchmark ratios in this policy. In such instances, the Board may approve the issuance of debt with respect to a proposed project based on one or more of the following findings:

- The proposed project would generate additional revenues (including, if applicable, dedicated student fees or grants) sufficient to support the financing, which revenues are not currently captured in the benchmark ratios.

- The proposed project would be financed entirely with private donations based on pledges already in hand.

- The proposed project is essential to the implementation of one of the Board's strategic priorities.

- The proposed project addresses life and safety issues or addresses other critical infrastructure needs.

- Foregoing or delaying the proposed project would result in significant additional costs to A&T or would negatively impact A&T's credit rating.

At no point, however, should A&T intentionally operate outside an established policy ratio without conscious and explicit planning.

Ratio 1 – Debt to Obligated Resources

What does it measure? A&T's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service

	its debt under the General Revenue Bond Statutes
Why is it tracked?	The ratio, which is based on the legal structure proscribed by the General Revenue Bond Statutes, provides a general indication of A&T's ability to absorb debt on its balance sheet and is the primary ratio used to calculate A&T's "debt capacity" under the methodology used in the UNC Debt Capacity Study
How is it calculated?	Aggregate debt* divided by obligated resources**
Policy Ratio:	Not to exceed 1.75x (UNC Debt Capacity Study Target Ratio = 1.50x)

* As used throughout this Policy, "aggregate debt" includes A&T's energy savings contracts, which, in accordance with State law, are excluded from the UNC Debt Capacity Study.

* "Available Funds," which is the concept commonly used to capture each UNC's campus's obligated resources in its loan and bond documentation, has been used as a proxy for "obligated resources." The two concepts are generally identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of A&T's obligated resources.

Ratio 2 – Five-Year Payout Ratio Overview

What does it measure?	The percentage of A&T's debt scheduled to be retired in the next five years
Why is it tracked?	The ratio measures how aggressively A&T is amortizing its debt and is a ratio that is monitored in the UNC Debt Capacity
How is it calculated?	Aggregate principal to be paid in the next five years divided by aggregate debt
Policy Ratio:	Not less than 10% (UNC Debt Capacity Study Target Ratio = 15%)

Ratio 3 – Expendable Resources to Debt

What does it measure?	The number of times A&T's liquid and expendable net assets covers its aggregate debt
Why is it tracked?	The ratio, which is widely tracked by rating agencies and other capital market participants, is a basic measure of financial health and assesses A&T's ability to settle its debt obligations using only its available net assets as of a particular date

How is it calculated?	The sum of (1) Adjusted Unrestricted Net Assets and (2) Restricted Expendable Net Assets divided by aggregate debt
Policy Ratio:	Not less than 0.70x

Ratio 4 – Debt Service to Operating Expenses

What does it measure?	A&T's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues
Why is it tracked?	The ratio, which is widely tracked by rating agencies and other capital market participants, evaluates A&T's relative cost of borrowing to its overall expenditures and provides a measure of A&T's budgetary flexibility
How is it calculated?	Annual debt service divided by annual operating expenses
Policy Ratio:	Not to exceed 3.50%

The Vice Chancellor for Business and Finance will review each ratio in connection with the delivery of the University's audited financials and will provide an annual report to the Board detailing (1) the calculation of each ratio for that fiscal year and (2) an explanation for any ratio that falls outside the University's stated policy ratio, along with (a) any applicable recommendations, strategies and an expected timeframe for aligning such ratio with the University's stated policy or (b) the rationale for any recommended changes to any such stated policy ratio going forward (including any revisions necessitated by changes in accounting standards or rating agency methodologies).

C. Debt Portfolio Management and Transaction Structure Considerations

Generally

Numerous types of financing structures and funding sources are available, each with specific benefits, risks, and costs. Potential funding sources and structures will be reviewed and considered by the Vice Chancellor for Business and Finance, in conjunction with the Chancellor, within the context of this Policy and the overall portfolio to ensure that any financial product or structure is consistent with A&T's stated objectives. As part of effective debt management, A&T must also consider its investment and cash management strategies, which influence the desired structure of the debt portfolio.

Method of Sale

A&T will consider various methods of sale on a transaction-by-transaction basis to determine which method of sale (i.e., competitive, negotiated or private placement) best serves A&T's strategic plan and financing objectives. In making that determination, A&T will consider, among other factors: (1) the size and complexity of the issue, (2) the current interest rate environment and other market factors (such as bank and investor appetite) that might affect A&T's cost of funds, and (3) possible risks associated with each method of sale (e.g., rollover risk associated with a financing that is privately placed with a bank for a committed term that is less than the term of the financing).

Tax Treatment

When feasible and appropriate for the particular project, the use of tax-exempt debt is generally preferable to taxable debt. Issuing taxable debt may reduce A&T's overall debt affordability due to higher rates but may be appropriate for projects that do not qualify for tax-exemption, or that may require interim funding. For example, taxable debt may be justified if it sufficiently mitigates A&T's ongoing administrative and compliance risks. When used, taxable debt should be structured to provide maximum repayment flexibility and rapid principal amortization.

Structure and Maturity

To the extent practicable, A&T should structure its debt to provide for level annual payments of debt service, though A&T may elect alternative structures when the Vice Chancellor for Business and Finance, in consultation with the Chancellor, determine it to be in A&T's best interest. In addition, when financing projects that are expected to be self-supporting (such as a revenue-producing facility or a facility to be funded entirely through a dedicated fundraising campaign), the debt service may be structured to match future anticipated receipts.

A&T will use maturity structures that correspond with the life of the facilities financed, not to exceed the maximum term authorized under applicable State law (currently 30 years). Equipment should be financed for a period not to exceed 120% of its useful life. Such determinations may be made on a blended basis, taking into account all assets financed as part of a single debt offering. As market dynamics change, maturity structures should be reevaluated. Call features should be structured to provide the highest degree of flexibility relative to cost.

Variable Rate Debt

A&T recognizes that a degree of exposure to variable interest rates within A&T's debt portfolio may be desirable in order to (1) take advantage of repayment or restructuring flexibility, (2) benefit from historically lower average interest costs and (3) provide a "match" between debt service requirements and the projected cash flows from A&T's assets. A&T's debt portfolio should be managed to ensure that no more than 20% of A&T's total debt bears interest at an unhedged variable rate.

A&T's finance staff will monitor overall interest rate exposure and will analyze and quantify potential risks, including interest rate, liquidity and rollover risks. A&T may manage the liquidity risk of variable rate debt either through its own working capital/investment portfolio, the type of instrument used, or by using third party sources of liquidity. A&T may manage interest rate risk in its portfolio through specific budget and central bank management strategies or through the use of derivative instruments.

Debt Related to Public Private Partnerships

To address A&T's anticipated capital needs as efficiently and prudently as possible, A&T may choose to explore and consider opportunities for alternative and non-traditional transaction structures (collectively, "P3 Arrangements").

A&T will pursue P3 Arrangements only when A&T has determined that (1) a traditional financing alternative is not feasible, (2) a P3 Arrangement will likely produce construction or overall operating results that are superior, faster or more efficient than a traditional delivery model or (3) a P3 Arrangement serves one of the Board's broader strategic objectives (e.g., a decision that operating a particular auxiliary function is no longer consistent with A&T's core mission).

P3 Arrangements will receive increased scrutiny if the Vice Chancellor for Business and Finance determines, in consultation with A&T's advisors, that the P3 Arrangement will be viewed as "on-credit" (i.e., treated as University debt) by A&T's auditors or outside rating agencies. When evaluating whether the P3 Arrangement should be viewed as "on-credit," rating agencies consider A&T's economic interest in the project and the level of control it exerts over the project. Further, rating agencies will generally treat a P3 Arrangement as University debt if the project is located on A&T's campus or if the facility is to be used for an essential University function. For this reason, any P3 Arrangement for a university-related facility to be located on land owned by the State, A&T or an A&T affiliate must be approved in advance by the Vice Chancellor for Business and Finance, in consultation with the Chancellor.

Refunding Considerations

A&T will actively monitor its outstanding debt portfolio for refunding or restructuring opportunities. Absent a compelling economic or strategic reason to the contrary, A&T should evaluate opportunities to issue bonds for the purpose of refunding existing debt obligations of A&T ("Refunding Bonds") using the following general guidelines:

(i) The life of the Refunding Bonds should not exceed the remaining life of the bonds being refunded.
(ii) Refunding Bonds issued to achieve debt service savings should have a target savings level measured on a present net value basis of at least 3% of the par amount refunded.
(iii) Refunding Bonds that do not achieve debt service savings may be issued to restructure debt or provisions of bond documents if such refunding serves a compelling interest.

(iv) Refunding Bonds may also be issued to relieve A&T of certain limitations, covenants, payment obligations or reserve requirements that reduce operational flexibility.

Financing Team Professionals

A&T will generally select its financial advisors, underwriters, lenders and bond counsel through a request for proposal process. Firms providing financial advisory and bond counsel services are generally selected for a specific period of time rather than for individual transactions, while underwriters and lenders will be selected on a transaction-by-transaction basis. Additionally, A&T may use the financial advisors, underwriters and bond counsel selected by General Administration through its own similar competitive process.

D. Derivative Products

A&T recognizes that derivative products may provide for more flexible management of the debt portfolio. In certain circumstances, interest rate swaps and other derivatives permit A&T to adjust its mix of fixed- and variable-rate debt and manage its interest rate exposures. Derivatives may also be an effective way to manage liquidity risks. A&T will use derivatives only to manage and mitigate risk; A&T will not use derivatives to create leverage or engage in speculative transactions.

As with underlying debt, A&T's finance staff will evaluate any derivative product comprehensively, taking into account its potential costs, benefits and risks, including, without limitation, any tax risk, interest rate risk, liquidity risk, credit risk, basis risk, rollover risk, termination risk, counterparty risk, and amortization risk. Before entering into any derivative product, the Vice Chancellor for Business and Finance must (1) conclude, based on the advice of a reputable swap advisor, that the terms of any swap transaction are fair and reasonable under current market conditions and (2) ensure that A&T's finance staff has a clear understanding of the proposed transaction's costs, cash flow impact and reporting treatment.

A&T will use derivatives only when the Vice Chancellor for Business and Finance, in consultation with the Chancellor, determine based on the foregoing analysis, that the instrument provides the most effective method for accomplishing A&T's strategic objectives without imposing inappropriate risks on A&T.

E. Post-Issuance Compliance Matters

To the extent A&T adopts any formal policies relating to post-issuance compliance matters after the effective date of this Policy, the Vice Chancellor for Business and Business & Finance will attach each such policy as Appendix A to this Policy.

Appendix A – Post-Issuance Compliance Policies

TBD

Approved by the Board of Trustees
First approved: February 16, 2018
Revised:

_____	_____
Harold L. Martin, Sr. Chancellor	date signed for final posting
_____	_____
Robert Pompey, Jr. Vice Chancellor for Business and Finance	date signed for final posting

May 19, 2020

The University of North Carolina System
Debt Capacity Study – Fiscal Year 2019

North Carolina Central University
Institution Report

North Carolina Central University

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), North Carolina Central University ("*NCCU*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. NCCU has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, NCCU, in consultation with UNC System, agreed to certain ceilings and floors for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—NCCU has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, NCCU's debt capacity reflects the amount of debt NCCU could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that NCCU intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- NCCU's current debt profile, including project descriptions financed with, and the sources of repayment for, NCCU's outstanding debt;
- NCCU's current credit profile, along with recommendations for maintaining or improving NCCU's credit rating; and
- A copy of any NCCU debt management policy currently in effect.

Overview of NCCU

For the fall 2018 semester, NCCU had a headcount student population of approximately 8,207, including 6,434 undergraduate students and 1,773 graduate and doctoral students. During the 2018 academic year, NCCU employed approximately 485 full-time, part-time and temporary instructional faculty.

Over the past five years, NCCU's enrollment has increased approximately 7%. NCCU's average age of plant (18.13 years) is higher than the median ratio for all institutions (14.53 years). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs.

NCCU anticipates incurring no additional debt during the Study period, as summarized in **Section 3** below. ECU has made no changes to the financial model's standard growth assumptions, which are based on the consumer price index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Outstanding debt service is based on NCCU's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to NCCU by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt NCCU expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below may overstate NCCU's current debt burden.

1	2	3	4	5	6
		Obligated Resources			
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	27,257,946	16,507,378	-		43,765,324
2016	31,935,836	12,196,575	-	0.84%	44,132,411
2017	39,374,420	12,964,067	-	18.59%	52,338,487
2018	(165,505,248)	14,403,896	207,700,625	8.14%	56,599,273
2019	(116,724,596)	15,171,277	196,949,449	68.55%	95,396,130
2020	97,017,864	-	-	1.70%	97,017,864
2021	98,667,168	-	-	1.70%	98,667,168
2022	100,344,510	-	-	1.70%	100,344,510
2023	102,050,366	-	-	1.70%	102,050,366
2024	103,785,223	-	-	1.70%	103,785,223

		Operating Expenses			
Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	180,635,929	2,449,449	-		183,085,378
2016	182,259,189	3,714,462	-	1.58%	185,973,651
2017	197,510,330	(896,553)	-	5.72%	196,613,777
2018	203,072,724	(1,590,787)	1,608,466	3.29%	203,090,403
2019	207,205,680	(767,381)	10,196,949	6.67%	216,635,248
2020	220,318,047	-	-	1.70%	220,318,047
2021	224,063,454	-	-	1.70%	224,063,454
2022	227,872,533	-	-	1.70%	227,872,533
2023	231,746,366	-	-	1.70%	231,746,366
2024	235,686,054	-	-	1.70%	235,686,054

7	8	9	10	11
		Outstanding Debt		
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	3,785,000	4,406,807	8,191,807	107,995,000
2021	3,860,000	4,346,101	8,206,101	104,135,000
2022	4,050,000	4,177,738	8,227,738	100,085,000
2023	4,260,000	3,988,149	8,248,149	95,825,000
2024	4,470,000	3,788,281	8,258,281	91,355,000
2025	4,710,000	3,516,260	8,226,260	86,645,000
2026	4,945,000	3,279,556	8,224,556	81,700,000
2027	5,210,000	3,054,280	8,264,280	76,490,000
2028	5,480,000	2,817,619	8,297,619	71,010,000
2029	5,570,000	2,590,451	8,160,451	65,440,000
2030	5,820,000	2,375,552	8,195,552	59,620,000
2031	6,065,000	2,170,611	8,235,611	53,555,000
2032	6,295,000	1,976,991	8,271,991	47,260,000
2033	6,540,000	1,775,513	8,315,513	40,720,000
2034	6,800,000	1,566,190	8,366,190	33,920,000
2035	7,065,000	1,062,864	8,127,864	26,855,000
2036	1,395,000	1,277,000	2,672,000	25,460,000
2037	1,460,000	1,210,750	2,670,750	24,000,000
2038	1,535,000	1,141,000	2,676,000	22,465,000
2039	1,610,000	1,068,000	2,678,000	20,855,000
2040	1,675,000	926,850	2,601,850	19,180,000
2041	1,760,000	843,100	2,603,100	17,420,000
2042	1,850,000	755,100	2,605,100	15,570,000
2043	1,940,000	662,600	2,602,600	13,630,000
2044	2,040,000	565,600	2,605,600	11,590,000
2045	2,140,000	463,600	2,603,600	9,450,000
2046	2,225,000	378,000	2,603,000	7,225,000
2047	2,315,000	289,000	2,604,000	4,910,000
2048	2,405,000	196,400	2,601,400	2,505,000
2049	2,505,000	100,200	2,605,200	-

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Unrestricted Net Position plus Foundation Temporarily Restricted Net Position minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projection period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	(17,045,957)	18,987,844	793,288	4,429,655	1,868,338		16,507,378	21,803,870
2016	(6,559,192)	17,937,369	694,973	4,380,437	2,138,848	21.59%	12,196,575	26,511,314
2017	583,504	23,832,344	838,797	4,680,905	4,748,276	43.91%	12,964,067	38,151,341
2018	(205,135,176)	29,373,939	1,000,140	6,808,002	7,545,786	20.71%	221,550,294	46,051,413
2019	(206,906,399)	35,180,658	1,345,893	6,454,056	14,205,745	-26.19%	212,120,276	33,988,739
2020	5,302,513	35,778,729	1,368,773	6,563,775	14,447,243	1.70%	-	34,566,548
2021	5,392,656	36,386,968	1,392,042	6,675,359	14,692,846	1.70%	-	35,154,179
2022	5,484,331	37,005,546	1,415,707	6,788,840	14,942,624	1.70%	-	35,751,800
2023	5,577,564	37,634,640	1,439,774	6,904,251	15,196,649	1.70%	-	36,359,581
2024	5,672,383	38,274,429	1,464,250	7,021,623	15,454,992	1.70%	-	36,977,693

3. Proposed Debt Financings

While NCCU evaluates its capital investment needs on a regular basis, NCCU has no legislatively approved projects that it anticipates financing during the study period.

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** NCCU's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

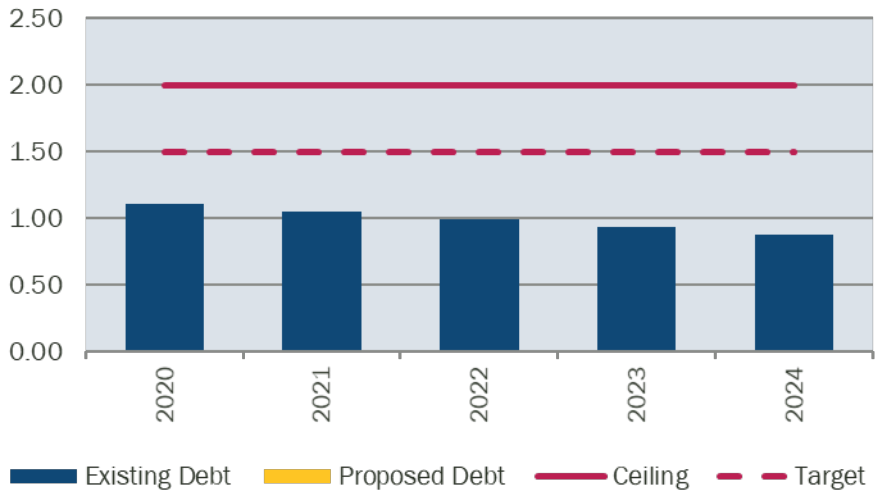
- Target Ratio: 1.50
- Ceiling Ratio: Not to exceed 2.00
- Projected 2020 Ratio: 1.11
- Highest Study Period Ratio: 1.11 (2020)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	97,017,864	1.70%	107,995,000	-	1.11	n/a	1.11
2021	98,667,168	1.70%	104,135,000	-	1.06	n/a	1.06
2022	100,344,510	1.70%	100,085,000	-	1.00	n/a	1.00
2023	102,050,366	1.70%	95,825,000	-	0.94	n/a	0.94
2024	103,785,223	1.70%	91,355,000	-	0.88	n/a	0.88

Debt to Obligated Resources



5-Year Payout Ratio Overview

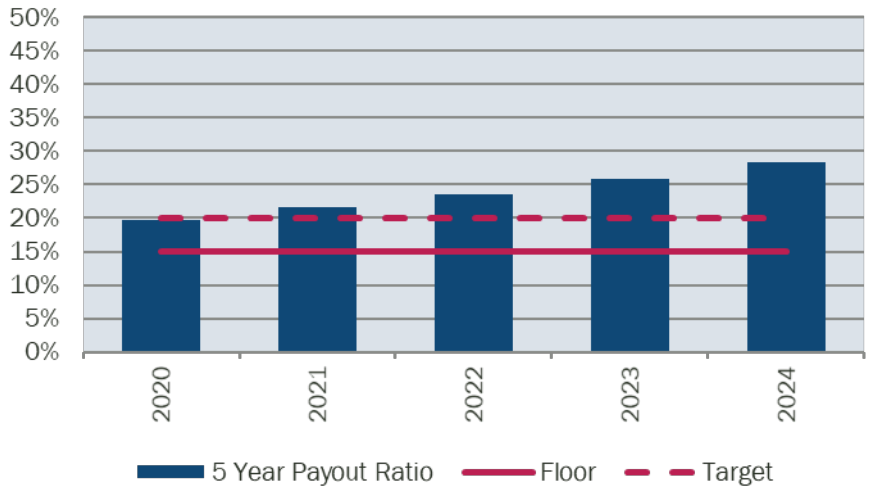
- **What does it measure?** The percentage of NCCU's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

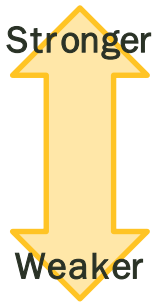
- Target Ratio: 20%
- Floor Ratio: Not less than 15%
- Projected 2020 Ratio: 20%
- Lowest Study Period Ratio: 20% (2020)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	107,995,000	20%
2021	104,135,000	22%
2022	100,085,000	24%
2023	95,825,000	26%
2024	91,355,000	28%

5-Year Payout Ratio





Expendable Resources to Debt

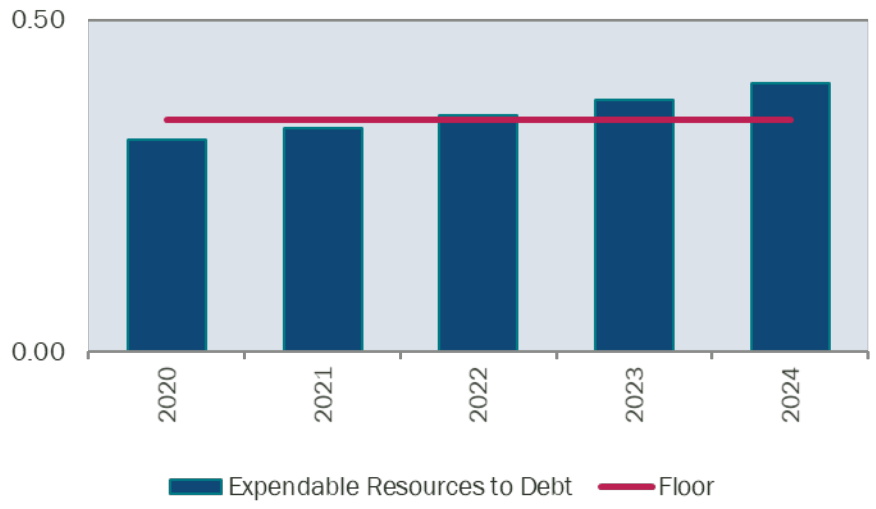
- **What does it measure?** The number of times NCCU's liquid and expendable net position covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

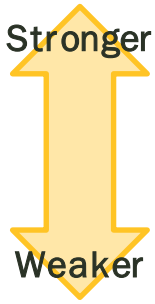
- Floor Ratio: Not less than 0.35x
- Projected 2020 Ratio: 0.32x
- Lowest Study Period Ratio: 0.32x (2020)

Expendable Resources to Debt

1	2	3	4	5	6	7
Expendable Resources to Debt						
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	34,566,548	1.70%	107,995,000	-	0.32	0.32
2021	35,154,179	1.70%	104,135,000	-	0.34	0.34
2022	35,751,800	1.70%	100,085,000	-	0.36	0.36
2023	36,359,581	1.70%	95,825,000	-	0.38	0.38
2024	36,977,693	1.70%	91,355,000	-	0.40	0.40

Expendable Resources to Debt





Debt Service to Operating Expenses

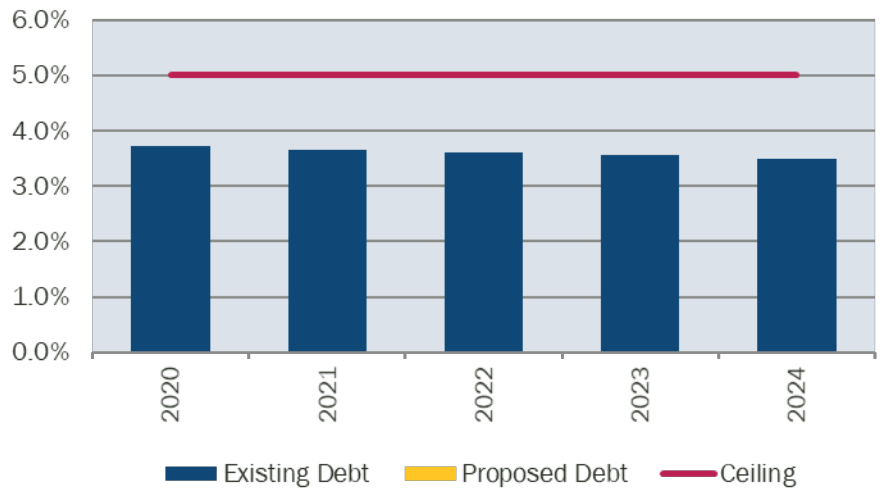
- **What does it measure?** NCCU's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

- Policy Ratio: Not to exceed 5.00%
- Projected 2020 Ratio: 3.72%
- Highest Study Period Ratio: 3.72% (2020)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	220,318,047	1.70%	8,191,807	-	3.72%	n/a	3.72%
2021	224,063,454	1.70%	8,206,101	-	3.66%	n/a	3.66%
2022	227,872,533	1.70%	8,227,738	-	3.61%	n/a	3.61%
2023	231,746,366	1.70%	8,248,149	-	3.56%	n/a	3.56%
2024	235,686,054	1.70%	8,258,281	-	3.50%	n/a	3.50%

Debt Service to Operating Expenses



5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, NCCU's debt capacity is based on the amount of debt NCCU could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, NCCU's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, NCCU's debt capacity for FY 2020 is **$86,040,728**. After taking into account any legislatively approved projects detailed in **Section 3** above, if NCCU issued no additional debt until the last year of the Study Period, then NCCU's debt capacity for 2024 is projected to increase to **$116,215,445.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	1.11	2.00	86,040,728
2021	1.06	2.00	93,199,336
2022	1.00	2.00	100,604,020
2023	0.94	2.00	108,275,733
2024	0.88	2.00	116,215,445

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of NCCU's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" <u>does not</u> necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- Projecting the exact amount NCCU could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **<u>Use of Multiple Factors</u>**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.
  - **<u>The State's Impact</u>**
    - In assessing each Institution's credit rating, rating agencies also consider the State's credit rating and demographic trends, the health of its pension system, the level of support it has historically provided to the institution, and any legislation or policies affecting campus operations.

- Historically, each institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
- If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.

- **Factor Interdependence**
  - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
  - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
  - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
  - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

NCCU's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 2003A	Student Housing Facilities Revenue Bonds	15,585,000	10/1/2034	Eagle Landing		Housing Revenues
Series 2014	Revenue Refunding Bonds (PNC Bank)	2,340,000	4/1/2023	Chidley Hall	2004B	Housing Revenues
Series 2016	General Revenue Refunding Bonds	54,150,000	10/1/2034	Deferred Maintenance		Housing Revenues
				Latham Parking Deck	2009C	Parking and Vehicle Registration Revenues
				Chidley Hall	2009C	Housing Revenues
				Richmond Hall	2009C	Housing Revenues
				Residence Hall 2	2009C	Housing Revenues
				Walker Sports Complex	2009C	Debt Service Fee
Total		72,075,000				

Approved by the UNC Board of Governors on May 20, 2020

7. Credit Profile

The following page provides a snapshot of NCCU's current credit ratings, along with (1) a summary of various credit factors identified in NCCU's most recent rating report and (2) recommendations for maintaining and improving NCCU's credit ratings in the future.

Credit Profile of the University – (General Revenue)

Overview

- Moody's maintains an A3 rating on NCCU's general revenue bonds. The outlook is stable.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-
Non Investment Grade		

Key Information Noted in Reports

Credit Strengths

- Very strong funding from the Aaa-rated State of North Carolina which has increased 6% since FY 2013-14
- Wealth and liquidity have improved dramatically since FY 2013-14
- Enrollment growth that has supported growth in net tuition and fee revenue
- Enrollment, net tuition revenue, and state appropriations expected to continue increasing

Credit Challenges

- Debt will stress the university's financial leverage relative to peers
- Competitive niche as one of five historically black colleges and universities (HBCUs) in the UNC system

Recommendations & Observations

- Continue to develop and implement strategies and policies to meet NCCU's unique challenges, including strategies to stabilize and improve enrollment and retention.
- Cash from operation will need to increase to maintain healthy debt service coverage.

Approved by the UNC Board of Governors on May 20, 2020

8. Peer Comparison

Moody's Key Credit Ratios	North Carolina Central University	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2018	Valdosta State University (BOR)	Morgan State University	Murray State University	New Jersey City State University	
Most Senior Rating	A3	A1	A1	A2	Baa1	A3
Total Debt ($, in millions)	82	4050	46	76	214	34
Total Cash & Investments ($, in millions)	109	6497	138	262	37	52
Operating Revenue ($, in millions)	194	8065	219	183	150	58
Operating Expenses ($, in millions)	195	7817	223	183	160	55
Market Performance Ratios						
Annual Change in Operating Revenue (%)	0.1%	4.5%	0.4%	0.2%	-0.8%	-2.4%
Operating Ratios						
Operating Cash Flow Margin (%)	6.8%	4.5%	8.6%	7.8%	3.9%	11.0%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	0.6	0.8	0.6	1.4	0.2	0.7
Total Debt to Operating Expenses (x)	0.4	0.5	0.2	0.4	1.3	0.6
Monthly Days Cash on Hand (x)	84	93	172	197	53	136
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	1.3	1.6	3.0	3.5	0.0	1.5
Debt Service to Operating Expenses (%)	3.6%	3.1%	3.5%	3.4%	11.5%	5.1%
Total Debt-to-Cash Flow (x)	6.2	4.6	2.5	5.3	36.7	4.6

Approved by the UNC Board of Governors on May 20, 2020

9. Debt Management Policies

NCCU's current debt policy is included in the following pages.

North Carolina Central University
Debt Policy

Executive Summary:
This Policy outlines the University philosophy on debt, establishes the framework for approving, managing, and reporting debt and provides debt management guidelines.

I. Policy Statement

The mission of North Carolina Central University (University) is supported by the development and implementation of the long-term strategic plan. The strategic plan establishes University-wide priorities and programmatic objectives. The University develops a master plan to support these priorities and objectives.

The University's use of debt must be appropriate in support of the master plan. The University will consider its financial resources, debt affordability and capacity, cost of capital, debt mix, and credit rating when determining the need for capital funding.

This Debt Policy is intended to be a fluid document that will evolve over time to meet the changing needs of the University.

A. Scope

This Debt Policy applies to the University and affiliated entities and covers all forms of debt including long-term, short-term, fixed-rate, and variable-rate debt. It also covers other forms of financing including both on-balance sheet and off-balance sheet structures, such as leases, and other structured products used with the intent of funding capital projects.

B. Objectives

The objectives of this policy are to:

i. Guidelines for the User of Debt
ii. Establish a control framework for approving and managing debt
iii. Establish debt management guidelines
iv. Approval Process

i. Overall Guidelines for the Use of Debt

Debt is a limited resource that must be managed strategically in order to best support University priorities. Under this policy, the University will manage its debt based on the following overall principles:

a. The University will use debt to maximize the resources available to maintain and enhance the campus physical plant and infrastructure; and to invest in transformative capital improvement projects that advance the University's strategic mission.

b. The University will target key financial ratios as mandated by Article 5 of Chapter 116D of the North Carolina General Statutes, as well as supplemental financial ratios that are widely used by rating agencies, to measure its debt burden and guide future debt issuance decisions.

c. The University's decision to issue debt will be guided primarily by its ability to support all of the incremental costs (i.e., principal, interest payments, and annual operating costs of new or expanded space) within the University's operating budget. Generally, the University will not pursue the issuance of new debt without first identifying a new or increased fee to support incremental debt service cost.

d. The University will maintain the highest acceptable credit worthiness in order to finance capital improvement projects at favorable cost of capital and borrowing terms. While the University's decision to issue additional debt will be primarily focused on the strategic importance of the new capital improvement project, the potential impact of a change in credit rating will be thoroughly reviewed.

e. The University will manage its debt mix (i.e., short-term and long-term debt, fixed rate versus variable rate debt) to maintain an acceptable balance between interest rate risk and the long-term cost of capital.

f. The University will manage the structure and maturity profile of its debt to meet liquidity objectives and make funds available to support future capital projects and strategic initiatives;

g. The University will coordinate debt management decisions with asset management decisions to optimize overall funding and portfolio management strategies.

ii. Control Framework

Roles and Responsibilities; Compliance

The Office of the Vice Chancellor for Administration and Finance ("VCAF") is responsible for implementing this policy and for all debt financing activities. The policy and any subsequent, material changes to the policy must be approved by the Chancellor after consultation with the University's Board of Trustees ("BOT".) The approved policy provides the framework under which debt management decisions are made.

The exposure limits listed in the policy are monitored on a regular basis by the VCAF. The office of the VCAF reports regularly to the Chancellor and the BOT on the University's debt position and plans.

Debt Affordability and Capacity

In assessing its current debt levels and planning for additional debt, the University takes into account both its debt affordability and debt capacity. Debt affordability focuses on the University's ability to service its debt through its operating budget and identified revenue streams and is driven by strength in income and cash flows. Debt capacity focuses on the University's financial leverage in terms of debt funding as a percentage of the University's total capital.

The University considers many factors in assessing its debt affordability and debt capacity including its strategic plan, market position, and alternative sources of funding. The University uses four key quantitative ratios to inform its assessments with respect to debt affordability and debt capacity.

The ratios described below are not intended to track a specific rating, but rather to help the University maintain a competitive financial profile and funding for facilities needs and reserves.

1. Debt Affordability Measures

a. Debt Burden Percentage

This ratio measures the University's debt service burden as a percentage of total university expenses. The target for this ratio is intended to maintain the University's long-term operating flexibility to finance existing requirements and new initiatives.

$$\frac{\text{ANNUAL DEBT SERVICE}}{\text{TOTAL OPERATING EXPENSES}} \leq 5.0\%$$

The measure is based on aggregate operating expenses as opposed to operating revenues because expenses typically are more stable (e.g. revenues may be subject to one-time operating gifts, investment return fluctuations, variability of State funding, etc.) and better reflect the operating base of the University. This ratio is adjusted to reflect any non-amortizing or non-traditional debt structures that could result in significant single year fluctuations including the effect of debt refundings.

b. Debt to Obligated Resources Ratio

This ratio measures the University's ability to cover debt with funds that are legally available to service debt. The target established is intended to ensure that debt does not become too unwieldy and over-consumes available resources.

$$\frac{\text{AGGREGATED DEBT}}{\text{OBLIGATED RESOURCES}} \leq 2.00\%$$

This ratio is adjusted to reflect any non-amortizing or non-traditional debt structures that could result in significant single year fluctuations including the effect of debt refundings.

2. Debt Capacity Measures

a. Viability Ratio (Expendable Resources to Debt)

This ratio indicates one of the most basic determinants of financial health by measuring the availability of liquid and expendable net assets to the aggregate debt. The ratio measures the medium to long-term health of the University's balance sheet and debt capacity and is a critical consideration of universities with the highest credit quality.

Many factors influence the viability ratio, affecting both the assets (e.g., investment performance, philanthropy) and liabilities (e.g., timing of bond issues), and therefore the ratio is best examined in the context of changing market conditions so that it accurately reflects relative financial strength.

$$\frac{\text{ADJUSTED UNRESTRICTED NET ASSETS + RESTRICTED EXPENDABLE NET ASSETS}}{\text{AGGREGATE DEBT}} \geq .35x$$

b. 5-Year Payout Ratio

This ratio measures the percentage of University's debt scheduled to be retired in the next five years. A more aggressive rate of payment is a better indication for debt capacity.

$$\frac{\text{AGGREGATE PRINCIPAL TO BE PAID IN THE NEXT FIVE YEARS}}{\text{AGGREGATE DEBT}} \geq 15.0\%$$

Both the Viability and Debt Capitalization Ratios should include any component unit (University-related foundation) balances as disclosed in the University's financial statements.

Financing Sources

The University recognizes that there are numerous types of financing structures and funding sources available, each with specific benefits, risks, and costs. All potential funding sources are reviewed by management within the context of this Debt Policy and the overall portfolio to ensure that any financial product or structure is consistent with the University's objectives. Regardless of what financing structure(s) is (are) utilized, due-diligence review must be performed for each transaction, including (i) quantification of potential risks and benefits; and (ii) analysis of the impact on University creditworthiness and debt affordability and capacity.

1. Tax-Exempt Debt

The University recognizes that tax-exempt debt is a significant component of the University's capitalization due in part to its substantial cost benefits; therefore, tax-exempt debt is managed as a portfolio of obligations designed to meet long-term financial objectives rather than as a series of discrete financings tied to specific projects. The University manages the debt portfolio to maximize its utilization of tax-

exempt debt relative to taxable debt whenever possible. In all circumstances, however, individual projects continue to be identified and tracked to ensure compliance with all tax and reimbursement regulations.

For tax-exempt debt, the University considers maximizing the external maturity of any tax-exempt bond issue, subject to prevailing market conditions and opportunities and other considerations, including applicable regulations.

2. Taxable Debt

In instances where certain of the University's capital projects do not qualify for tax-exempt debt, the use of taxable debt may be considered. The taxable debt market offers certain advantages in terms of liquidity and marketing efficiency; such advantages will be considered when evaluating the costs and benefits of a taxable debt issuance.

3. Commercial Paper

Commercial paper provides the University with interim financing for projects in anticipation of philanthropy or planned issuance of long-term debt. The use of commercial paper also provides greater flexibility on the timing and structuring of individual bond transactions. This flexibility also makes commercial paper appropriate for financing equipment and short-term operating needs.

4. University-issued vs. State-Issued Debt

In determining the most cost effective means of issuing debt, the University evaluates the merits of issuing debt directly vs. participating in debt pools through the UNC System Board of Governors. Periodically, the University performs a cost/benefit analysis between these two options and takes into consideration the comparative funding costs, flexibility in market timing, and bond ratings of each alternative. The University also takes into consideration the future administrative flexibility of each issue such as the ability to call and/or refund issues at a later date, as well as the administrative flexibility to structure and manage the debt in a manner that the University believes to be appropriate and in the University's best interest.

5. Other Financing Sources

Given limited debt capacity and substantial capital needs, opportunities for alternative and non-traditional transaction structures may be considered. The University recognizes these types of transactions often can be more expensive than traditional University debt structures; therefore, the benefits of any potential transaction must outweigh any potential costs.

All structures may be considered only when the economic benefit and the likely impact on the University's debt capacity and credit have been determined. Specifically, for any third-party or developer-based financing, management ensures the full credit impact of the structure is evaluated and quantified.

iii. Portfolio Management of Debt

The University considers its debt portfolio holistically to optimize the portfolio of debt for the entire University rather than on a project-by-project basis while taking into account the University's cash and investment portfolio. Therefore, management makes decisions regarding project prioritization, debt portfolio optimization, and financing structures within the context of the overall needs and circumstances of the University.

1. Variable-Rate Debt

The University recognizes that a degree of exposure to variable interest rates within the University's debt portfolio might be desirable in order to:

a. take advantage of repayment/restructuring flexibility;
b. benefit from historically lower average interest costs;
c. provide a "match" between debt service requirements and the projected cash flows from the University's assets; and
d. diversify its pool of potential investors.

Management monitors overall interest rate exposure, analyzes and quantifies potential risks, including interest rate, liquidity and rollover risks, and coordinates appropriate fixed/variable allocation strategies. The portfolio allocation to variable-rate debt may be managed or adjusted through (i) the issuance or redemption of debt in the conventional debt market (e.g. new issues and refundings) and (ii) the use of interest rate derivative products including swaps.

The amount of variable-rate debt outstanding (adjusted for any derivatives) shall not exceed 25% of the University's outstanding debt. This limit is based on the University's desire to: (i) limit annual variances in its interest payments; (ii) provide sufficient structuring flexibility to management; (iii) keep the University's variable-rate allocation within acceptable external parameters; and (iv) utilize variable-rate debt (including derivatives) to optimize debt portfolio allocation and minimize costs.

$$\frac{\text{VARIABLE RATE DEBT}}{\text{AGGREGATE DEBT}} \leq 25.0\%$$

2. Refinancing Outstanding Debt

The University monitors its debt portfolio on a continual basis to assure portfolio management objectives are being met and to identify opportunities to lower its cost of funding, primarily through refinancing outstanding debt. The University of North Carolina General Administration prefers a savings of 2% for refinancing current outstanding debt. Savings requirements in excess of 2% may be required from time to time by the Vice Chancellor for Administration and Finance.

The University monitors the prices and yields of its outstanding debt and attempts to identify potential refunding candidates by examining refunding rates and calculating

the net present value of any refunding savings after taking into account all transaction costs. The University may choose to pursue refundings for economic and/or legal reasons. The University reserves the right to not partially refund an issue.

3. Liquidity Requirements

If the University's portfolio includes variable-rate debt and commercial paper, liquidity support is required in the event of the bonds or paper being put back to the University by investors. Generally, the University can purchase liquidity support externally from a bank in the form of a standby bond purchase agreement or line of credit. In addition, the University may consider using its own capital in lieu of or to supplement external liquidity facilities. Alternatively, it may utilize variable-rate structures that do not require liquidity support (e.g. auction-rate products.)

Just as the University manages its debt on a portfolio basis, it also manages its liquidity needs by considering its entire asset and debt portfolio, rather than managing liquidity solely on an issue-specific basis. This approach permits institution-wide evaluation of desired liquidity requirements and exposure, minimizes administrative burden, and reduces total liquidity costs.

A balanced approach may be used to provide liquidity support to enhance credit for variable-rate debt, through a combination of external bank liquidity, auction market or derivative structures. Using a variety of approaches limits dependence on an individual type or source of credit; it also allows for exposure to different types of investors. The University must balance liquidity requirements with its investment objectives and its cost and renewal risk of third-party liquidity providers.

Further, a portfolio-approach to liquidity can enhance investment flexibility, reduce administrative requirements, lower total interest costs, and reduce the need for external bank liquidity.

4. Overall Exposure

The University recognizes that it may be exposed to interest rate, third-party credit, and other potential risks in areas other than direct University debt (e.g., counterparty exposure in the investment portfolio, etc.) and, therefore, exposures are considered on a comprehensive University-wide basis.

Debt Administration and Other Matters

The issuance of tax-exempt debt generally requires the aid and assistance of several outside parties:

- Use of a financial advisor is recommended with a competitive selection process at least once every five years.
- Bond counsel appointments are competitively determined at least once every five years.

- The selection of underwriters is recommended for each debt issuance using a competitive process. Co-managers are recommended for issuances of $30 million or more and will be selected from the same group of underwriters responding to the competitive bid process.

Debt issuance can be "sized" to include capitalized interest and borrowing costs up to 5% of the debt issuance.

Reimbursement resolutions will be prepared for each debt issuance.

iv. Approval Process

All debt issued is by the authority granted to the UNC System Board of Governors under N.C.G.S. § 116D, Article 3. All debt issue is approved by the NCCU Board of Trustees and then by the UNC System Board of Governors.

When the University participates in bond programs that are administered by the State, including State tax-supported debt, such bonds are issued by the State Treasurer, who also possesses the authority to price such bonds.

Revision History:
Initially Approved:

Authority: Chancellor

Responsible Office: Administration and Finance

Related Resources:

- N.C.G.S. § 116D, Article 3

May 19, 2020

The University of North Carolina System
Debt Capacity Study – Fiscal Year 2019

North Carolina State University
Institution Report

North Carolina State University

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), North Carolina State University ("*NC State*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. NC State has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, NC State, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—NC State has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, NC State's debt capacity reflects the amount of debt NC State could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that NC State intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- NC State's current debt profile, including project descriptions financed with, and the sources of repayment for, NC State's outstanding debt;
- NC State's current credit profile, along with recommendations for maintaining or improving NC State's credit rating; and
- A copy of any NC State debt management policy currently in effect.

Overview of NC State

For the fall 2018 semester, NC State had a headcount student population of approximately 35,479, including 25,199 undergraduate students and 10,280 graduate and doctoral students. During the 2018-19 academic year, NC State employed approximately 2,852 full-time, part-time and temporary instructional faculty.

Over the past 5 years, NC State's enrollment has increased approximately 4%. NC State's average age of plant (11.53) is lower than the median ratio for all institutions (14.53). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs.

NC State anticipates incurring approximately $76 million in additional debt during the Study Period, as summarized in **Section 3** below. NC State has made no changes to the financial model's standard growth assumptions, which are based on the Consumer Price Index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Outstanding debt service is based on NC State's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to NC State by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt NC State expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below may overstate NC State's current debt burden.

Obligated Resources

1	2	3	4	5	6
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	594,359,648	85,242,007	-		679,601,655
2016	666,654,687	65,062,173	-	7.67%	731,716,860
2017	715,431,524	72,917,024	-	7.74%	788,348,548
2018	(953,664,116)	86,679,123	1,681,501,505	3.32%	814,516,512
2019	(947,107,122)	96,731,363	1,614,131,687	-6.23%	763,755,928
2020	776,739,779	-	-	1.70%	776,739,779
2021	789,944,355	-	-	1.70%	789,944,355
2022	803,373,409	-	-	1.70%	803,373,409
2023	817,030,757	-	-	1.70%	817,030,757
2024	830,920,280	-	-	1.70%	830,920,280

Operating Expenses

Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	1,333,767,028	16,786,729	-		1,350,553,757
2016	1,401,497,846	19,972,396	-	5.25%	1,421,470,242
2017	1,494,274,269	(8,085,244)	-	4.55%	1,486,189,025
2018	1,531,778,945	(14,037,421)	11,899,327	2.92%	1,529,640,851
2019	1,556,533,507	(10,354,015)	18,686,599	2.30%	1,564,866,091
2020	1,591,468,815	-	-	1.70%	1,591,468,815
2021	1,618,523,784	-	-	1.70%	1,618,523,784
2022	1,646,038,689	-	-	1.70%	1,646,038,689
2023	1,674,021,346	-	-	1.70%	1,674,021,346
2024	1,702,479,709	-	-	1.70%	1,702,479,709

Outstanding Debt

7	8	9	10	11
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	17,618,469	18,408,026	36,026,495	431,508,828
2021	18,086,318	17,727,039	35,813,357	413,422,510
2022	18,823,612	16,979,158	35,802,770	394,598,898
2023	19,583,840	16,213,956	35,797,796	375,015,058
2024	19,364,012	15,439,655	34,803,667	355,651,046
2025	20,169,944	14,637,576	34,807,520	335,481,102
2026	20,883,417	13,790,662	34,674,079	314,597,685
2027	20,862,845	12,873,692	33,736,537	293,734,840
2028	21,867,608	11,890,477	33,758,085	271,867,232
2029	23,214,065	10,851,012	34,065,077	248,653,167
2030	24,469,176	9,742,075	34,211,251	224,183,991
2031	28,973,912	8,607,363	37,581,275	195,210,079
2032	14,740,079	7,797,160	22,537,239	180,470,000
2033	13,060,000	7,303,089	20,363,089	167,410,000
2034	13,660,000	6,759,985	20,419,985	153,750,000
2035	14,310,000	6,175,473	20,485,473	139,440,000
2036	14,960,000	5,588,501	20,548,501	124,480,000
2037	15,645,000	4,937,375	20,582,375	108,835,000
2038	16,355,000	4,227,375	20,582,375	92,480,000
2039	17,040,000	3,543,450	20,583,450	75,440,000
2040	17,720,000	2,864,000	20,584,000	57,720,000
2041	18,445,000	2,140,700	20,585,700	39,275,000
2042	19,195,000	1,387,900	20,582,900	20,080,000
2043	20,080,000	502,000	20,582,000	-

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Unrestricted Net Position plus Foundation Temporarily Restricted Net Position minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projected period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	217,106,466	211,507,389	104,455,860	302,455,419	32,523,251		85,242,007	888,243,890
2016	240,432,645	217,731,322	99,148,472	299,417,619	59,319,171	-2.90%	65,062,173	862,473,060
2017	236,448,718	271,092,872	102,657,931	345,282,225	84,923,854	9.39%	72,917,024	943,474,916
2018	(1,465,833,681)	325,436,076	105,858,476	422,775,236	81,951,663	13.88%	1,768,180,628	1,074,465,072
2019	(1,379,966,310)	329,816,454	119,518,156	450,028,326	62,627,594	8.67%	1,710,863,050	1,167,632,082
2020	336,521,985	335,423,334	121,549,965	457,678,808	63,692,263	1.70%	-	1,187,481,827
2021	342,242,858	341,125,530	123,616,314	465,459,347	64,775,032	1.70%	-	1,207,669,018
2022	348,060,987	346,924,664	125,717,791	473,372,156	65,876,207	1.70%	-	1,228,199,392
2023	353,978,024	352,822,384	127,854,994	481,419,483	66,996,103	1.70%	-	1,249,078,781
2024	359,995,650	358,820,364	130,028,529	489,603,614	68,135,036	1.70%	-	1,270,313,121

3. Proposed Debt Financings

The table below summarizes any legislatively approved projects that NC State expects to finance during the Study Period. Using the assumptions outlined in the table below, the model has developed a tailored, but conservative, debt service schedule for each proposed financing and incorporated each pro forma debt service schedule into its calculations of the financial ratios as detailed in **Section 4** below.

NC State Proposed Debt Financings

Year	Use of Funds	Borrowing Amount	Term	Source of Repayment
2020	Commercial Paper - Engineering Oval	31,000,000	26	Gifts
2020	Commercial Paper - Plant Sciences	7,000,000	21	Gifts
2020	Carmichael Gymnasium Renovation	38,000,000	20	Student Debt Fee
Total		76,000,000		

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** NC State's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

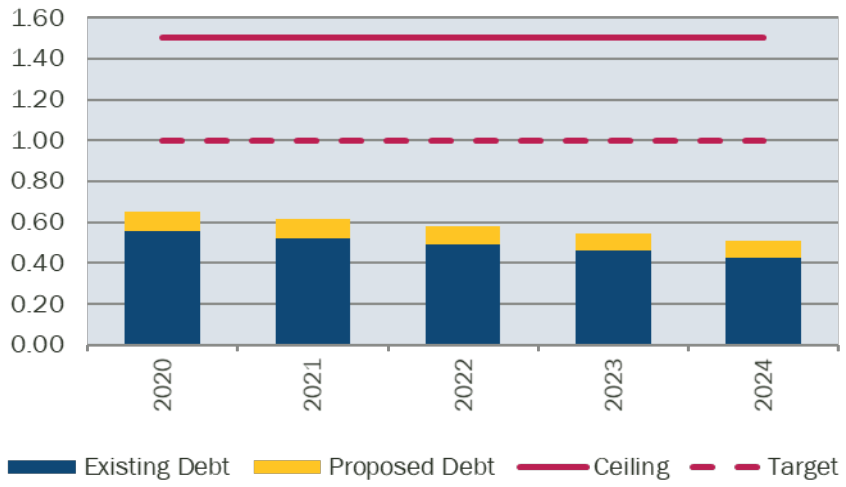
- Target Ratio: 1.00
- Ceiling Ratio: Not to exceed 1.25
- Projected 2020 Ratio: 0.65
- Highest Study Period Ratio: 0.65 (2020)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	776,739,779	1.70%	431,508,828	76,000,000	0.56	0.10	0.65
2021	789,944,355	1.70%	413,422,510	74,504,907	0.52	0.09	0.62
2022	803,373,409	1.70%	394,598,898	71,799,585	0.49	0.09	0.58
2023	817,030,757	1.70%	375,015,058	69,026,814	0.46	0.08	0.54
2024	830,920,280	1.70%	355,651,046	66,184,913	0.43	0.08	0.51

Debt to Obligated Resources



5-Year Payout Ratio Overview

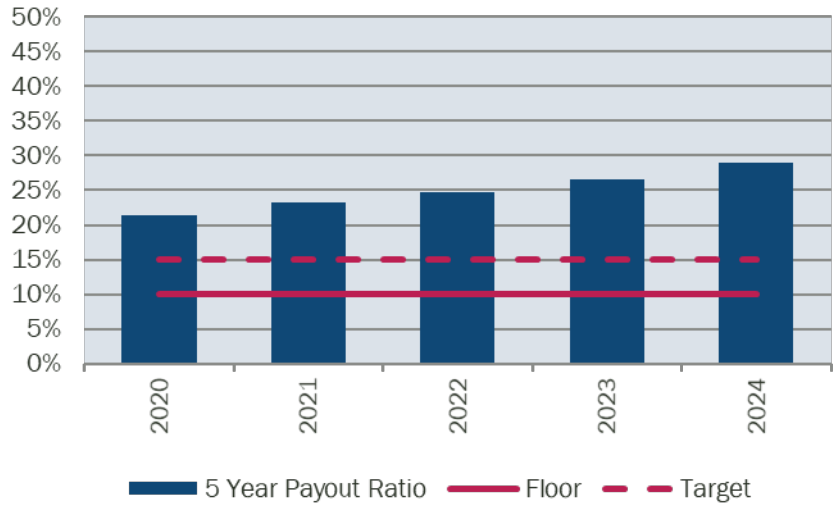
- **What does it measure?** The percentage of NC State's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

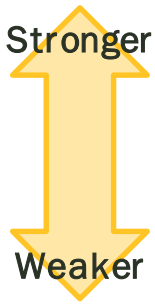
- Target Ratio: 15%
- Floor Ratio: Not less than 10%
- Projected 2020 Ratio: 21%
- Lowest Study Period Ratio: 21% (2020)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	507,508,828	21%
2021	487,927,417	23%
2022	466,398,483	25%
2023	444,041,872	27%
2024	421,835,959	29%

5-Year Payout Ratio





Expendable Resources to Debt

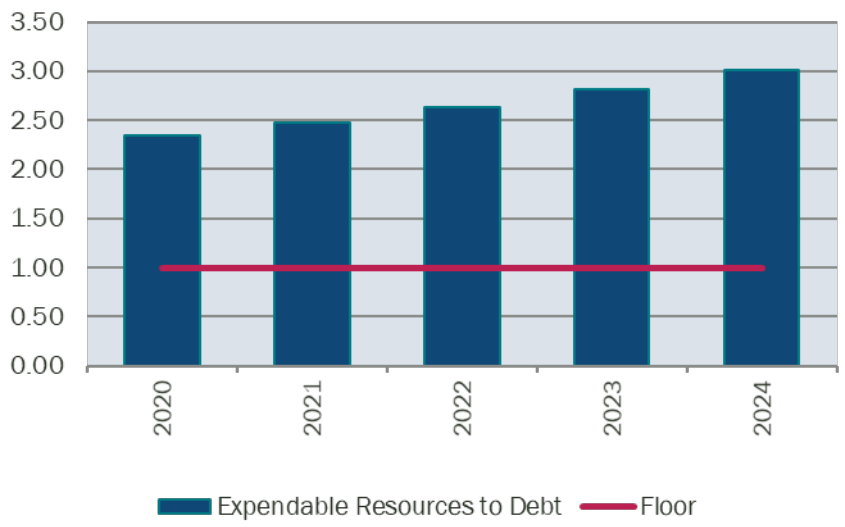
- **What does it measure?** The number of times NC State's liquid and expendable net position covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

- Floor Ratio: Not less than 1.00x
- Projected 2020 Ratio: 2.34x
- Lowest Study Period Ratio: 2.34x (2020)

Expendable Resources to Debt

1	2	3	4	5	6	7
Expendable Resources to Debt						
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	1,187,481,827	1.70%	431,508,828	76,000,000	2.75	2.34
2021	1,207,669,018	1.70%	413,422,510	74,504,907	2.92	2.48
2022	1,228,199,392	1.70%	394,598,898	71,799,585	3.11	2.63
2023	1,249,078,781	1.70%	375,015,058	69,026,814	3.33	2.81
2024	1,270,313,121	1.70%	355,651,046	66,184,913	3.57	3.01

Expendable Resources to Debt



Debt Service to Operating Expenses

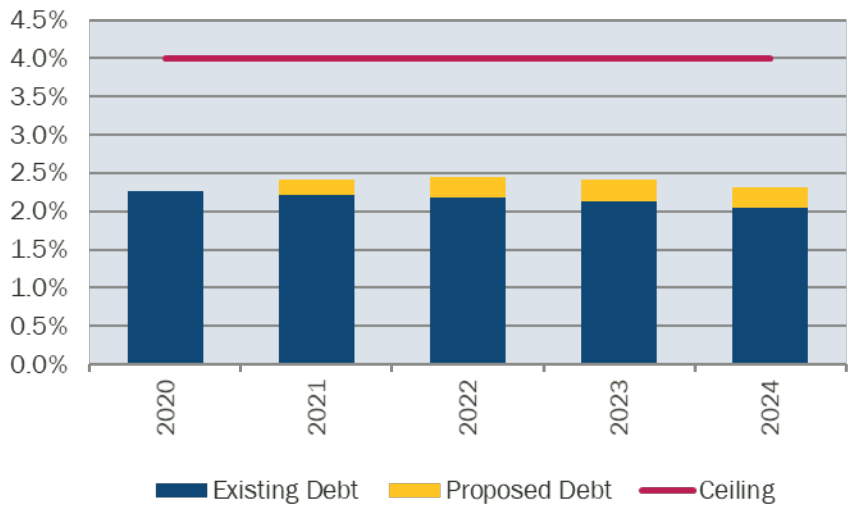
- **What does it measure?** NC State's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

- Policy Ratio: Not to exceed 4.00%
- Projected 2020 Ratio: 2.26%
  - Highest Study Period Ratio: 2.45% (2022)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	1,591,468,815	1.70%	36,026,495	-	2.26%	n/a	2.26%
2021	1,620,426,084	1.70%	35,813,357	3,397,393	2.21%	0.21%	2.42%
2022	1,647,904,359	1.70%	35,802,770	4,570,993	2.17%	0.28%	2.45%
2023	1,675,819,569	1.70%	35,797,796	4,570,993	2.14%	0.27%	2.41%
2024	1,704,208,801	1.70%	34,803,667	4,570,993	2.04%	0.27%	2.31%

Debt Service to Operating Expenses



5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, NC State's debt capacity is based on the amount of debt NC State could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, NC State's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, NC State's current estimated debt capacity is **$657,600,841.** After taking into account any legislatively approved projects detailed in **Section 3** above, if NC State issued no additional debt until the last year of the Study Period, then NC State's debt capacity for 2024 is projected to increase to **$824,544,461.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	0.65	1.50	657,600,841
2021	0.62	1.50	696,989,116
2022	0.58	1.50	738,661,631
2023	0.54	1.50	781,504,264
2024	0.51	1.50	824,544,461

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of NC State's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" does not necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- **If NC State were to use all of its calculated debt capacity during the Study Period, NC State's credit ratings may face significant downward pressure**.
- Projecting the exact amount NC State could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **Use of Multiple Factors**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.
  - **The State's Impact**
    - In assessing each institution's credit rating, rating agencies also consider the State's credit rating and demographic trends, the health of its pension system, the level of support it has historically provided to the institution, and any legislation or policies affecting campus

operations.
    - Historically, each institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
    - If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.
- **Factor Interdependence**
    - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
    - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
    - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
    - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

NC State's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 2010A	General Revenue Bonds	6,620,000	10/1/2022	Centennial Campus Projects	1999A	Centennial Campus Receipts
				Terry Companion Animal Hospital		Gifts
				Student Health Addition		Student Fees
				West Lot Parking Deck		Transportation Receipts
				Atrium Renovation		Dining Receipts
				Athletic Facilities Renovations		Student Fees
Series 2010B	Taxable General Revenue Bonds (BABs)	59,565,000	10/1/2035	Terry Companion Animal Hospital		Gifts
				Student Health Addition		Student Fees
				West Lot Parking Deck		Transportation Receipts
				Atrium Renovation		Dining Receipts
				Athletic Facilities Renovations		Student Fees
				Carmichael Complex Improvements		Student Fees
Series 2013A	General Revenue Bonds	125,660,000	10/1/2042	Wolf Ridge Residence Halls		Housing Revenues
Series 2013B	Taxable General Revenue Bonds	132,130,000	10/1/2041	Talley Student Union		S & Dining/Bookstore Receipts
Series 2017	General Revenue Bond	42,082,297	10/1/2031	Phytotron		Energy Savings
				Carmicheal		Student Fees
				Reynolds Renovation		Gifts
Series 2018	General Revenue Refunding Bonds	83,070,000	10/1/2028	Wolf Village Residence Halls	2003B	Housing Revenues
				Doak Baseball and Tennis Complex	2003B	Athletics Revenues
				Greek Housing Renovations	2003B	Housing Revenues
				Centennial Campus Infrastructure	2015	Centennial Campus Receipts
				Derr Track Soccer Softball Complex	2015	Student Fees
				Carmichael Addition	2015	Student Fees
				Thompson Theater	2015	Student Fees
				Gold, Welch, Syme Res Halls, First Year College Building	2015	Housing Revenues
				North End Zone - CF Stadium	2015	Athletics Revenues
				Western Manor	2015	Housing Revenues
				Carter Finley Concrete Repairs	2015	Student Fees
Total		449,127,297				

Approved by the UNC Board of Governors on May 20, 2020

7. Credit Profile

The following page provides a snapshot of NC State's current credit ratings, along with (1) a summary of various credit factors identified in NC State's most recent rating report and (2) recommendations for maintaining and improving NC State's credit ratings in the future.

Credit Profile of the University – (General Revenue)

Overview

- Moody's maintains a Aa1 rating on NC State's general revenue bonds. The outlook is stable.
- Standard and Poor's maintains a AA rating on NC State's general revenue bonds. The outlook is stable.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-

Non Investment Grade

Key Information Noted in Reports

Credit Strengths

- Excellent student market position as land-grant university with diverse degree programs
- Solid support from Aaa-rated state for operations and capital
- Sizeable and growing financial reserves provide a resource cushion
- Strong philanthropic support
- Manageable financial leverage
- Good financial management as evidenced by a history of strong operating performance

Credit Challenges

- Ongoing capital needs will lead to increased debt over time
- Political limits on pricing power for in-state undergraduate students restrain prospects for revenue growth

Recommendations & Observations

- NC State sees strategic value in maintaining its current rating levels.
- NC State will continue to seek strategies to limit new debt in the near term while addressing the critical infrastructure needs of a growing campus, in accordance with NC State's existing debt policy and in service of NC State's other strategic initiatives.

Approved by the UNC Board of Governors on May 20, 2020

8. Peer Comparison

Moody's Key Credit Ratios	North Carolina State University	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2018	Pennsylvania State University	Michigan State University	Virginia Tech University	Texas A&M University	
Most Senior Rating	Aa1	Aa1	Aa2	Aa1	Aaa	Aa1
Total Debt ($, in millions)	534	1493	1916	640	5212	1493
Total Cash & Investments ($, in millions)	2095	8891	3976	1698	16392	4608
Operating Revenue ($, in millions)	1573	6724	2583	1465	4613	4513
Operating Expenses ($, in millions)	1511	6123	2605	1423	4463	4253
Market Performance Ratios						
Annual Change in Operating Revenue (%)	3.6%	4.2%	2.8%	5.9%	5.3%	4.9%
Operating Ratios						
Operating Cash Flow Margin (%)	11.9%	4.2%	8.5%	11.2%	15.5%	12.6%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	1.4	1.5	1.5	1.2	3.7	1.3
Total Debt to Operating Expenses (x)	0.4	0.2	0.7	0.4	1.2	0.4
Monthly Days Cash on Hand (x)	194	407	261	123	344	285
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	3.9	6.0	2.1	2.7	3.2	2.9
Debt Service to Operating Expenses (%)	3.2%	1.9%	3.6%	3.5%	9.5%	2.9%
Total Debt-to-Cash Flow (x)	2.9	1.4	8.8	3.9	7.3	2.7

Debt Management Policies

NC State's current debt policy is attached.

North Carolina State University
Debt Management Guidelines
Revised June 2018

Summary

Debt financing, especially tax-exempt debt, provides a low-cost source of capital for the University to fund capital investments to achieve its mission and strategic objectives. As the economic landscape continues to evolve and change, the use of debt will become an increasingly important tool that enables our institution to move its strategy forward. In this environment, appropriate financial leverage plays a key role and is considered a long-term component of the University's balance sheet. Given that the University has limited debt repayment resources, the allocation and management of debt is a limited resource. The guidelines provided in this document are the framework by which decisions will be made regarding the issuance of debt to finance particular capital improvements.

Authority

North Carolina General Statutes Chapter 116D Article 3 authorize the Board of Governors of the University of North Carolina (the Board) to issue special obligation bonds for improvements to the facilities of the University of North Carolina System.

Prior to a bond issue, the Board designates the capital improvements financed as "special obligation bond projects" and the University's Board of Trustees approves the issuance of special obligation bonds for those projects.

The State Energy Conservation Finance Act, Article 8 of Chapter 142 of the North Carolina General Statutes authorizes the Board to solicit and, through G.S. 143-64.17A , finance guaranteed energy conservation measures. These financing agreements must have the approval of the Office of State Budget and Management, the State Treasurer, and Counsel of State prior to closing.

Criteria

The University's debt capacity is a limited resource. Only projects that directly or indirectly relate to the mission of the University will be considered for debt financing. In general, projects that will be approved are broader in scope than college, or unit-based, projects. However, certain mission-critical school-based projects can also receive approval. Before beginning the planning-for-fundraising process for any project which might require debt financing, the approval of the Vice Chancellor for Finance and Administration and the Vice Chancellor for University Advancement is required.

Projects financed through a bonding program will have received approval through the NC State Legislature annual non-appropriated capital improvements bill and will have been designated as "special obligation projects" by the North Carolina Board of Governors. Energy conservation measures will have received state agency approval as required.

A project that has a related revenue stream (self-liquidating project) will receive priority consideration. All of these projects must be self-funding, and the use of debt must be supported by an achievable financial plan that includes servicing the debt(including

interest expense), financing related infrastructure and utilities, meeting any new or increased operating costs (including security applications), and providing for appropriate replacement and renovation costs. Any bonded project must have a minimum debt-coverage ratio of 1.25X cash flow-to-debt service (debt service being the annual sum of required minimum principal and interest payments). Energy conservation measures must show that savings will be adequate to service the debt and all annual monitoring costs. Other projects funded by budgetary savings, gifts, and grants will be considered on a case-by-case basis. Any projects that will require gift financing, or include a gift financing component, must be jointly approved by the Vice Chancellor for University Advancement and the Vice Chancellor for Finance and Administration before approaching any prospective donors about gifts to the project. Because of the ancillary costs of projects, the amount of gifts raised must also include an associated endowment for any projects that are to be 100% gift financed. In all cases, institutional strategy and not donor capacity must drive the decision to build a project.

Maintenance of Credit Rating

Maintaining a high credit rating will permit the University to continue to issue debt and finance capital projects at favorable interest rates while meeting its strategic objectives. The University's decision to issue additional debt will be focused on both the strategic importance of the new capital improvement(s) and the change in the overall debt portfolio and any associated impact on the credit rating. The University recognizes that external economic, natural, or other unanticipated events may from time to time affect the creditworthiness of its debt. Nevertheless, the University is committed to ensuring that the overall debt portfolio is prudently managed and all stakeholder interests are balanced. Management will provide the rating agencies with full and timely access to required information.

Methods of Sale

The standard methods of sale are competitive, negotiated, and private placement. University management will evaluate each method of sale and determine the best type for each bond issue.

Financing Team Professionals

Selection of financing team professionals will be accomplished based on guidance from UNC General Administration. Bond Counsel, Financial Advisor, and Underwriter pool will be selected using the RFP (request for proposals) method.

General Revenue Pledge

The University will utilize general revenue secured debt (available funds pledge) for all financing needs, unless for energy conservation measures or other certain projects where management desires to structure specific revenue pledges independent of general revenue projects. The general revenue pledge provides a strong, flexible security that captures the strengths of not only auxiliary and student related revenues, but also of the

University's research programs. General revenue bonds price better than corresponding auxiliary or facilities and administrative cost recovery bonds. Historically, general revenue debt has been subject to fewer operating or financial covenants and lower coverage levels imposed by the market and external constituents.

Refunding

Refunding and/or restructuring opportunities will be evaluated on a regular basis. Costs incurred by the refunding activity will be taken into consideration with a general target of 3% present value savings, but other factors will also be considered, including the impact on the University's overall risk profile, credit ratings, and future debt capacity. The University will also consider refinancing for other strategic reasons including the elimination of certain limitations, covenants, payment obligations, or reserve requirements that reduce flexibility.

Types of Instruments

Tax-exempt debt – The University recognizes the benefits associated with tax-exempt debt, and will manage the tax-exempt portfolio to maximize the use of it subject to changing market conditions and tax laws.

Taxable debt – The University will manage its debt portfolio to implement taxable strategies based primarily on private use considerations, and secondarily on tax laws and current market conditions. Taxable debt is likely to be a perpetual component of the University's liabilities, and will be utilized to fund projects ineligible for tax-exempt financing.

Commercial paper – The University recognizes that a commercial paper (CP) program can provide low-cost working capital and provide bridge financing for projects. However, as with other debt structures, the level of CP outstanding impacts the University's overall debt capacity. The University retains the right to reduce the amount of CP available in the event it needs to increase its tax-exempt and taxable debt capacity.

Variable rate debt – Variable rate debt is a desirable component of a debt portfolio in declining-rate environments, as it provides typically lower rates. The use of variable rate debt does expose the debt portfolio to interest rate fluctuations and often comes with liquidity needs. Therefore, the University will balance the mix of variable and fixed rate debt so that variable is between 0-30% of the total debt portfolio and will include variable interest rate instruments and products when advantageous.

Derivatives –The use of derivative products can be appropriate and advantageous for the purposes of limiting interest rate exposure and reducing debt-service costs. The use of swaps will be employed primarily to enhance the University's financial strategy by managing its variable-rate exposure. Derivative products can help the University lock-in a favorable cost of capital for a future project or to ensure a specific level of cash flow savings for a refinancing. The University's strategic objectives and outlook on the interest-rate environment would determine the appropriate approach.

The University will evaluate potential derivative instruments through evaluation of its variable rate allocation, market and interest rate conditions, and the compensation for undertaking counterparty exposure. The University will evaluate each transaction relative to counterparty, basis, and termination risk. No derivative transaction will be undertaken that is not fully understood by the University or that imposes inappropriate risk on the University.

Public Private Partnerships - Given limited debt capacity and substantial capital needs, opportunities for alternative and non-traditional transaction structures may be considered, including off- balance sheet financings. These transactions are generally more expensive than traditional debt structures because investors view them as inherently riskier transactions, and can come with a cost of capital and transaction and structuring costs that are higher than traditional University debt. Chief considerations in deciding whether to pursue a Public Private Partnership are whether a third party financing model can produce results that are: (1) faster; (2) better; or (3) cheaper. Non-traditional structures can be considered when the economic benefit and likely impact on the University's debt capacity and credit have been determined to be accretive to the mission, the benefits of the potential transaction outweigh the costs, or the transaction best aligns with the long-term vision and strategic plan of the University. If it is determined that the use of third party financing or public private partnerships is closer to University debt than predicted, or if it is perceived to be University debt by University auditors, we will endeavor to use traditional financing methods. For this reason, any public private partnership projects that occur on University-or Endowment-owned land must include the involvement of the University Treasurer. Our debt guidelines anticipate that rating agencies will consider any debt that is built on state-owned or university-owned land for purposes similar to that which is typically financed by special obligation debt to be virtually the same as debt of the University. Economic interest and control drive whether a project is considered to be debt of the University. If the university has an economic interest (i.e. gains the net operating income or participates in the income or losses) and control, then the project is considered by most financing professionals to be materially tied to the University. Ultimately, pursuing this type of financing is also a function of regulations—a project may be feasible but may not be allowed under existing regulations.

Maturity and Debt Service

The useful life of the capital project financed will be taken into consideration when determining the length of financing. No capital project will be financed more than 120% of its useful life. Call features should be structured to provide the highest degree of flexibility relative to cost. Structure of debt service will take into consideration existing debt and future capital plans. In addition, the University's amortization of debt service may be spread along the full yield curve depending on market conditions.

Disclosures and Compliance

The University will review compliance with covenants and requirements under outstanding bond indentures on an annual basis. The University will continue to meet its ongoing disclosure requirements in accordance with SEC rule 15c2-12. The University

will submit financial reports, statistical data, and any other material events as required under outstanding bond indentures. The University will comply with arbitrage requirements on invested bond funds. The University will comply with Internal Revenue Service rules related to private use and use of proceeds on tax-exempt debt.

Use of Benchmarks and Debt Ratios

In order to maintain an understanding of the University's standing in comparison to other like institutions, analysis using standard ratios and benchmarks must be made comparing the University to others in its peer group. This analysis can be used as an ongoing tool in determining trends, weaknesses, and target strengths relating to the debt portfolio, its credit rating, and the health of the institution. On a regular basis, the University will review its ratios and compare them to published benchmarks from the rating agencies and others in its peer group.

The University uses the following key ratios to provide a quantitative assessment of debt affordability and debt capacity. ***Current guidelines, which will be updated annually per the Moody's updated report, establish internal covenant levels that are 15% above the Median level for Aa1 rated peers. A transaction or series of transactions that violate the covenant levels without returning to compliance within 2 years following the transaction will require additional approval and diligence within the long-term (10 year) University plan.***

1. **Financial Leverage (Spendable Cash & Investments to Total Debt):** This ratio highlights the ability of the University to repay bondholders from wealth that can be accessed over time or for a specific purpose. **Internal covenant level = 1.9X.**

$$\frac{\textit{Cash and Investments (University and Affiliated Foundations) + Funds Held in Trust by Others + Pledges Receivable Reported in Permanently Restricted Net Assets – Permanently Restricted Net Assets}}{\textit{Total Debt}}$$

2. **Debt Affordability (Total Debt to Cash Flow):** Measures the ability of the University to repay its debt from the profitability of its current operations, as opposed to financial reserves, and is a measure of debt affordability. **Internal covenant level = 3.8X**

$$\frac{\textit{Total Debt}}{\textit{Operating Income + Depreciation + Amortization + Interest + Other Non-Cash Expenses}}$$

3. **Total Debt to Operating Revenue:** Measures the University's debt load relative to the scope of its current operations, economies of scale, and brand recognition. **Internal covenant level = 0.45X.**

$$\frac{\textit{Total Debt}}{\textit{Operating Revenue}}$$

Indirect Debt

The University understands that debt issued by affiliated foundations can have an effect on the University's bond rating. University management will take steps to be aware of and participate in debt discussions and new borrowings undertaken by those affiliated entities. As per Operating Guidelines for Associated Entities, all debt that exceeds $500K for major associated entities and $100K for minor associated entities must be approved by the Vice Chancellor for Finance and Administration.

Centralized Lending and Blended Portfolio

The University has adopted a central loan program under which it provides funding for projects under the guidance of the Vice Chancellor for Finance and Administration and the University Treasurer. The benefits of this program include: (i) structuring of transactions on an aggregate basis, rather than by project; (ii) continual access to capital for borrowers; (iii) predictable financial terms for borrowers; (iv) minimizing interest rate volatility; (v) permitting prepayment of loans at any time without penalty; and (vi) equity for borrowers through a blended rate.

The University charges a blended rate to its borrowers based on its cost of funding. This interest rate may change periodically to reflect changes in the University's average aggregate expected long-term cost of borrowing. The blended rate may also include a reserve for interest rate stabilization or other purposes.

Each borrower is responsible for the repayment of all funds borrowed from the central loan program, plus interest, regardless of the internal or external source of funds. The University provides for flexible financing terms in order to accommodate individual entities as determined by the project scope and repayment source. The Director of Strategic Debt Management is the primary contact for divisional and auxiliary loans.

May 19, 2020

The University of North Carolina System Debt Capacity Study – Fiscal Year 2019

University of North Carolina at Asheville

Institution Report

University of North Carolina at Asheville

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), University of North Carolina at Asheville ("*UNC Asheville*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. UNC Asheville has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, UNC Asheville, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—UNC Asheville has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, UNC Asheville's debt capacity reflects the amount of debt UNC Asheville could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that UNC Asheville intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- UNC Asheville's current debt profile, including project descriptions financed with, and the sources of repayment for, UNC Asheville's outstanding debt;
- UNC Asheville's current credit profile, along with recommendations for maintaining or improving UNC Asheville's credit rating; and
- A copy of any UNC Asheville debt management policy currently in effect.

Overview of UNC Asheville

For the fall 2018 semester, UNC Asheville had a headcount student population of approximately 3,762, including 3,743 undergraduate students and 19 graduate and doctoral students. During the 2018-19 academic year, UNC Asheville employed approximately 243 full-time, part-time and temporary instructional faculty.

Over the past 5 years, UNC Asheville's enrollment has declined by 2%. UNC Asheville's average age of plant (17.03 years), which is higher than the median ratio for all institutions (14.53). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs. UNC Asheville does not anticipate significant additional borrowings during the Study Period. UNC Asheville has made no changes to the financial model's standard growth assumptions, which are based on the consumer price index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- **Because UNC Asheville refunded debt after June 30, 2019**, outstanding debt service is based on UNC Asheville's outstanding debt **as of June 30, 2020 per the current debt amortization schedules**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to UNC Asheville by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt UNC Asheville expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.

Obligated Resources

1	2	3	4	5	6
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	34,521,431	4,312,744	-		38,834,175
2016	35,706,875	3,180,561	-	0.14%	38,887,436
2017	35,636,978	3,634,302	-	0.99%	39,271,280
2018	(74,574,924)	4,534,689	108,613,930	-1.78%	38,573,695
2019	(69,981,912)	5,400,597	104,773,274	4.20%	40,191,959
2020	40,875,223	-	-	1.70%	40,875,223
2021	41,570,102	-	-	1.70%	41,570,102
2022	42,276,793	-	-	1.70%	42,276,793
2023	42,995,499	-	-	1.70%	42,995,499
2024	43,726,422	-	-	1.70%	43,726,422

Operating Expenses

Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	87,231,505	835,396	-		88,066,901
2016	90,880,057	1,017,561	-	4.35%	91,897,618
2017	93,853,144	(529,585)	-	1.55%	93,323,559
2018	95,203,105	(1,015,668)	(102,672)	0.82%	94,084,765
2019	93,829,883	(909,519)	3,865,342	2.87%	96,785,706
2020	98,431,063	-	-	1.70%	98,431,063
2021	100,104,391	-	-	1.70%	100,104,391
2022	101,806,166	-	-	1.70%	101,806,166
2023	103,536,871	-	-	1.70%	103,536,871
2024	105,296,997	-	-	1.70%	105,296,997

Outstanding Debt

7	8	9	10	11
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	2,143,500	2,702,001	4,845,501	76,493,600
2021	2,132,700	3,219,397	5,352,097	74,360,900
2022	2,257,500	3,147,204	5,404,704	72,103,400
2023	2,385,700	3,069,565	5,455,265	69,717,700
2024	2,852,500	2,989,417	5,841,917	66,865,200
2025	3,028,800	2,865,131	5,893,931	63,836,400
2026	3,234,600	2,740,537	5,975,137	60,601,800
2027	3,357,800	2,608,261	5,966,061	57,244,000
2028	2,763,000	2,470,441	5,233,441	54,481,000
2029	2,857,000	2,371,880	5,228,880	51,624,000
2030	2,879,000	2,266,012	5,145,012	48,745,000
2031	2,645,000	2,147,000	4,792,000	46,100,000
2032	2,760,000	2,030,450	4,790,450	43,340,000
2033	2,875,000	1,908,800	4,783,800	40,465,000
2034	3,020,000	1,765,050	4,785,050	37,445,000
2035	3,170,000	1,614,050	4,784,050	34,275,000
2036	3,295,000	1,487,250	4,782,250	30,980,000
2037	3,425,000	1,355,450	4,780,450	27,555,000
2038	3,555,000	1,218,450	4,773,450	24,000,000
2039	3,725,000	1,055,200	4,780,200	20,275,000
2040	3,885,000	884,100	4,769,100	16,390,000
2041	2,435,000	705,500	3,140,500	13,955,000
2042	2,555,000	583,750	3,138,750	11,400,000
2043	2,685,000	456,000	3,141,000	8,715,000
2044	2,795,000	348,600	3,143,600	5,920,000
2045	2,900,000	236,800	3,136,800	3,020,000
2046	3,020,000	120,800	3,140,800	-

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Net Assets Without Donor Restrictions plus Foundation Net Assets Subject to Expenditure for a Specified Purpose minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projection period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Net Assets Without Donor Restrictions	Foundation Subject to Expenditure for Specified Purpose Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	9,225,436	6,604,146	2,117,611	13,680,483	1,190,714		4,312,744	34,749,707
2016	10,154,248	7,495,210	2,076,993	11,701,883	1,403,347	-4.44%	3,180,561	33,205,548
2017	9,854,826	10,300,824	2,545,266	12,386,441	2,918,590	7.82%	3,634,302	35,803,069
2018	(99,472,480)	13,368,171	2,817,730	14,603,294	5,178,039	8.93%	112,860,152	38,998,828
2019	(99,113,603)	20,695,906	2,707,180	15,711,816	9,343,277	4.70%	110,173,871	40,831,893
2020	11,248,293	21,047,736	2,753,202	15,978,917	9,502,113	1.70%	-	41,526,035
2021	11,439,514	21,405,548	2,800,006	16,250,558	9,663,649	1.70%	-	42,231,978
2022	11,633,985	21,769,442	2,847,607	16,526,818	9,827,931	1.70%	-	42,949,921
2023	11,831,763	22,139,523	2,896,016	16,807,774	9,995,006	1.70%	-	43,680,070
2024	12,032,903	22,515,894	2,945,248	17,093,506	10,164,921	1.70%	-	44,422,631

3. Proposed Debt Financings

While UNC Asheville evaluates its capital investment needs on a regular basis, UNC Asheville currently has no legislatively approved projects that it anticipates financing during the Study Period.

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** UNC Asheville's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

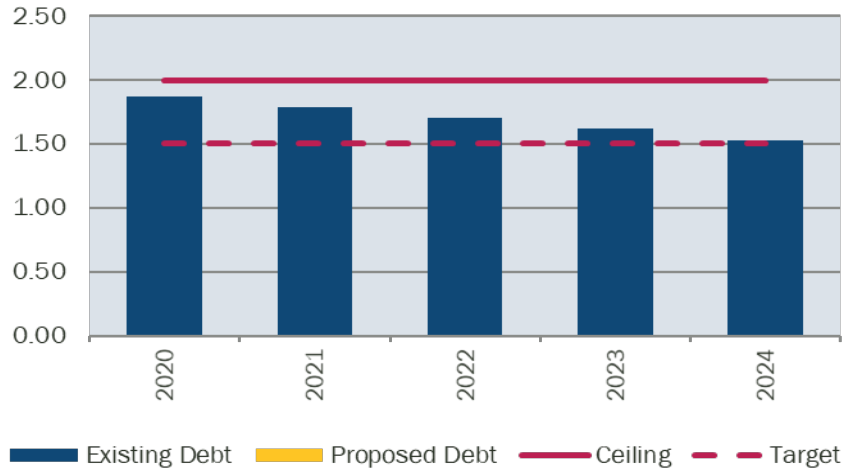
- Target Ratio: 1.50
- Ceiling Ratio: Not to exceed 2.00
- Projected 2020 Ratio: 1.87
- Highest Study Period Ratio: 1.87 (2020)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	40,875,223	1.70%	76,493,600	-	1.87	n/a	1.87
2021	41,570,102	1.70%	74,360,900	-	1.79	n/a	1.79
2022	42,276,793	1.70%	72,103,400	-	1.71	n/a	1.71
2023	42,995,499	1.70%	69,717,700	-	1.62	n/a	1.62
2024	43,726,422	1.70%	66,865,200	-	1.53	n/a	1.53

Debt to Obligated Resources



5-Year Payout Ratio Overview

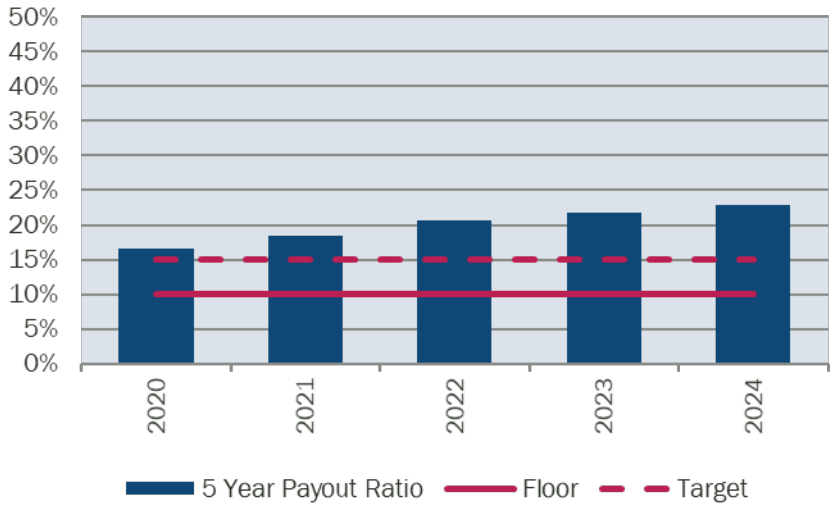
- **What does it measure?** The percentage of UNC Asheville's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

- Target Ratio: 15%
- Floor Ratio: Not less than 10%
- Projected 2020 Ratio: 17%
- Lowest Study Period Ratio: 17% (2020)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	76,493,600	17%
2021	74,360,900	19%
2022	72,103,400	21%
2023	69,717,700	22%
2024	66,865,200	23%

5-Year Payout Ratio



Expendable Resources to Debt

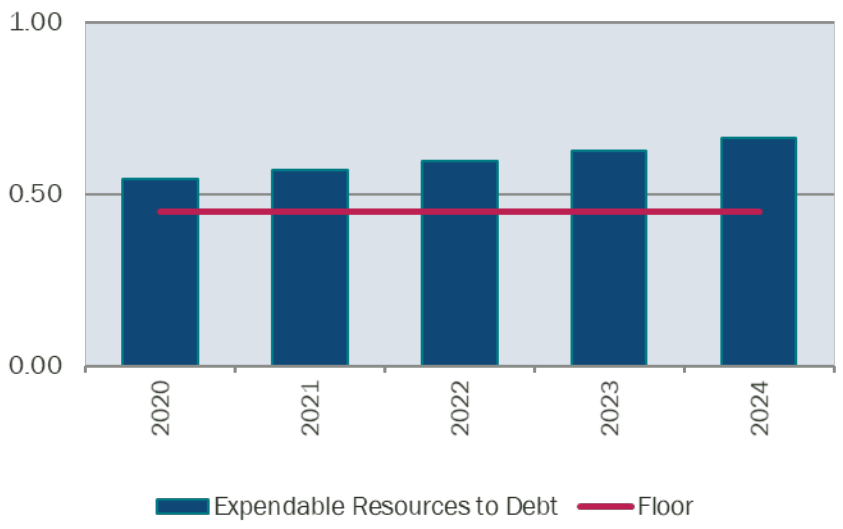
- **What does it measure?** The number of times UNC Asheville's liquid and expendable net position covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

- Floor Ratio: Not less than 0.45x
- Projected 2020 Ratio: 0.85x
- Lowest Study Period Ratio: 0.85x (2020)

Expendable Resources to Debt

1	2	3	4	5	6	7
Expendable Resources to Debt						
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	41,526,035	1.70%	76,493,600	-	0.54	0.54
2021	42,231,978	1.70%	74,360,900	-	0.57	0.57
2022	42,949,921	1.70%	72,103,400	-	0.60	0.60
2023	43,680,070	1.70%	69,717,700	-	0.63	0.63
2024	44,422,631	1.70%	66,865,200	-	0.66	0.66

Expendable Resources to Debt



Debt Service to Operating Expenses

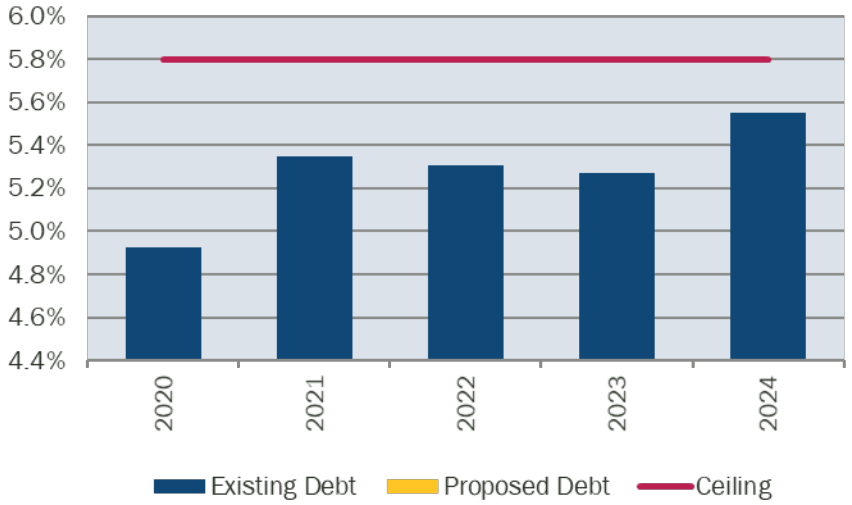
- **What does it measure?** UNC Asheville's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

- Policy Ratio: Not to exceed 5.80%
- Projected 2020 Ratio: 4.92%
- Highest Study Period Ratio: 5.55% (2024)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	98,431,063	1.70%	4,845,501	-	4.92%	n/a	4.92%
2021	100,104,391	1.70%	5,352,097	-	5.35%	n/a	5.35%
2022	101,806,166	1.70%	5,404,704	-	5.31%	n/a	5.31%
2023	103,536,871	1.70%	5,455,265	-	5.27%	n/a	5.27%
2024	105,296,997	1.70%	5,841,917	-	5.55%	n/a	5.55%

Debt Service to Operating Expenses



5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, UNC Asheville's debt capacity is based on the amount of debt UNC Asheville could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, UNC Asheville's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.[1]
- Based solely on the **debt to obligated resources** ratio, UNC Asheville has $5,256,846 estimated debt capacity for fiscal year 2020. After taking into account any legislatively approved projects detailed in **Section 3** above, if UNC Asheville issued no additional debt until the last year of the Study Period, then UNC Asheville's debt capacity for 2024 is projected to increase to **$20,587,645.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	1.87	2.00	5,256,846
2021	1.79	2.00	8,779,303
2022	1.71	2.00	12,450,187
2023	1.62	2.00	16,273,298
2024	1.53	2.00	20,587,645

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of UNC Asheville's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" <u>does not</u> necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- **If UNC Asheville were to use all of its calculated debt capacity during the Study Period, UNC Asheville's credit ratings may face significant downward pressure**.
- Projecting the exact amount UNC Asheville could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **<u>Use of Multiple Factors</u>**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.

- **The State's Impact**
  - In assessing each institution's credit rating, rating agencies also consider the State's credit rating and demographic trends, the health of its pension system, the level of support it has historically provided to the institution, and any legislation or policies affecting Campus operations.
  - Historically, each institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
  - If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.
- **Factor Interdependence**
  - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
  - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
  - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
  - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

UNC Asheville's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 2005A	North Carolina System Pool Revenue Bonds	450,000	4/1/2020	Dormitory and Dining Hall Projects Dormitory and Dining Hall Projects	1997C 1997D	Housing and Dining Revenues Housing and Dining Revenues
Series 2010	Taxable General Revenue Bonds (BABs)	23,940,000	6/1/2040	Overlook Hall Construction Governor's Village Renovation		Housing and Dining Revenues Housing and Dining Revenues
Series 2010C	North Carolina System Pool Revenue Bonds	2,215,000	10/1/2024	New Residence Hall	2002A	Housing and Dining Revenues
Series 2012D	Revenue Refunding Bonds (U.S. Bank)	2,810,100	6/1/2027	New Residence Hall	2002A	Housing and Dining Revenues
Series 2013A	General Revenue Bond (SunTrust)	3,416,000	4/1/2030	Acquisition and Renovation of MAHEC Facility Campus Security Facilities Improvements		Health Services Student Fee Overhead Receipts and Endowment Administrative Fees
Series 2013B	Taxable General Revenue Refunding Bonds (TD Bank)	1,553,000	4/1/2023	Dormitory and Dining Hall Projects	2005A	Housing and Dining Revenues
Series 2014	General Revenue Bonds (SunTrust)	753,000	6/1/2029	Karl Strauss Track Building Student Recreation Center Improvments		Athletics Student Fee Athletics Student Fee
Series 2017	General Revenue Bonds	46,040,000	6/1/2046	New Residence Hall Highsmith Renovations		Housing Revenues Student Fees
Total		81,177,100				

Approved by the UNC Board of Governors on May 20, 2020

7. Credit Profile

The following page provides a snapshot of UNC Asheville's current credit ratings, along with (1) a summary of various credit factors identified in UNC Asheville's most recent rating report and (2) recommendations for maintaining and improving UNC Asheville's credit ratings in the future.

Credit Profile of the University – (General Revenue)

Overview

- Moody's maintains an A1 rating on UNC Asheville's general revenue bonds. The outlook is negative.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-
Non Investment Grade		

Key Information Noted in Reports

Credit Strengths

- Strong financial support for operations and capital projects from the Aaa-rated state of North Carolina
- Very good strategic positioning supported by clear strategic direction, favorable location in a vibrant city and market niche as a public liberal arts university
- Operating appropriations from the state have increased 9% since FY 2013-14 and moderate increases are expected to continue

Credit Challenges

- Thin operating performance and low unrestricted liquidity compared to peers
- Limited prospects for significant improvement in unrestricted liquidity relative to expenses
- State-imposed tuition pricing constraints limit pricing flexibility and will likely suppress tuition revenue growth

Recommendations & Observations

- Continue proactive management of operating cash flow margin, which has improved since FY2014.
- Continue to develop initiatives to highlight and strengthen UNC Asheville's distinctive market position.

Approved by the UNC Board of Governors on May 20, 2020

8. Peer Comparison

Moody's Key Credit Ratios	University of North Carolina Asheville	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2019	St. Mary's College of Maryland	Ramapo College of New Jersey	Fort Lewis College	Truman State University	
Most Senior Rating	A1	A2	A2	A2	A1	A1
Total Debt ($, in millions)	85	30	230	48	50	113
Total Cash & Investments ($, in millions)	82	71	96	57	139	219
Operating Revenue ($, in millions)	95	64	159	74	105	250
Operating Expenses ($, in millions)	96	65	157	74	104	240
Market Performance Ratios						
Annual Change in Operating Revenue (%)	4.1%	-3.3%	1.9%	2.9%	-2.0%	2.7%
Operating Ratios						
Operating Cash Flow Margin (%)	8.6%	-3.3%	15.1%	13.5%	15.6%	11.9%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	0.9	1.1	0.6	0.8	1.3	1.0
Total Debt to Operating Expenses (x)	0.9	0.5	1.5	0.6	0.5	0.5
Monthly Days Cash on Hand (x)	67	155	190	179	378	155
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	1.0	2.4	0.4	1.2	2.8	1.9
Debt Service to Operating Expenses (%)	6.2%	5.6%	9.4%	5.3%	4.5%	4.9%
Total Debt-to-Cash Flow (x)	10.4	4.2	9.6	4.8	3.1	4.9

Debt Management Policies

UNC Asheville's current debt policy is attached.

Debt Management Policy

December 16, 2016

University of North Carolina at Asheville

Approved by the UNC Board of Governors on May 20, 2020

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1. Introduction

The University of North Carolina at Asheville ("UNCA") views its debt capacity as a limited resource that should be used, when appropriate, to help fund the capital investments necessary for the successful implementation of UNCA's strategic vision to provide its students the opportunity, within a diverse and inclusive community, to experience liberal arts education at its best, while preserving the operational flexibility and resources necessary to support UNCA's current and future programming. UNCA recognizes the important role that the responsible stewardship of its financial resources will play as UNCA seeks to invest in its campus and related infrastructure in a manner that is economically, socially and environmentally sustainable.

This Policy has been developed to assist UNCA's efforts to manage its debt on a long-term, portfolio basis and in a manner consistent with UNCA's capital improvement plan, stated policies, objectives and core values. Like other limited resources, UNCA's debt capacity should be used and allocated strategically and equitably, taking into account the benefits and burdens for both current and future students.

Specifically, the objective of this Policy is to provide a framework that will enable UNCA's Board of Trustees (the "Board") and finance staff to:

(i) Identify and prioritize projects eligible for debt financing;

(ii) Limit and manage risk within UNCA's debt portfolio;

(iii) Establish debt management guidelines and quantitative parameters for evaluating UNCA's financial health, debt affordability and debt capacity;

(iv) Manage and protect UNCA's credit profile in order to maintain UNCA's credit rating at a strategically optimized level and maintain access to the capital markets; and

(v) Ensure UNCA remains in compliance with all of its post-issuance obligations and requirements.

This Policy is intended solely for UNCA's internal planning purposes. The Vice Chancellor for Administration & Finance will review this Policy annually and, if necessary, recommend changes to ensure that it remains consistent with University's strategic objectives and the evolving demands and accepted practices of the public higher education marketplace. Proposed changes to this Policy are subject to the Board's approval.

2. Authorization and Oversight

UNCA's Vice Chancellor for Administration & Finance is responsible for the day-to-day management of UNCA's financial affairs in accordance with the terms of this Policy and for all of UNCA's debt financing activities. Each University financing will conform to all applicable State and Federal laws.

The Board will consider for approval each proposed financing in accordance with the requirements of any applicable State law.

3. Process for Identifying and Prioritizing Capital Projects Requiring Debt

Only projects that directly or indirectly relate to the mission of UNCA will be considered for debt financing.

(i) Self-Liquidating Projects – A project that has a related revenue stream (self-liquidating project) will receive priority consideration. Each self-liquidating project financing must be supported by an achievable plan of finance that provides, or identifies sources of funds, sufficient to (1) service the debt associated with the project, (2) pay for any related infrastructure improvements, (3) cover any new or increased operating costs and (4) fund appropriate reserves for anticipated replacement and renovation costs.

(ii) Energy Conservation Projects – Each energy conservation project financing must provide annual savings sufficient to service the applicable debt and all related monitoring costs.

(iii) Other Projects – Other projects funded through budgetary savings, gifts and grants will be considered on a case-by-case basis. Any projects that will require gift financing or include a gift financing component must be jointly approved by the Vice Chancellor for University of Advancement and the Vice Chancellor for Administration & Finance before any project-restricted donations are solicited. The fundraising goal for any project to be financed primarily with donations should also include, when feasible, an appropriately-sized endowment for deferred maintenance and other ancillary ownership costs. In all cases, institutional strategy, and not donor capacity, must drive the decision to pursue any proposed project.

4. Benchmarks and Debt Ratios

Overview

When evaluating its current financial health and any proposed plan of finance, UNCA takes into account both its debt affordability and its debt capacity. Debt affordability focuses on UNCA's cash flows and measures UNCA's ability to service its debt through its operating budget and identified revenue streams. Debt capacity, on the other hand, focuses on the relationship between UNCA's net assets and its total debt outstanding.

Debt capacity and affordability are impacted by a number of factors, including UNCA's enrollment trends, reserve levels, operating performance, ability to generate additional revenues to support debt service, competing capital improvement or programmatic needs, and general market conditions. Because of the number of potential variables, UNCA's debt capacity cannot be calculated based on any single ratio or even a small handful of ratios.

UNCA believes, however, that it is important to consider and monitor objective metrics when evaluating UNCA's financial health and its ability to incur additional debt. To that end, UNCA has identified four key financial ratios that it will use to assess its ability to absorb additional debt based on its current and projected financial condition:

(i) Debt to Obligated Resources

(ii) Five-Year Payout Ratio

(iii) Expendable Resources to Debt

(iv) Debt Service to Operating Expenses

Note that the selected financial ratios are the same benchmarks monitored as part of the debt capacity study for The University of North Carolina delivered each year under Article 5 of Chapter 116D of the North Carolina General Statutes (the "UNC Debt Capacity Study"), which UNCA believes will promote clarity and consistency in UNCA's debt management and planning efforts.

UNCA has established for each ratio a floor or ceiling target, as the case may be, with the expectation that UNCA will operate within the parameters of those ratios most of the time. To the extent possible, the policy ratios established from time to time in this Policy should align with the ratios used in the report UNCA submits each year as part of the UNC Debt Capacity Study. The policy ratios have been established to help preserve UNCA's financial health and operating flexibility and to ensure UNCA is able to access the market to address capital needs or to take advantage of potential refinancing opportunities. Attaining or maintaining a specific credit rating is not an objective of this Policy.

UNCA recognizes that the policy ratios, while helpful, have limitations and should not be viewed in isolation of UNCA's strategic plan or other planning tools. In accordance with the recommendations set forth in the initial UNC Debt Capacity Study delivered April 1, 2016, UNCA has developed as part of this Policy specific criteria for evaluating and, if warranted, approving critical infrastructure projects even when UNCA has limited debt capacity as calculated by the UNC Debt Capacity Study or the benchmark ratios in this Policy. In such instances, the Board may approve the issuance of debt with respect to a proposed project based on one or more of the following findings:

(i) The proposed project would generate additional revenues (including, if applicable, dedicated student fees or grants) sufficient to support the financing, which revenues are not currently captured in the benchmark ratios.

(ii) The proposed project would be financed entirely with private donations based on pledges already in hand.

(iii) The proposed project is essential to the implementation of one of the Board's strategic priorities.

(iv) The proposed project addresses life and safety issues or addresses other critical infrastructure needs.

(v) Foregoing or delaying the proposed project would result in significant additional costs to UNCA or would negatively impact UNCA's credit rating.

At no point, however, should UNCA intentionally operate outside an established policy ratio without conscious and explicit planning.

Ratio 1 – Debt to Obligated Resources

What does it measure? UNCA's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt under the General Revenue Bond Statutes

Why is it tracked? The ratio, which is based on the legal structure proscribed by the General Revenue Bond Statutes, provides a general indication of UNCA's ability to absorb debt on its balance sheet and is the primary ratio used to calculate UNCA's "debt capacity" under the methodology used in the UNC Debt Capacity Study

How is it calculated? Aggregate debt* divided by obligated resources**

Policy Ratio: Not to exceed 2.0x (UNC Debt Capacity Study Target Ratio = 1.50x)

* As used throughout this Policy, "aggregate debt" includes UNCA's energy savings contracts, which, in accordance with State law, are excluded from the UNC Debt Capacity Study.

* "Available Funds," which is the concept commonly used to capture each UNC's campus's obligated resources in its loan and bond documentation, has been used as a proxy for "obligated resources." The two concepts are generally identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of UNCA's obligated resources.

Ratio 2 – Five-Year Payout Ratio Overview

What does it measure? The percentage of UNCA's debt scheduled to be retired in the next five years

Why is it tracked? The ratio measures how aggressively UNCA is amortizing its debt and is a ratio that is monitored in the UNC Debt Capacity

How is it calculated? Aggregate principal to be paid in the next five years divided by aggregate debt

Policy Ratio: Not less than 10% (UNC Debt Capacity Study Target Ratio = 15%)

Ratio 3 – Expendable Resources to Debt

What does it measure? The number of times UNCA's liquid and expendable net assets covers its aggregate debt

Why is it tracked? The ratio, which is widely tracked by rating agencies and other capital market participants, is a basic measure of financial health and assesses UNCA's ability to settle its debt obligations using only its available net assets as of a particular date

How is it calculated? The sum of (1) Adjusted Unrestricted Net Assets and (2) Restricted Expendable Net Assets divided by aggregate debt

Policy Ratio: Not less than 0.45x

Ratio 4 – Debt Service to Operating Expenses

What does it measure? UNCA's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues

Why is it tracked? The ratio, which is widely tracked by rating agencies and other capital market participants, evaluates UNCA's relative cost of borrowing to its overall expenditures and provides a measure of UNCA's budgetary flexibility

How is it calculated? Annual debt service divided by annual operating expenses

Policy Ratio: Not to exceed 5.80%

Reporting

The Vice Chancellor for Administration & Finance will review each ratio in connection with the delivery of the University's audited financials and will provide an annual report to the Board detailing (1) the calculation of each ratio for that fiscal year and (2) an explanation for any ratio that falls outside the University's stated policy ratio, along with (a) any applicable recommendations, strategies and an expected timeframe for aligning such ratio with the University's stated policy or (b) the rationale for any recommended changes to any such stated policy ratio going forward (including any revisions necessitated by changes in accounting standards or rating agency methodologies).

5. Debt Portfolio Management and Transaction Structure Considerations

Generally

Numerous types of financing structures and funding sources are available, each with specific benefits, risks, and costs. Potential funding sources and structures will be reviewed and considered by the Vice Chancellor for Administration & Finance within the context of this Policy and the overall portfolio to ensure that any financial product or structure is consistent with UNCA's stated objectives. As part of effective debt management, UNCA must also consider its investment and cash management strategies, which influence the desired structure of the debt portfolio.

Method of Sale

UNCA will consider various methods of sale on a transaction-by-transaction basis to determine which method of sale (i.e., competitive, negotiated or private placement) best serves UNCA's strategic plan and financing objectives. In making that determination, UNCA will consider, among other factors: (1) the size and complexity of the issue, (2) the current interest rate environment and other market factors (such as bank and investor appetite) that might affect UNCA's cost of funds, and (3) possible risks associated with each method of sale (e.g., rollover risk associated with a financing that is privately placed with a bank for a committed term that is less than the term of the financing).

Tax Treatment

When feasible and appropriate for the particular project, the use of tax-exempt debt is generally preferable to taxable debt. Issuing taxable debt may reduce UNCA's overall debt affordability due to higher rates but may be appropriate for projects that do not qualify for tax-exemption, or that may require interim funding. For example, taxable debt may be justified if it sufficiently mitigates UNCA's ongoing administrative and compliance risks. When used, taxable debt should be structured to provide maximum repayment flexibility and rapid principal amortization.

Structure and Maturity

To the extent practicable, UNCA should structure its debt to provide for level annual payments of debt service, though UNCA may elect alternative structures when the Vice Chancellor for Administration & Finance determines it to be in UNCA's best interest. In addition, when financing projects that are expected to be self-supporting (such as a revenue-producing facility or a facility to be funded entirely through a dedicated fundraising campaign), the debt service may be structured to match future anticipated receipts.

UNCA will use maturity structures that correspond with the life of the facilities financed, not to exceed the maximum term authorized under applicable State law (currently 30 years). Equipment should be financed for a period not to exceed 120% of its useful life. Such determinations may be made on a blended basis, taking into account all assets financed as part of a single debt offering. As market dynamics change, maturity structures should be reevaluated. Call features should be structured to provide the highest degree of flexibility relative to cost.

Variable Rate Debt

UNCA recognizes that a degree of exposure to variable interest rates within UNCA's debt portfolio may be desirable in order to (1) take advantage of repayment or restructuring flexibility, (2) benefit from historically lower average interest costs and (3) provide a "match" between debt service requirements and the projected cash flows from UNCA's assets. UNCA's debt portfolio should be managed to ensure that no more than 20% of UNCA's total debt bears interest at an unhedged variable rate.

UNCA's finance staff will monitor overall interest rate exposure and will analyze and quantify potential risks, including interest rate, liquidity and rollover risks. UNCA may manage the liquidity risk of variable rate debt either through its own working capital/investment portfolio, the type of instrument used, or by using third party sources of liquidity. UNCA may manage interest rate risk in its portfolio through specific budget and central bank management strategies or through the use of derivative instruments.

Debt Related to Public Private Partnerships

To address UNCA's anticipated capital needs as efficiently and prudently as possible, UNCA may choose to explore and consider opportunities for alternative and non-traditional transaction structures (collectively, "P3 Arrangements").

UNCA will pursue P3 Arrangements only when UNCA has determined that (1) a traditional financing alternative is not feasible, (2) a P3 Arrangement will likely produce construction or overall operating results that are superior, faster or more efficient than a traditional delivery model or (3) a P3 Arrangement serves one of the Board's broader strategic objectives (e.g., a decision that operating a particular auxiliary function is no longer consistent with UNCA's core mission).

P3 Arrangements will receive increased scrutiny if the Vice Chancellor for Administration & Finance determines, in consultation with UNCA's advisors, that the P3 Arrangement will be viewed as "on-credit" (i.e., treated as University debt) by UNCA's auditors or outside rating agencies. When evaluating whether the P3 Arrangement should be viewed as "on-credit," rating agencies consider UNCA's economic interest in the project and the level of control it exerts over the project. Further, rating agencies will generally treat a P3 Arrangement as University debt if the project is located on UNCA's campus or if the facility is to be used for an essential University function. For this reason, any P3 Arrangement for a university-related facility to be located on land owned by the State, UNCA or a UNCA affiliate must be approved in advance by the Vice Chancellor for Administration & Finance.

Refunding Considerations

UNCA will actively monitor its outstanding debt portfolio for refunding or restructuring opportunities. Absent a compelling economic or strategic reason to the contrary, UNCA should evaluate opportunities to issue bonds for the purpose of refunding existing debt obligations of UNCA ("Refunding Bonds") using the following general guidelines:

(i) The life of the Refunding Bonds should not exceed the remaining life of the bonds being refunded.

(ii) Refunding Bonds issued to achieve debt service savings should have a target savings level measured on a present net value basis of at least 3% of the par amount refunded.

(iii) Refunding Bonds that do not achieve debt service savings may be issued to restructure debt or provisions of bond documents if such refunding serves a compelling interest.

(iv) Refunding Bonds may also be issued to relieve UNCA of certain limitations, covenants, payment obligations or reserve requirements that reduce operational flexibility.

Financing Team Professionals

UNCA will generally select its financial advisors, underwriters, lenders and bond counsel through a request for proposal process. Firms providing financial advisory and bond counsel services are generally selected for a specific period of time rather than for individual transactions, while underwriters and lenders will be selected

on a transaction-by-transaction basis. Additionally, UNCA may use the financial advisors, underwriters and bond counsel selected by General Administration through its own similar competitive process.

6. Derivative Products

UNCA recognizes that derivative products may provide for more flexible management of the debt portfolio. In certain circumstances, interest rate swaps and other derivatives permit UNCA to adjust its mix of fixed- and variable-rate debt and manage its interest rate exposures. Derivatives may also be an effective way to manage liquidity risks. UNCA will use derivatives only to manage and mitigate risk; UNCA will not use derivatives to create leverage or engage in speculative transactions.

As with underlying debt, UNCA's finance staff will evaluate any derivative product comprehensively, taking into account its potential costs, benefits and risks, including, without limitation, any tax risk, interest rate risk, liquidity risk, credit risk, basis risk, rollover risk, termination risk, counterparty risk, and amortization risk. Before entering into any derivative product, the Vice Chancellor for Administration & Finance must (1) conclude, based on the advice of a reputable swap advisor, that the terms of any swap transaction are fair and reasonable under current market conditions and (2) ensure that UNCA's finance staff has a clear understanding of the proposed transaction's costs, cash flow impact and reporting treatment.

UNCA will use derivatives only when the Vice Chancellor for Administration & Finance determines, based on the foregoing analysis, that the instrument provides the most effective method for accomplishing UNCA's strategic objectives without imposing inappropriate risks on UNCA.

7. Post-Issuance Compliance Matters

To the extent UNCA adopts any formal policies relating to post-issuance compliance matters after the effective date of this Policy, the Vice Chancellor for Administration & Finance will attach each such policy as **Appendix A** to this Policy.

May 19, 2020

The University of North Carolina System Debt Capacity Study – Fiscal Year 2019

University of North Carolina at Chapel Hill

Institution Report

Approved by the UNC Board of Governors on May 20, 2020

University of North Carolina at Chapel Hill

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1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), University of North Carolina at Chapel Hill ("*UNC-Chapel Hill*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. UNC-Chapel Hill has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, UNC-Chapel Hill, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—UNC-Chapel Hill has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, UNC-Chapel Hill's debt capacity reflects the amount of debt UNC-Chapel Hill could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that UNC-Chapel Hill intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- UNC-Chapel Hill's current debt profile, including project descriptions financed with, and the sources of repayment for, UNC-Chapel Hill's outstanding debt;
- UNC-Chapel Hill's current credit profile, along with recommendations for maintaining or improving UNC-Chapel Hill's credit rating; and
- A copy of any UNC-Chapel Hill debt management policy currently in effect.

Overview of UNC-Chapel Hill

For the fall 2018 semester, UNC-Chapel Hill had a headcount student population of approximately 30,011, including 19,117 undergraduate students and 10,894 graduate and doctoral students. During the 2018 academic year, UNC-Chapel Hill employed approximately 2,541 full-time, part-time and temporary instructional faculty.

Over the past 5 years, UNC-Chapel Hill's enrollment has increased approximately 3%. UNC-Chapel Hill anticipates incurring approximately $109.9 million in additional debt during the Study Period, as summarized in **Section 3** below. UNC-Chapel Hill's average age of plant (14.66 years) is higher than the median ratio for all institutions (14.53 years) and generally indicates UNC-Chapel Hill is taking a sustainable approach to its deferred maintenance and reinvestment programs

UNC-Chapel Hill has made no changes to the financial model's standard growth assumptions, which are based on the Consumer Price Index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Outstanding debt service is based on UNC-Chapel Hill's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to UNC-Chapel Hill by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt UNC-Chapel Hill expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below overstate UNC-Chapel Hill's current debt burden.

1	2	3	4	5	6
		Obligated Resources			
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	1,458,352,315	130,260,685	-		1,588,613,000
2016	1,123,948,754	99,242,931	-	-23.00%	1,223,191,685
2017	2,269,797,575	106,146,356	-	94.24%	2,375,943,931
2018	(1,059,270,167)	121,048,211	3,059,283,069	-10.73%	2,121,061,113
2019	(576,328,543)	134,479,885	2,923,806,836	17.01%	2,481,958,178
2020	2,524,151,467	-	-	1.70%	2,524,151,467
2021	2,567,062,042	-	-	1.70%	2,567,062,042
2022	2,610,702,097	-	-	1.70%	2,610,702,097
2023	2,655,084,032	-	-	1.70%	2,655,084,032
2024	2,700,220,461	-	-	1.70%	2,700,220,461

		Operating Expenses			
Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	2,924,683,602	24,378,611	-		2,949,062,213
2016	2,827,248,586	30,967,249	-	-3.08%	2,858,215,835
2017	3,013,411,532	(6,758,965)	-	5.19%	3,006,652,567
2018	3,044,426,228	(14,213,078)	29,050,119	1.75%	3,059,263,269
2019	3,050,681,301	(12,351,444)	137,200,686	3.80%	3,175,530,543
2020	3,229,514,562	-	-	1.70%	3,229,514,562
2021	3,284,416,310	-	-	1.70%	3,284,416,310
2022	3,340,251,387	-	-	1.70%	3,340,251,387
2023	3,397,035,661	-	-	1.70%	3,397,035,661
2024	3,454,785,267	-	-	1.70%	3,454,785,267

7	8	9	10	11
		Outstanding Debt		
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	29,890,000	44,195,294	74,085,294	1,279,165,000
2021	30,755,000	43,621,896	74,376,896	1,248,410,000
2022	32,295,000	43,077,007	75,372,007	1,216,115,000
2023	32,150,000	42,393,553	74,543,553	1,183,965,000
2024	32,955,000	41,576,524	74,531,524	1,151,010,000
2025	33,825,000	40,692,319	74,517,319	1,117,185,000
2026	36,655,000	39,709,425	76,364,425	1,080,530,000
2027	38,220,000	38,674,681	76,894,681	1,042,310,000
2028	39,275,000	37,614,877	76,889,877	1,003,035,000
2029	40,435,000	36,448,598	76,883,598	962,600,000
2030	41,840,000	35,100,869	76,940,869	920,760,000
2031	43,310,000	33,613,356	76,923,356	877,450,000
2032	44,840,000	32,073,271	76,913,271	832,610,000
2033	126,390,000	28,958,647	155,348,647	706,220,000
2034	131,050,000	24,176,413	155,226,413	575,170,000
2035	131,090,000	19,172,272	150,262,272	444,080,000
2036	63,515,000	15,535,082	79,050,082	380,565,000
2037	65,710,000	13,329,294	79,039,294	314,855,000
2038	36,295,000	11,574,290	47,869,290	278,560,000
2039	36,710,000	10,299,600	47,009,600	241,850,000
2040	11,850,000	9,429,118	21,279,118	230,000,000
2041	-	9,200,000	9,200,000	230,000,000
2042	230,000,000	5,200,000	235,200,000	-
2043			-	-

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Unrestricted Net Position plus Foundation Temporarily Restricted Net Position minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projection period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	753,406,878	1,453,007,591	50,783,894	401,177,179	149,572,848		130,260,685	2,639,063,379
2016	763,369,586	1,372,331,559	54,445,888	368,556,753	210,214,543	-7.25%	99,242,931	2,447,732,174
2017	684,476,213	1,548,370,142	60,884,766	425,424,033	86,534,071	11.89%	106,146,356	2,738,767,439
2018	(2,280,949,000)	1,572,780,589	55,217,359	247,727,795	69,010,368	-1.19%	3,180,331,280	2,706,097,655
2019	(1,884,101,696)	1,568,685,368	76,395,908	263,536,860	45,579,727	12.24%	3,058,286,721	3,037,223,434
2020	1,194,146,170	1,595,353,019	77,694,638	268,016,987	46,354,582	1.70%	-	3,088,856,232
2021	1,214,446,655	1,622,474,021	79,015,447	272,573,275	47,142,610	1.70%	-	3,141,366,788
2022	1,235,092,248	1,650,056,079	80,358,710	277,207,021	47,944,035	1.70%	-	3,194,770,024
2023	1,256,088,817	1,678,107,032	81,724,808	281,919,540	48,759,083	1.70%	-	3,249,081,114
2024	1,277,442,327	1,706,634,852	83,114,130	286,712,173	49,587,988	1.70%	-	3,304,315,493

3. Proposed Debt Financings

The table below summarizes any legislatively approved projects that UNC-Chapel Hill expects to finance during the Study Period. Using the assumptions outlined in the table below, the model has developed a tailored, but conservative, debt service schedule for each proposed financing and incorporated each pro forma debt service schedule into its calculations of the financial ratios as detailed in **Section 4** below.

UNC-Chapel Hill Proposed Debt Financings

Year	Use of Funds	Borrowing Amount	Term	Source of Repayment
2019	Media and Communication Studio (Athletics) (CP)	10,000,000	32	Athletics
2019	DLAM Renovations (swing space for Berry Hall) & AAALAC Certification (CP)	9,890,000	32	F&A
2019	Kenan Labs - Renovations to Labs 7A, 7B, 7C, 8B, & 8C for Applied Physics (CP)	7,683,000	32	F&A
2020	Indoor Practice Facility and Fetzer Field	30,000,000	30	Athletics and Fundraising
2020	Medical Education Building (CP)	22,600,000	31	F&A
2020	Translational Research Building (CP)	23,000,000	32	Parking Receipts
2021	South Parking Deck at S1 Lot (CP)	6,782,516	32	F&A
Total		109,955,516		

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** UNC-Chapel Hill's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

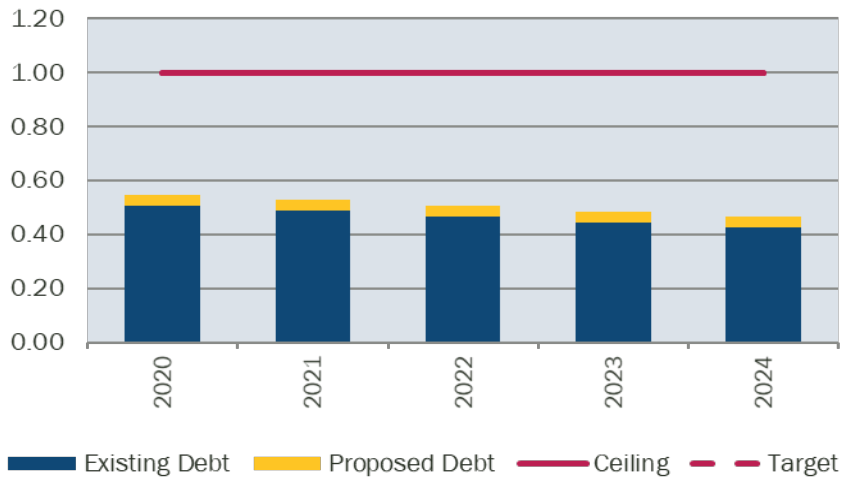
- Target Ratio: 1.00
- Ceiling Ratio: Not to exceed 1.00
- Projected 2020 Ratio: 0.55
- Highest Study Period Ratio: 0.55 (2020)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of a institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	2,524,151,467	1.70%	1,279,165,000	103,173,000	0.51	0.04	0.55
2021	2,567,062,042	1.70%	1,248,410,000	109,230,956	0.49	0.04	0.53
2022	2,610,702,097	1.70%	1,216,115,000	107,279,185	0.47	0.04	0.51
2023	2,655,084,032	1.70%	1,183,965,000	104,730,346	0.45	0.04	0.49
2024	2,700,220,461	1.70%	1,151,010,000	101,963,405	0.43	0.04	0.46

Debt to Obligated Resources



5-Year Payout Ratio Overview

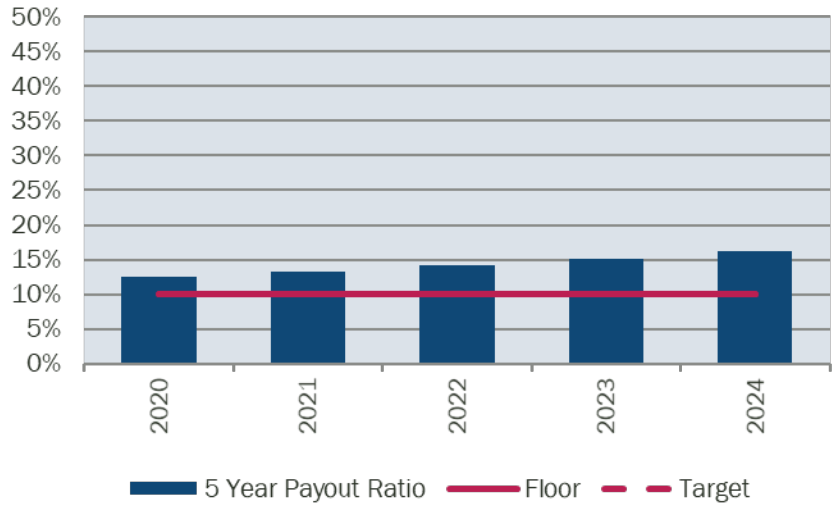
- **What does it measure?** The percentage of UNC-Chapel Hill's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

- Target Ratio: 10%
- Floor Ratio: Not less than 10%
- Projected 2020 Ratio: 12%
- Lowest Study Period Ratio: 12% (2020)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	1,382,338,000	12%
2021	1,357,640,956	13%
2022	1,323,394,185	14%
2023	1,288,695,346	15%
2024	1,252,973,405	16%

5-Year Payout Ratio



Expendable Resources to Debt

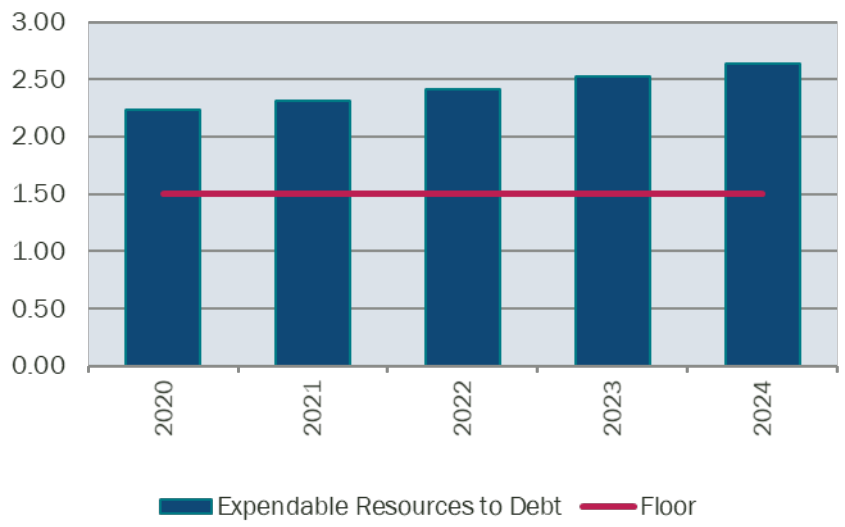
- **What does it measure?** The number of times UNC-Chapel Hill's liquid and expendable net position covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

- Floor Ratio: Not less than 1.50x
- Projected 2020 Ratio: 2.23x
- Lowest Study Period Ratio: 2.23x (2020)

Expendable Resources to Debt

1	2	3	4	5	6	7
			Expendable Resources to Debt			
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	3,088,856,232	1.70%	1,279,165,000	103,173,000	2.41	2.23
2021	3,141,366,788	1.70%	1,248,410,000	109,230,956	2.52	2.31
2022	3,194,770,024	1.70%	1,216,115,000	107,279,185	2.63	2.41
2023	3,249,081,114	1.70%	1,183,965,000	104,730,346	2.74	2.52
2024	3,304,315,493	1.70%	1,151,010,000	101,963,405	2.87	2.64

Expendable Resources to Debt



Debt Service to Operating Expenses

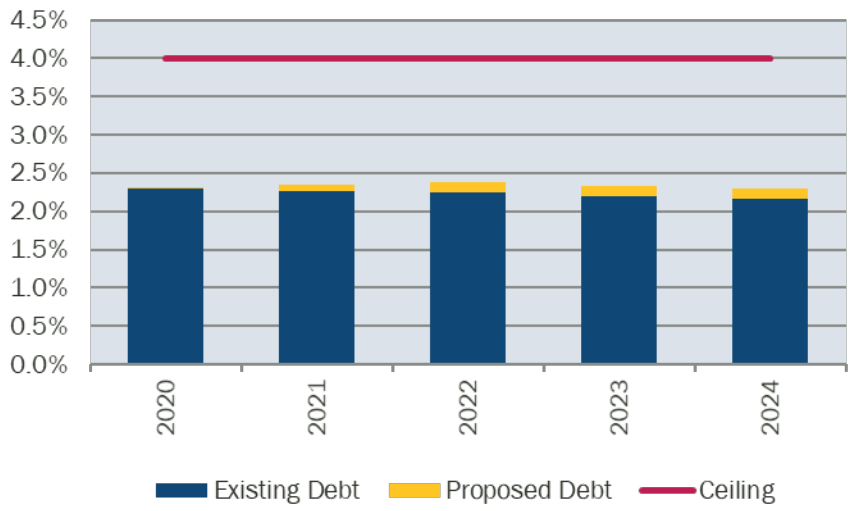
- **What does it measure?** UNC-Chapel Hill's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

- Policy Ratio: Not to exceed 4.00%
- Projected 2020 Ratio: 2.31%
- Highest Study Period Ratio: 2.38% (2022)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	3,230,101,867	1.70%	74,085,294	587,305	2.29%	0.02%	2.31%
2021	3,286,613,895	1.70%	74,376,896	2,922,145	2.26%	0.09%	2.35%
2022	3,342,578,006	1.70%	75,372,007	4,278,390	2.25%	0.13%	2.38%
2023	3,399,320,707	1.70%	74,543,553	4,833,886	2.19%	0.14%	2.34%
2024	3,457,016,023	1.70%	74,531,524	4,997,697	2.16%	0.14%	2.30%

Debt Service to Operating Expenses



5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, UNC-Chapel Hill's debt capacity is based on the amount of debt UNC-Chapel Hill could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, UNC-Chapel Hill's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, UNC-Chapel Hill's current estimated debt capacity is **$1,141,813,467.** After taking into account any legislatively approved projects detailed in **Section 3** above, if UNC-Chapel Hill issued no additional debt until the last year of the Study Period, then UNC-Chapel Hill's debt capacity for 2024 is projected to increase to **$1,447,247,056.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	0.55	1.00	1,141,813,467
2021	0.53	1.00	1,209,421,086
2022	0.51	1.00	1,287,307,911
2023	0.49	1.00	1,366,388,686
2024	0.46	1.00	1,447,247,056

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of UNC-Chapel Hill's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" does not necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- Projecting the exact amount UNC-Chapel Hill could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **Use of Multiple Factors**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.
  - **Factor Interdependence**
    - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
    - For example, a university's "**strategic positioning**" score, which accounts for 10% of its

overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.

- **Distortions Across Rating Categories**
  - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
  - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

UNC-Chapel Hill's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 1997	Utility System Revenue Refunding Bonds	25,235,000	8/1/2021	Utilities		Utilities Receipts
Series 2001B	General Revenue Bonds (VRDB)	14,980,000	12/1/2025	Housing	2000	Housing Receipts
				Athletic Facilities	1998	Athletics Receipts
				Parking	1997C	Parking Receipts
				Kenan Stadium	1996	Athletics Receipts
				Dental School	1995	Dental Receipts
				Carolina Inn		Carolina Inn Receipts
				Ambulatory Care Clinic	1990	Faculty Practice Receipts
Series 2001C	General Revenue Bonds (VRDB)	14,980,000	12/1/2025	Housing	2000	Housing Receipts
				Athletic Facilities	1998	Athletics Receipts
				Parking	1997C	Parking Receipts
				Kenan Stadium	1996	Athletics Receipts
				Dental School	1995	Dental Receipts
				Carolina Inn		Carolina Inn Receipts
				Ambulatory Care Clinic	1990	Faculty Practice Receipts
Series 2009A	General Revenue Bonds	5,105,000	12/1/2019	Genome Sciences Building		F&A
				Carmichael Auditorium		Athletics Receipts
				Carmichael Residence Hall		Housing Receipts
				Fetzer Gym		Athletics Receipts
				Genetic Medicine Building		F&A
				Lenoir Hall		Dining Receipts
				Old East Residence Hall		Housing Receipts
				Old West Residence Hall		Housing Receipts
				Residence College		Housing Receipts
				Rizzo Center		Rizzo Center Operations
				Rosenau Hall		F&A
				Chapman Hall (Science Complex)		F&A
				Caudill Labs (Science Complex)		F&A
				Sitterson Hall (Science Complex)		F&A
				Kenan Labs (Science Complex)		F&A
				New Venable (Science Complex)		F&A
				Murray Hall (Science Complex)		F&A
				Sports Medicine (Stallings-Evans)		Fundraising
				Student Union		Student Debt Fee
				Utility Infrastructure		Utilities Receipts
Series 2009B	Taxable General Revenue Bonds (BABs)	112,805,000	12/1/2039	Genome Sciences Building		F&A
				Carmichael Auditorium		Athletics Receipts
				Fetzer Gym		Athletics Receipts
				Kenan Stadium		Athletics Receipts
				New Venable		F&A
				Murray Hall		F&A
				Utility Infrastructure		Utilities Receipts

Series 2012B	General Revenue Bonds (FRN)	100,000,000	12/1/2041	Genome Sciences Building		F&A
				Bell Tower Chilled Water		Utilities Receipts
				Bell Tower Parking Deck		Parking Receipts
				Carmichael Auditorium		Athletics Receipts
				Craige Deck Expansion		Parking Receipts
				Dental Sciences Building		F&A
				Enterprise Resource Planning		Unrestricted Trust Funds
				Fetzer Gym		Athletics Receipts
				Lenoir Hall		Dining Receipts
				Research Building at CN		F&A
				New Venable		F&A
				Murray Hall		F&A
				Sports Medicine (Stallings-Evans)		Fundraising
				Student Union		Student Debt Fee
				Woollen Gym		Athletics Receipts
				Utility Infrastructure		Utilities Receipts
Series 2012C	Taxable General Revenue Refunding Bonds	101,560,000	12/1/2033	Bioinformatics	2001A	F&A
				Biomolecular Research Bldg	2001A	F&A
				Neurosciences	2001A	F&A
				1700 Airport Rd.	2001A	F&A
				Dining	2001A	Dining Receipts
				Carolina Inn	2001A	Carolina Inn Receipts
				Administrative Office Building	2003	F&A
				Carrington Hall	2003	F&A
				CAW Dorms	2003	Housing Receipts
				Development Bldg (208 W. Franklin)	2003	Unrestricted Trust Funds
				MKA Dorms	2003	Housing Receipts
				RamsHead (Parking)	2003	Parking Receipts
				RamsHead (Dining)	2003	Dining Receipts
				RamsHead (SRC)	2003	Student Debt Fee
				RamsHead (Utilities)	2003	Utilities Receipts
				Public Health (Hooker Bldg)	2003	F&A
				Stone Center	2003	Unrestricted Trust Funds
Series 2012D	General Revenue Bonds (Bank)	30,000,000	6/1/2042	Kenan Stadium Phase II		Foundation/Fundraising

Series 2014	Taxable General Revenue Refunding Bonds	256,305,000	12/1/2034	Bioinformatics	2001A	F&A
				Biomolecular Research Bldg	2001A	F&A
				Neurosciences	2001A	F&A
				1700 Airport Rd.	2001A	F&A
				Dining	2001A	Dining Receipts
				Carolina Inn	2001A	Carolina Inn Receipts
				Burnett Womack	2005A	F&A
				Carrington Hall (SON)	2005A	F&A
				Caudill Labs (Science Complex)	2005A	F&A
				Chapman Hall (Science Complex)	2005A	F&A
				Cobb Parking Deck (NE Chiller Deck)	2005A	Parking Receipts
				Cobb Residence Hall	2005A	Housing Receipts
				Fields 3&4	2005A	Student Debt Fee
				Genetic Medicine Building	2005A	F&A
				Jackson Parking Deck	2005A	Parking Receipts
				NE Chiller Plant	2005A	Utilities Receipts
				Public Health (Hooker Bldg)	2005A	F&A
				RamsHead (Dining)	2005A	Dining Receipts
				Utility Infrastructure	2005A	Utilities Receipts
Series 2016C	Taxable General Revenue Refunding Bonds	387,860,000	12/1/2036	Bioinformatics	2005A	F&A
				Biomolecular Research Bldg	2005A	F&A
				Neurosciences	2005A	F&A
				1700 Airport Rd.	2005A	F&A
				Dining	2005A	Dining Receipts
				Carolina Inn	2005A	Carolina Inn Receipts
				Student Union	2005A	Student Debt Fee
				Housing	2005A	Housing Receipts
				Parking	2005A	Parking Receipts
				Burnett Womack	2005A	F&A
				Carrington Hall (SON)	2005A	F&A
				Cobb Parking Deck (NE Chiller Deck)	2005A	Parking Receipts
				Cobb Residence Hall	2005A	Housing Receipts
				Fields 3&4	2005A	Student Debt Fee
				Genetic Medicine Building	2005A	F&A
				Jackson Parking Deck	2005A	Parking Receipts
				Public Health (Hooker Bldg)	2005A	F&A
				RamsHead (Dining)	2005A	Dining Receipts
				Residence College	2005A	Housing Receipts
				Chapman Hall	2005A	F&A
				Caudill Labs	2005A	F&A

				Caudill Labs	2005A	F&A
				Student Family Housing	2005A	Housing Receipts
				Utility Infrastructure	2005A	Utilities Receipts
				Carmichael Residence Hall	2007	Housing Receipts
				Food Service Facility (The Beach)	2007	Dining Receipts
				Global Education	2007	F&A
				Global Education (parking)	2007	Parking Receipts
				Morrison Residence Hall	2007	Housing Receipts
				Park and Ride Lot	2007	Parking Receipts
				Residence College	2007	Housing Receipts
				Old East Residence Hall	2007	Housing Receipts
				Old West Residence Hall	2007	Housing Receipts
				Rizzo Center	2007	Rizzo Center Operations
				Chapman Hall (Science Complex)	2007	F&A
				Caudill Labs (Science Complex)	2007	F&A
				Student Stores	2007	Student Stores Receipts
				Utility Infrastructure	2007	Utilities Receipts
Series 2017	Taxable General Revenue Refunding Bonds	110,225,000	12/1/2038	Genome Sciences Building	2009A	F&A
				Carmichael Auditorium	2009A	Athletics Receipts
				Carmichael Residence Hall	2009A	Housing Receipts
				Fetzer Gym	2009A	Athletics Receipts
				Genetic Medicine Building	2009A	F&A
				Lenoir Hall	2009A	Dining Receipts
				Old East Residence Hall	2009A	Housing Receipts
				Old West Residence Hall	2009A	Housing Receipts
				Residence College	2009A	Housing Receipts
				Rizzo Center	2009A	Rizzo Center Operations
				Rosenau Hall	2009A	F&A
				Chapman Hall (Science Complex)	2009A	F&A
				Caudill Labs (Science Complex)	2009A	F&A
				Sitterson Hall (Science Complex)	2009A	F&A
				Kenan Labs (Science Complex)	2009A	F&A
				New Venable (Science Complex)	2009A	F&A
				Murray Hall (Science Complex)	2009A	F&A
				Sports Medicine (Stallings-Evans)	2009A	Fundraising
				Student Union	2009A	Student Debt Fee
				Utility Infrastructure	2009A	Utilities Receipts
				Commercial Paper Refunding	CP	

Series 2019A	Variable Rate General Revenue Refunding Bonds	100,000,000	12/1/2041	Commercial Paper Refunding	CP	
Series 2019B	Variable Rate General Revenue Refunding Bonds	50,000,000	12/1/2034	Bioinformatics	2005A	F&A
				Biomolecular Research Bldg	2005A	F&A
				Neurosciences	2005A	F&A
				1700 Airport Rd.	2005A	F&A
				Dining	2005A	Dining Receipts
				Cobb Residence Hall	2005A	Housing Receipts
				Fields 3&4	2005A	Student Debt Fee
				Genetic Medicine Building	2005A	F&A
				Jackson Parking Deck	2005A	Parking Receipts
				Public Health (Hooker Bldg)	2005A	F&A
				RamsHead (Dining)	2005A	Dining Receipts
				Residence College	2005A	Housing Receipts
				Chapman Hall	2005A	F&A
				Caudill Labs	2005A	F&A
				Student Family Housing	2005A	Housing Receipts
				Utility Infrastructure	2005A	Utilities Receipts
Total		1,309,055,000				

7. Credit Profile

The following page provides a snapshot of UNC-Chapel Hill's current credit ratings, along with (1) a summary of various credit factors identified in UNC-Chapel Hill's most recent rating report and (2) recommendations for maintaining and improving UNC-Chapel Hill's credit ratings in the future.

Credit Profile of the University – (General Revenue)

THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

Overview

- Moody's, Standard and Poor's, and Fitch all maintain triple-A ratings with stable outlooks on UNC-Chapel Hill's general revenue bonds.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-
Non Investment Grade		

Key Information Noted in Reports

Credit Strengths

- Excellent student demand and large sponsored research base
- Strong state support for operations and capital
- Superior financial flexibility through $4.1 billion of total cash and investments for university and related foundations
- Strong prospects for ongoing donor support boosts credit quality

Credit Challenges

- Political limits on tuition pricing and financial aid policies underscore the importance of strong state operating support for maintaining credit quality
- Exposure to more volatile patient care revenue through the university's faculty practice plan and related hospitals
- Monthly days cash on hand is low for the rating category

Recommendations & Observations

- Continue to proactively manage capital investment program and debt portfolio in accordance with the University's existing debt policy and in service of UNC-Chapel Hill's broader strategic mission.

Approved by the UNC Board of Governors on May 20, 2020

8. Peer Comparison

Moody's Key Credit Ratios	University of North Carolina Chapel Hill	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2018	University of Pittsburgh	University of Michigan	University of Virginia	University of Washington	
Most Senior Rating	Aaa	Aa1	Aaa	Aaa	Aaa	Aaa
Total Debt ($, in millions)	1410	932	2387	2228	2425	1134
Total Cash & Investments ($, in millions)	4088	4854	14696	10005	5956	4499
Operating Revenue ($, in millions)	3074	2392	9077	3388	5858	3240
Operating Expenses ($, in millions)	2983	2262	8794	3330	5732	3196
Market Performance Ratios						
Annual Change in Operating Revenue (%)	3.5%	4.9%	6.4%	4.6%	5.4%	6.4%
Operating Ratios						
Operating Cash Flow Margin (%)	9.2%	4.9%	10.3%	10.9%	10.0%	10.3%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	1.4	2.1	1.7	3.0	1.0	1.4
Total Debt to Operating Expenses (x)	0.5	0.4	0.3	0.7	0.4	0.4
Monthly Days Cash on Hand (x)	121	415	142	173	156	208
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	2.9	5.2	6.2	4.5	2.5	4.5
Debt Service to Operating Expenses (%)	3.4%	3.3%	2.8%	3.6%	3.1%	3.2%
Total Debt-to-Cash Flow (x)	5.0	2.7	2.6	6.0	4.1	3.8

9. Debt Management Policies

UNC-Chapel Hill's current debt policy is included in the following pages.

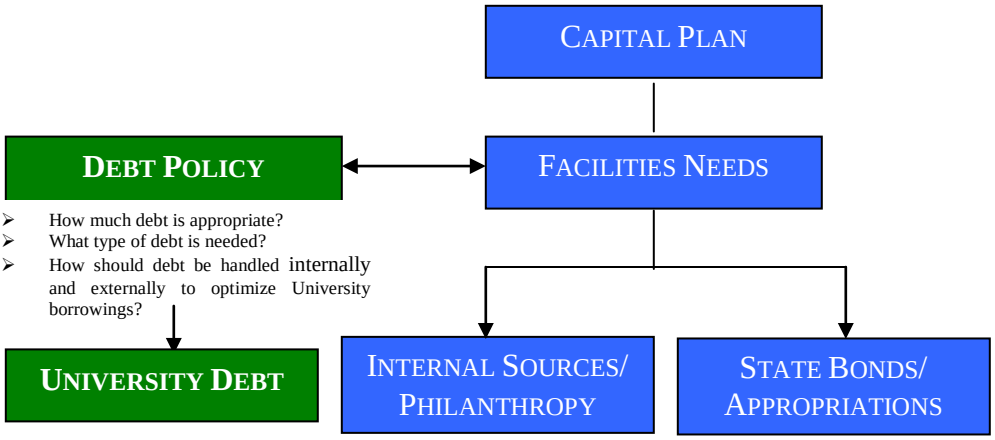
PREFACE

PURPOSE

The University of North Carolina at Chapel Hill's ("the University") strategic and capital planning is a long-term process that is continuously reevaluated. To support the funding of its capital plan, the University has and will utilize a mix of funding sources including State funds (bonds and appropriations), University bonds, internal reserves, and philanthropy.

To ensure the appropriate mix of funding sources is utilized, the University periodically reviews this debt policy. This policy is continuously used by management as a tool to evaluate the University's organizational and capital funding structure, the appropriate use of leverage, and internal lending mechanisms. Maintaining the debt policy is a long-term process.

FIGURE 1. DEBT POLICY FRAMEWORK



CONTENTS

I. INTRODUCTION

APPROACH

To fulfill its mission, the University will need to make ongoing strategic capital investments, driving capital decisions that impact the University's credit. Appropriate financial leverage serves a useful role and should be considered a long-term component of the University's balance sheet. Just as investments represent an integral component of the University's assets, debt is viewed to be a continuing component of the University's liabilities. Debt, especially tax-exempt debt, provides a low cost source of capital for the University to fund capital investments in order to achieve its mission and strategic objectives.

University Mission

"To serve all the people of the State, and indeed the nation, as a center for scholarship and creative endeavor. The University exists to teach students at all levels in an environment of research, free inquiry, and personal responsibility; to expand the body of knowledge; to improve the condition of human life through service and publication; and to enrich our culture."

The debt objectives below, combined with management judgment, provide the framework by which decisions will be made regarding the use and management of debt. The debt policy and objectives are subject to re-evaluation and change over time.

OBJECTIVES

1. Identify projects eligible for debt financing. Using debt to fund mission critical projects will ensure that debt capacity is optimally utilized to fulfill the University's mission. Projects that relate to the core mission will be given priority for debt financing; projects with associated revenues will receive priority consideration as well.

2. Maintain the University's favorable access to capital. Management's determination of the timing of capital projects will not be compromised by the University's access to capital sources, including debt. Management will utilize and issue debt in order to ensure timely access to capital.

3. Limit risk of the University's debt portfolio. The University will manage debt on a portfolio, rather than a transactional or project-specific, basis. The University's continuing objective to achieve the lowest cost of capital will be balanced with the goal of limiting exposure to market shifts.

4. Manage the University's credit to maintain the highest acceptable credit rating. Maintaining the highest acceptable credit rating will permit the University to continue to issue debt and finance capital projects at favorable interest rates while meeting its strategic objectives. The University will limit its overall debt to a level that will maintain an acceptable credit with the bond rating agencies; however, the attainment or maintenance of a specific rating is not an objective of this policy.

I. INTRODUCTION

For the University to achieve the above objectives, it will adopt debt strategies and procedures relating to both the external and the internal management of debt and interest. It is intended for these strategies to be reviewed and reassessed periodically by management.

DEBT STRATEGIES

1 **MISSION BASED CAPITAL PLANNING**. Provide framework with link to mission to evaluate and prioritize projects eligible for debt financing.

2. **CORE RATIOS**. Adopt a set of core financial ratios to guide capital planning and ensure central oversight of University-wide leverage levels.

3. **FINANCIAL INSTRUMENTS**. Provide the University with access to appropriate financing sources, including debt and liability management strategies debt based on borrowing and portfolio management needs.

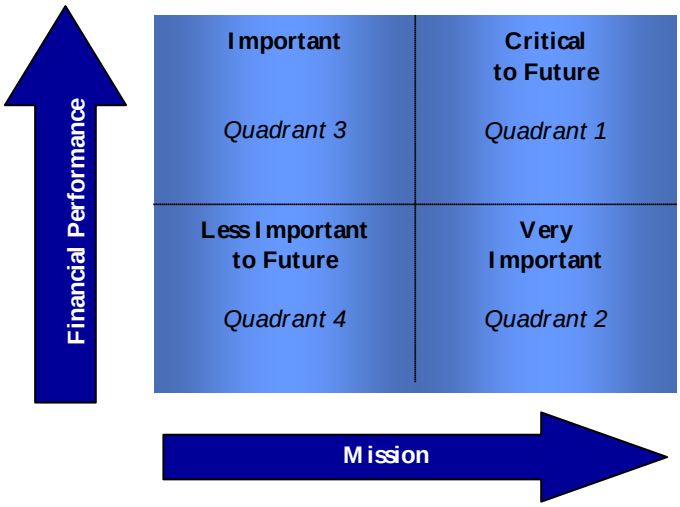
4. **EXTERNAL AND INTERNAL DEBT REPAYMENT**. De-link external and internal debt repayment, including adoption of internal lending policies.

In addition to the debt strategies the University has adopted to support its objectives, the University will also incorporate debt management practices. These practices will be updated periodically and are intended to be resource for management in determining structuring, marketing, and administrative elements of the debt program.

II. DEBT STRATEGIES – 1. MISSION BASED CAPITAL PLANNING

Generally, the following guidelines, although not intended to be all-inclusive, will be considered in the prioritization of the use of debt.

FIGURE 2. DEBT ALLOCATION MATRIX



1. Only projects that relate to the mission of the University, directly or indirectly, will be considered for debt financing.

2. A project that has a related revenue stream or can create budgetary savings will receive priority consideration. Every project considered for financing must have a defined, supportable plan of costs approved by management.

3. In assessing the possible use of debt, all funding sources will be considered. Some combination of State appropriations/bonds, philanthropy, project-generating revenues, research facilities and administrative cost reimbursements, expendable reserves, and other sources are expected to fund a portion of the cost of a project. Debt is to be used prudently and strategically.

4. The University will consider alternative funding opportunities (e.g., joint ventures, real estate development, etc.) when appropriate and advantageous to the University. Opportunities and financing sources will be evaluated within the context of the Debt Policy.

5. Federal research projects will receive priority consideration for external debt financing due to partial reimbursement of operating expenses (including the interest component of applicable debt service) of research facilities.

II. DEBT STRATEGIES – 2. CORE RATIOS

The University will establish guidelines for overall debt using a select number of financial ratios. These ratios will be derived from the financial statements, and should be consistent with some of the measures used by the marketplace. Following are the ratios and corresponding guidelines. They will be calculated and reported annually and when new debt is issued, and will be revised to reflect any changes in accounting standards.

BALANCE SHEET RATIO - EXPENDABLE RESOURCES TO DEBT (X COVERAGE)

POLICY LIMIT. The Expendable Resources to Debt Ratio indicates one of the key determinants of near- to medium-term financial health by measuring the availability of intermediate-term funds to cover debt should the University be required to repay all its outstanding obligations. Although numerous balance sheet measures exist, this ratio is the most appropriate and utilized by the marketplace and credit analysts to evaluate leverage versus funds that could be expended by the University.

$$\frac{\text{UNRESTRICTED AND EXPENDABLE NET ASSETS}}{\text{TOTAL ADJUSTED UNIVERSITY DEBT}^{1}}$$

The target ratio is established to maintain the University's comparative debt coverage level among peer institutions and provide sufficient buffer against possible declines in coverage from decreases in quasi endowment and temporary investment pool balances. The ratio is also a key determinant of the University's credit rating. *The guideline for this ratio is to be no less than 1.5 times coverage.*

STATEMENT OF ACTIVITIES RATIO – DEBT TO OPERATIONS (%)

POLICY LIMIT. This ratio measures the University's ability to repay debt service associated with all outstanding debt and the impact on the overall budget. The target for this ratio is intended to maintain the University's long-term operating flexibility to fund new initiatives.

$$\frac{\text{PRINCIPAL AND INTEREST ON NOTES AND BONDS}}{\text{TOTAL EXPENDITURES}}$$

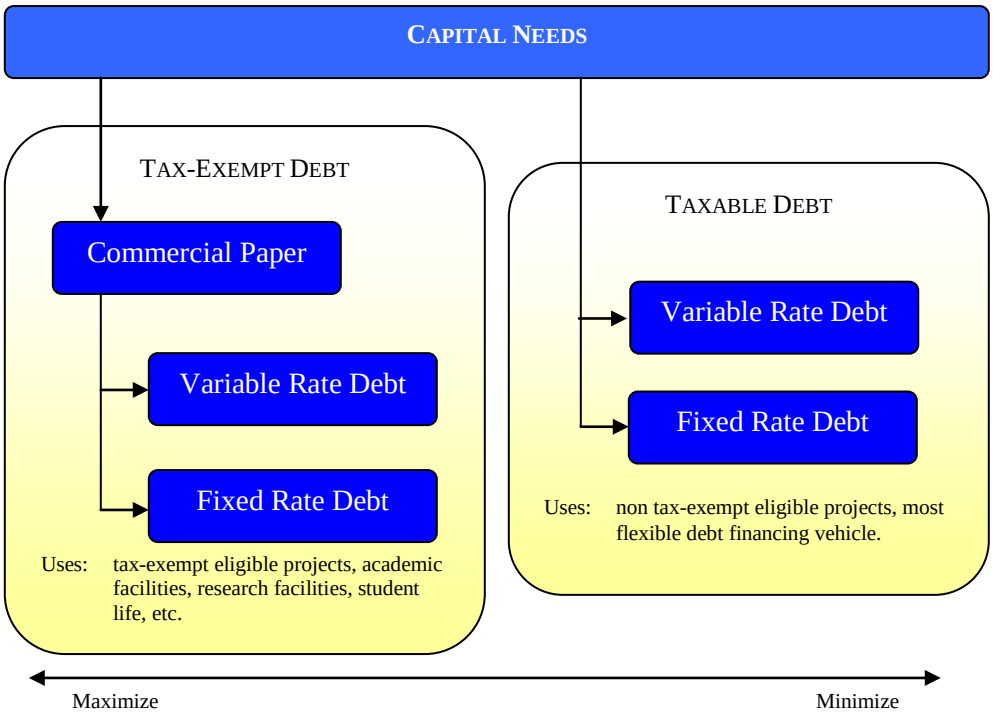
The measure is based on aggregate expenses as opposed to revenues because expenses typically are more stable and better reflect the operating size of the University. Management recognizes that a growing expense base would make this ratio appear more attractive. *The guideline for this ratio is not to be greater than 4.0%. If more than 4.0% of the University's annual budget were committed to debt service expense, flexibility to devote resources to fund other objectives could be reduced.*

[1] Excludes EPA.

II. DEBT STRATEGIES – 3. DEBT INSTRUMENTS

Under the guidance of Treasury and Risk Management Services, the University will pool debt and in doing so, manage debt on a portfolio basis to minimize cost and manage volatility.

FIGURE 3. TAX-EXEMPT AND TAXABLE DEBT



TAX-EXEMPT DEBT

The University recognizes the benefits associated with tax-exempt debt, and therefore will manage the tax-exempt portfolio to maximize the portion of tax-exempt debt outstanding under the Debt Policy.

COMMERCIAL PAPER

The University recognizes that a commercial paper (CP) program can provide low-cost working capital and provide bridge financing for projects; however, as with other debt structures, the level of CP outstanding impacts the University's overall debt capacity.

Commercial paper can provide the University with interim financing for projects before gifts are received or in anticipation of an external bond issue. Project-related CP provides the Central Bank (see Debt Strategies 4 – External and Internal Debt Repayment) with an easily accessible low-cost source of funding to manage its cash balances and provide continuous access to capital to the divisions, regardless of whether an external financing is imminent. Project-related CP will be treated as any other form of debt and subject to the Debt Policy guidelines.

TAXABLE DEBT

The University will manage its debt portfolio to minimize its taxable component. Unlike tax-exempt debt, taxable debt will not be considered a perpetual component of the University's liabilities. Taxable debt will be utilized to fund projects ineligible for tax-exempt financing or for those projects for which the University wants to preserve maximum operating flexibility; however, the University will manage its overall debt portfolio and total financing sources in order to minimize (or eliminate) the need for taxable debt. Periodically and when any new

II. DEBT STRATEGIES – 3. DEBT INSTRUMENTS

debt is issued, the University will determine its aggregate taxable needs and manage the taxable debt portfolio, if any based on the aggregate need and desired flexibility.

INTEREST RATE SWAPS

The use of swaps will be employed primarily to manage the University's variable rate exposure. The University will utilize a framework to evaluate potential derivative instruments through evaluation of its variable rate allocation, market and interest rate conditions, and the compensation for undertaking counterparty exposure. In addition, the University will incorporate the cost/benefit of any derivative instrument. Under no circumstances will a derivative transaction be utilized that is not fully understood by the University or that imposes inappropriate risk on the University.

FIXED VERSUS VARIABLE ALLOCATION

Due to the financing flexibility and typically low interest cost associated with variable-rate debt, it is desirable to maintain a portion of the University's aggregate debt on a floating-rate basis. However, variable-rate debt introduces volatility to the University's debt service obligations and typically requires liquidity support. The University will utilize variable-rate debt on a prudent basis after careful consideration of the cost/benefits of this interest rate mode.

II. DEBT STRATEGIES – 4. EXTERNAL AND INTERNAL DEBT REPAYMENT

TREASURY AND RISK MANAGEMENT SERVICES ("TRMS") AS A CENTRAL BANK

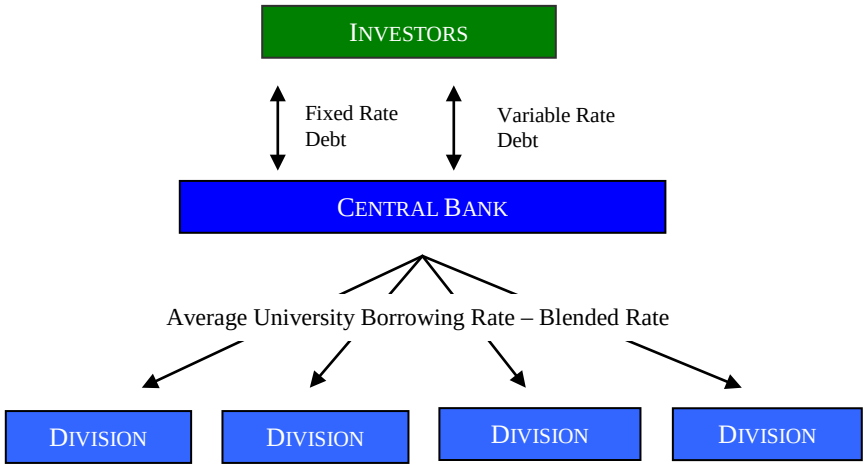
Since it is acknowledged that debt will remain a perpetual component of the University's capitalization, the Office of TRMS will execute transactions, provide funds and develop repayment schedules for individual units. In this regard, TRMS is viewed as a central bank for financing of projects for and across divisions. The University will pool all debt and act as a central source of funds that borrows from the markets and receives capital funds from other sources and makes funds available to the divisions to achieve their objectives.

As mentioned above, debt will remain a long-term component of the University's balance sheet and division leaders will seek funding for projects from the central bank subject to the debt policy. Deans and Vice Chancellors are not concerned about the source of funds to finance their projects; they are interested in the access to capital, the project ranking criteria, the impact on the current budget, and the predictability of future payments. Therefore, it is desirable to decouple the source of financing (e.g., prevailing fixed or variable rates, synthetic debt, etc) from the use of funds to finance capital projects to the greatest extent possible. Project financing decisions will be made based on the Mission Based Capital Planning strategy continued in the Debt Policy, and not based on the timing of specific transactions.

SINGLE UNIVERSITY-WIDE INTEREST RATE – BLENDED RATE

The University will charge a single interest rate for loaned proceeds regardless of use or source. The single University-wide rate will be adjusted periodically based on the University's blended cost of capital on all external debt.

FIGURE 5. BLENDED RATE



The blended interest rate will achieve the following objectives:

- Provide a consistent source of capital to divisions with a predictable and consistent cost of capital. A single interest rate for divisions will make year-to-year budgeting easier for the divisions, since the cost of capital is established at the beginning of the year and is somewhat insulated from changes in market interest rates.
- Align the interests of the University with the divisions. Since debt will be managed on a portfolio basis under debt policy guidelines, transactions will be structured to benefit the entire University, which will benefit the blended rate charged to all divisions.
- Timing of borrowing for projects will not impact the rate borne by the division. The University will time and pool debt issuance for multiple projects to achieve the most economic transactions.

II. DEBT STRATEGIES – 4. EXTERNAL AND INTERNAL DEBT REPAYMENT

The blended interest rate will be influenced by a number of factors:

- Any savings derived from refinancing of existing debt will lower the blended rate, benefiting all borrowers.
- For purposes of the University's variable rate debt, the blended rate will assume a variable rate based on a multi-year moving average of the University's external short-term borrowing cost.
- The University may elect to reserve funds collected in order to minimize year-to-year adjustments in the blended rate. The University's current blended rate is 5.03%.

III. MANAGEMENT PRACTICES

GENERAL REVENUE PLEDGE

The University will utilize general revenue secured debt for all financing needs, unless for certain projects management desires to structure specific revenue pledges independent of general revenue projects. The general revenue pledge provides a strong, flexible security which captures the strengths of not only auxiliary and student related revenues, but of the University's research programs. General revenue bonds price better than corresponding auxiliary or indirect cost recovery bonds. In addition, on general revenue debt the University is not subject to operating or financial covenants and coverage levels imposed by the market and external constituents.

The University will use revenue-specific bonds for those projects that are subsidized externally or not funded by unrestricted current funds of the University. These bonds (e.g. EPA bonds) will be structured to accommodate requirements of the pledged revenue stream or management desires to keep a project independent from other general revenue funded projects.

STRUCTURE (MATURITY, ETC.)

The University will employ maturity structures that correspond with the life of the facilities financed, subject to System and State limitations. As market dynamics change, maturity structures should be reevaluated. Call features should be structured to provide the highest degree of flexibility relative to cost.

METHODS OF SALE

The University will consider any method of sale. Negotiated and competitive bond offerings will be considered on an individual transaction basis. For those transactions that represent a new or non-traditional pledge of University revenues, the University generally will consider negotiated methods of sale over competitive sales.

REFUNDING TARGETS

The University will continuously monitor its outstanding tax-exempt debt portfolio for refunding and/or restructuring opportunities.

For a stand-alone refunding, the University will enter into a transaction that produces at least 3-5% present value savings (based on refunded bonds), with this threshold higher for those transactions with a long escrow.

The University also will consider a refinancing if it relieves the University of certain limitations, covenants, payment obligations or reserve requirements that reduce flexibility. The University will also consider refinancing certain obligations within a new money offering even if savings levels are minimal in order to consolidate debt into the general revenue pledge, and/or reduce the administrative burden and cost of managing many small outstanding obligations.

DISCLOSURE

The University will continue to meet its ongoing disclosure requirements in accordance to SEC rule 15c2-12. The University will submit financial reports, statistical data, and any other material events as required under outstanding bond indentures. The University will attempt to provide all relevant investor information on its website.

III. MANAGEMENT PRACTICES

ARBITRAGE

Annually, the University will comply with arbitrage requirements on invested bond funds. The implementation of tax-exempt CP will reduce the University's ongoing investment of earnings restricted bond funds.

BOND PROCEED INVESTMENT

The University will continue to invest bond-funded construction funds, capitalized interest funds, and costs of issuance funds appropriately to achieve the highest return available under arbitrage limitations. When sizing bond transactions, the University will consider funding on either a net or gross basis.

LIQUIDITY

The University will provide liquidity support for variable rate debt and commercial paper by purchasing external support from a third-party or parties or from internal liquid reserves. While providing internal liquidity support is most economic, the University should not be constrained from investing funds long-term in order to maintain liquidity requirements. The University regularly will review its liquidity requirements and sources make any adjustments as necessary or desired.

May 19, 2020

The University of North Carolina System Debt Capacity Study – Fiscal Year 2019

University of North Carolina at Charlotte

Institution Report

University of North Carolina at Charlotte

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), The University of North Carolina at Charlotte ("*UNC Charlotte*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. UNC Charlotte has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, UNC Charlotte, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—UNC Charlotte has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, UNC Charlotte's debt capacity reflects the amount of debt UNC Charlotte could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that UNC Charlotte intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- UNC Charlotte's current debt profile, including project descriptions financed with, and the sources of repayment for, UNC Charlotte's outstanding debt;
- UNC Charlotte's current credit profile, along with recommendations for maintaining or improving UNC Charlotte's credit rating; and
- A copy of any UNC Charlotte debt management policy currently in effect.

Overview of UNC Charlotte

For the fall 2018 semester, UNC Charlotte had a headcount student population of approximately 29,710, including 24,387 undergraduate students and 5,323 graduate and doctoral students. UNC Charlotte employs approximately 1,475 full-time and part-time instructional faculty.

Over the past 5 years, UNC Charlotte's enrollment has increased approximately 9%. UNC Charlotte's average age of plant (10.28 years) is lower than the median ratio for all institutions (14.53 years) and generally indicates UNC Charlotte is taking a sustainable approach to its deferred maintenance and reinvestment programs.

UNC Charlotte anticipates incurring approximately $34 million in additional debt during the Study Period, as summarized in **Section 3** below.

UNC Charlotte has made no changes to the financial model's standard growth assumptions, which are based on the Consumer Price Index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 AND 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 AND 75.
- Outstanding debt service is based on UNC Charlotte's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to UNC Charlotte by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt UNC Charlotte expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below may overstate UNC Charlotte's current debt burden.

1	2	3	4	5	6
		Obligated Resources			
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	306,131,839	26,512,905	-		332,644,744
2016	291,179,452	19,955,060	-	-6.47%	311,134,512
2017	340,623,010	21,128,002	-	16.27%	361,751,012
2018	(276,161,445)	24,962,892	628,775,878	4.37%	377,577,325
2019	(241,876,663)	28,006,850	605,555,612	3.74%	391,685,799
2020	398,344,458	-	-	1.70%	398,344,458
2021	405,116,313	-	-	1.70%	405,116,313
2022	412,003,291	-	-	1.70%	412,003,291
2023	419,007,347	-	-	1.70%	419,007,347
2024	426,130,472	-	-	1.70%	426,130,472

Operating Expenses					
Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	522,325,266	5,251,911	-		527,577,177
2016	542,160,000	6,602,236	-	4.02%	548,762,236
2017	586,249,328	(1,145,093)	-	6.62%	585,104,235
2018	616,021,490	(3,835,591)	248,588	4.67%	612,434,487
2019	623,172,653	(3,043,958)	23,589,711	5.11%	643,718,406
2020	654,661,619	-	-	1.70%	654,661,619
2021	665,790,866	-	-	1.70%	665,790,866
2022	677,109,311	-	-	1.70%	677,109,311
2023	688,620,169	-	-	1.70%	688,620,169
2024	700,326,712	-	-	1.70%	700,326,712

7	8	9	10	11
		Outstanding Debt		
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	18,660,000	24,507,967	43,167,967	521,520,000
2021	19,370,000	23,751,116	43,121,116	502,150,000
2022	17,730,000	22,972,049	40,702,049	484,420,000
2023	18,325,000	22,187,111	40,512,111	466,095,000
2024	19,160,000	21,402,432	40,562,432	446,935,000
2025	19,070,000	20,513,399	39,583,399	427,865,000
2026	18,435,000	19,649,843	38,084,843	409,430,000
2027	19,420,000	18,794,764	38,214,764	390,010,000
2028	19,655,000	17,969,989	37,624,989	370,355,000
2029	20,220,000	17,004,298	37,224,298	350,135,000
2030	21,085,000	16,075,586	37,160,586	329,050,000
2031	21,975,000	15,096,536	37,071,536	307,075,000
2032	22,915,000	14,073,108	36,988,108	284,160,000
2033	23,990,000	12,898,280	36,888,280	260,170,000
2034	24,995,000	11,804,573	36,799,573	235,175,000
2035	26,025,000	10,681,127	36,706,127	209,150,000
2036	26,095,000	9,504,124	35,599,124	183,055,000
2037	26,530,000	8,343,125	34,873,125	156,525,000
2038	24,235,000	7,156,774	31,391,774	132,290,000
2039	25,285,000	6,002,832	31,287,832	107,005,000
2040	22,915,000	4,805,018	27,720,018	84,090,000
2041	21,530,000	3,755,089	25,285,089	62,560,000
2042	14,310,000	2,923,701	17,233,701	48,250,000
2043	14,980,000	2,248,056	17,228,056	33,270,000
2044	11,500,000	1,540,475	13,040,475	21,770,000
2045	8,335,000	987,250	9,322,250	13,435,000
2046	4,260,000	565,250	4,825,250	9,175,000
2047	4,475,000	346,875	4,821,875	4,700,000
2048	4,700,000	117,500	4,817,500	-

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Unrestricted Net Position plus Foundation Temporarily Restricted Net Position minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 AND 75 during the projection period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Net Assets Without Donor Restrictions	Foundation Net Assets With Donor Restrictions	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	161,240,735	46,295,365	21,701,113	74,075,976	17,745,568		26,512,905	312,080,526
2016	207,528,508	45,911,148	19,879,411	67,646,909	20,216,006	9.17%	19,955,060	340,705,030
2017	210,654,443	49,770,635	33,729,604	67,840,816	18,913,623	6.90%	21,128,002	364,209,877
2018	(389,487,415)	36,675,019	33,994,250	70,046,275	-	10.73%	652,075,397	403,303,526
2019	(344,210,310)	36,962,343	28,534,342	139,030,193	-	21.95%	631,529,644	491,846,212
2020	292,203,763	37,590,703	29,019,426	141,393,706	-	1.70%	-	500,207,598
2021	297,171,227	38,229,745	29,512,756	143,797,399	-	1.70%	-	508,711,127
2022	302,223,137	38,879,650	30,014,473	146,241,955	-	1.70%	-	517,359,216
2023	307,360,931	39,540,604	30,524,719	148,728,068	-	1.70%	-	526,154,323
2024	312,586,067	40,212,795	31,043,639	151,256,445	-	1.70%	-	535,098,946

3. Proposed Debt Financings

The table below summarizes any legislatively approved projects that UNC Charlotte expects to finance during the Study Period. Using the assumptions outlined in the table below, the model has developed a tailored, but conservative, debt service schedule for each proposed financing and incorporated each pro forma debt service schedule into its calculations of the financial ratios as detailed in **Section 4** below.

UNC Charlotte Proposed Debt Financings

Year	Use of Funds	Borrowing Amount	Term	Source of Repayment
2020	Residence Hall Phase XVI	34,000,000	30	Housing Revenues
Total		34,000,000		

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** UNC Charlotte's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

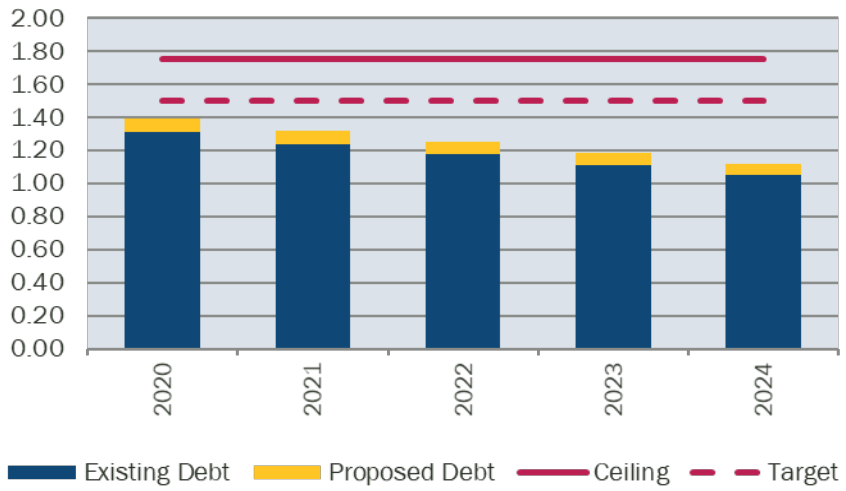
- Target Ratio: 1.50
- Ceiling Ratio: Not to exceed 1.75
- Projected 2020 Ratio: 1.39
- Highest Study Period Ratio: 1.39 (2020)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	398,344,458	1.70%	521,520,000	34,000,000	1.31	0.09	1.39
2021	405,116,313	1.70%	502,150,000	33,241,472	1.24	0.08	1.32
2022	412,003,291	1.70%	484,420,000	32,462,995	1.18	0.08	1.25
2023	419,007,347	1.70%	466,095,000	31,664,044	1.11	0.08	1.19
2024	426,130,472	1.70%	446,935,000	30,844,081	1.05	0.07	1.12

Debt to Obligated Resources



5-Year Payout Ratio Overview

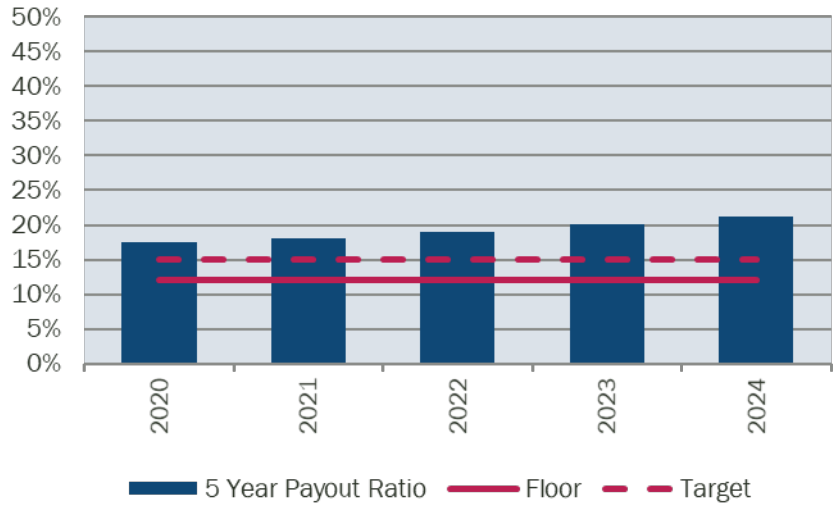
- **What does it measure?** The percentage of UNC Charlotte's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

- Target Ratio: 15%
- Floor Ratio: Not less than 12%
- Projected 2020 Ratio: 18%
- Lowest Study Period Ratio: 18% (2020)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	555,520,000	18%
2021	535,391,472	18%
2022	516,882,995	19%
2023	497,759,044	20%
2024	477,779,081	21%

5-Year Payout Ratio



Expendable Resources to Debt

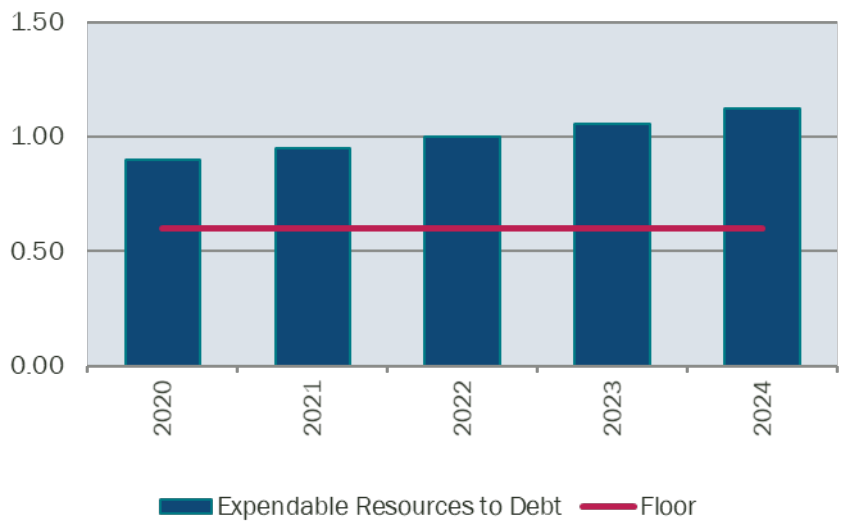
- **What does it measure?** The number of times UNC Charlotte's liquid and expendable net position covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

- Floor Ratio: Not less than 0.60x
- Projected 2020 Ratio: 0.90x
- Lowest Study Period Ratio: 0.90x (2020)

Expendable Resources to Debt

1	2	3	4	5	6	7
Expendable Resources to Debt						
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	500,207,598	1.70%	521,520,000	34,000,000	0.96	0.90
2021	508,711,127	1.70%	502,150,000	33,241,472	1.01	0.95
2022	517,359,216	1.70%	484,420,000	32,462,995	1.07	1.00
2023	526,154,323	1.70%	466,095,000	31,664,044	1.13	1.06
2024	535,098,946	1.70%	446,935,000	30,844,081	1.20	1.12

Expendable Resources to Debt



Debt Service to Operating Expenses

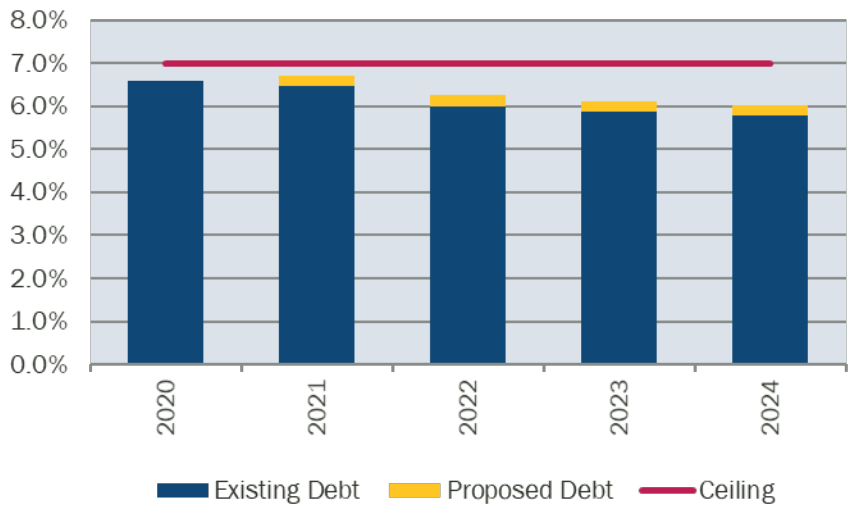
- **What does it measure?** UNC Charlotte's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (adjusted to include interest expense of proposed debt)

- Policy Ratio: Not to exceed 7.00%
- Projected 2020 Ratio: 6.59%
- Highest Study Period Ratio: 6.72% (2021)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	654,661,619	1.70%	43,167,967	-	6.59%	n/a	6.59%
2021	666,685,066	1.70%	43,121,116	1,652,728	6.47%	0.25%	6.72%
2022	677,983,562	1.70%	40,702,049	1,652,728	6.00%	0.24%	6.25%
2023	689,473,946	1.70%	40,512,111	1,652,728	5.88%	0.24%	6.12%
2024	701,159,477	1.70%	40,562,432	1,652,728	5.79%	0.24%	6.02%

Debt Service to Operating Expenses



5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, UNC Charlotte's debt capacity is based on the amount of debt UNC Charlotte could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, UNC Charlotte's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, UNC Charlotte's current estimated debt capacity is **$141,582,801.** After taking into account any legislatively approved projects detailed in **Section 3** above, if UNC Charlotte issued no additional debt until the last year of the Study Period, then UNC Charlotte's debt capacity for 2024 is projected to increase to **$267,949,244.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	1.39	1.75	141,582,801
2021	1.32	1.75	173,562,076
2022	1.25	1.75	204,122,763
2023	1.19	1.75	235,503,812
2024	1.12	1.75	267,949,244

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of UNC Charlotte's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" <u>does not</u> necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- **If UNC Charlotte were to use all of its calculated debt capacity during the Study Period, UNC Charlotte's credit ratings may face significant downward pressure**.
- Projecting the exact amount UNC Charlotte could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **<u>Use of Multiple Factors</u>**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.
  - **<u>The State's Impact</u>**
    - In assessing each institution's credit rating, rating agencies also consider the State's credit

rating and demographic trends, the health of its pension system, the level of support it has historically provided to the institution, and any legislation or policies affecting campus operations.

- Historically, each institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
- If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.

- **Factor Interdependence**
  - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
  - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
  - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
  - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

UNC Charlotte's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 2015	Taxable Refunding Limited Obligation Bonds	11,580,000	3/1/2035	Student Housing Project	2005	
Series 2017A	General Revenue Refunding Bonds	77,210,000	10/1/2040	Portal Building	2012A	Overhead Receipts
				South Village Dining	2012A	Dining Revenues
				Regional Utility Plant	2012A	Overhead Receipts
				Refi-Sprinkler Loan	2012A	Housing Rentals
				Parking Deck I	2012A	Parking Revenues
				Parking Deck J	2012A	Parking Revenues
				Residence Hall Phase 10	2012A	Housing Rentals
				Residence Hall Phase 11	2012A	Housing Rentals
				2012 Sprinkler Project	2012A	Housing Rentals
				Final Refi of Phase 8 2002-A bonds	2012A	Housing Rentals
Series 2017B	Taxable General Revenue Refunding Bonds	22,820,000	10/1/2040	Portal Building	2012B	Overhead Receipts
				South Village Dining	2012B	Dining Revenues
				Regional Utility Plant	2012B	Overhead Receipts
				Student Union	2007A	Debt Fee
				Housing Phase 7	2010B-1	Housing Rentals
				1st Partial Refunding of Phase 8	2010B-1	Housing Rentals
				Parking	2010B-1	Parking Revenues
2017	General Revenue Bonds	76,380,000	10/1/2047	Health and Wellness Center		Student Fees
				Scott Hall		Housing Revenues
				Elm Maple Pine		Housing Revenues
Total		541,100,000				

Approved by the UNC Board of Governors on May 20, 2020

7. Credit Profile

The following page provides a snapshot of UNC Charlotte's current credit ratings, along with (1) a summary of various credit factors identified in UNC Charlotte's most recent rating report and (2) recommendations for maintaining and improving UNC Charlotte's credit ratings in the future.

Credit Profile of the University – (General Revenue)

Overview

- Moody's maintains a Aa3 rating on UNC Charlotte's general revenue bonds. The outlook is stable.
- Standard and Poor's maintains an A+ rating on UNC Charlotte's general revenue bonds. The outlook is stable.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-

Non Investment Grade

Key Information Noted in Reports

Credit Strengths

- Strong financial positions with favorable operations, healthy liquidity, and growing reserves
- Desirable location in economically vibrant city
- University has maintained steady enrollment and net tuition revenue growth
- Strong operating and capital support from the Aaa-rated State of North Carolina

Credit Challenges

- Moderately high financial leverage compared to similarly rated peers
- Tuition pricing constraints could reduce future budget predictability

Recommendations & Observations

- Continue to develop initiatives to highlight and strengthen UNC Charlotte's distinctive market position.
- Continue to seek strategies to limit new debt in the near term while addressing critical infrastructure needs, in accordance with UNC Charlotte's existing debt policy and in service of UNC Charlotte's other strategic initiatives.

Approved by the UNC Board of Governors on May 20, 2020

8. Peer Comparison

Moody's Key Credit Ratios	University of North Carolina Charlotte	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2019	Virginia Commonwealth University	Western Michigan University	Kent State University	University of Toledo	
Most Senior Rating	Aa3	Aa2	Aa3	Aa3	A1	Aa3
Total Debt ($, in millions)	548	1091	299	431	30	437
Total Cash & Investments ($, in millions)	566	3294	735	688	71	735
Operating Revenue ($, in millions)	691	1060	572	638	64	691
Operating Expenses ($, in millions)	623	1104	519	641	65	641
Market Performance Ratios						
Annual Change in Operating Revenue (%)	5.3%	0.1%	0.5%	0.5%	-3.3%	2.7%
Operating Ratios						
Operating Cash Flow Margin (%)	17.8%	0.1%	17.0%	9.9%	11.3%	12.1%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	0.9	3.0	1.4	1.1	1.1	1.0
Total Debt to Operating Expenses (x)	0.9	1.0	0.6	0.7	0.5	0.5
Monthly Days Cash on Hand (x)	181	144	0	273	155	156
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	1.0	3.0	2.5	1.6	2.4	1.6
Debt Service to Operating Expenses (%)	6.5%	3.8%	18.8%	5.5%	5.6%	4.5%
Total Debt-to-Cash Flow (x)	4.5	26.0	3.1	6.8	4.2	4.6

Debt Management Policies

UNC Charlotte's current debt policy is included in the following page

University Policy 601.18, Debt Policy

Executive Summary:

This Policy outlines the University philosophy on debt, establishes the framework for approving, managing, and reporting debt and provides debt management guidelines.

I. Policy Statement

The mission of The University of North Carolina at Charlotte (University) is supported by the development and implementation of the long-term strategic plan. The strategic plan establishes University-wide priorities and programmatic objectives. The University develops a capital plan to support these priorities and objectives.

The University's use of debt plays a critical role in ensuring adequate and cost effective funding for the capital plan. By linking the objectives of its Debt Policy to its strategic objectives, the University ultimately increases the likelihood of achieving its mission.

This Debt Policy is intended to be a dynamic document that will evolve over time to meet the changing needs of the University.

A. Scope

This Debt Policy applies to the University and affiliated entities and covers all forms of debt including long-term, short-term, fixed-rate, and variable-rate debt. It also covers other forms of financing including both on-balance sheet and off-balance sheet structures, such as leases, and other structured products used with the intent of funding capital projects.

The use of derivatives is not covered under this policy. When the use of derivatives is being considered a separate Interest Rate Risk Management policy will be drafted.

B. Objectives

The objectives of this policy are to:

(i) Outline the University's philosophy on debt

(ii) Establish a control framework for approving and managing debt

(iii) Define reporting guidelines

(iv) Establish debt management guidelines

This Debt Policy formalizes the link between the University's Strategic Plan and the issuance of debt. Debt is a limited resource that must be managed strategically in order to best support University priorities.

The policy establishes a control framework to ensure that appropriate discipline is in place regarding capital rationing, reporting requirements, debt portfolio composition, debt servicing, and debt authorization. It establishes guidelines to ensure that existing and proposed debt

issues are consistent with financial resources to maintain an optimal amount of leverage, a strong financial profile, and a strategically optimal credit rating.

Under this policy, debt is being managed to achieve the following goals:

(i) Maintaining access to financial markets: capital, money, and bank markets.

(ii) Managing the University's credit rating to meet its strategic objectives while maintaining the highest acceptable creditworthiness and most favorable relative cost of capital and borrowing terms;

(iii) Optimizing the University's debt mix (i.e., short-term and long-term, fixed-rate and floating-rate) for the University's debt portfolio;

(iv) Managing the structure and maturity profile of debt to meet liquidity objectives and make funds available to support future capital projects and strategic initiatives;

(v) Coordinating debt management decisions with asset management decisions to optimize overall funding and portfolio management strategies.

The University may use debt to accomplish critical priorities by more prudently using debt financing to accelerate the initiation or completion of certain projects, where appropriate. As part of its review of each project, the University evaluates all funding sources to determine the optimal funding structure to achieve the lowest cost of capital.

II. Roles and Responsibilities; Compliance

The Office of the Vice Chancellor for Business Affairs ("VCBA") is responsible for implementing this policy and for all debt financing activities. The policy and any subsequent, material changes to the policy must be approved by the Chancellor after consultation with the University's Board of Trustees ("BOT".) The approved policy provides the framework under which debt management decisions are made.

The exposure limits listed in the policy are monitored on a regular basis by Treasury Services. The office of the VCBA reports regularly to the Chancellor and the BOT on the University's debt position and plans.

III. Procedures

A. Debt Affordability and Capacity

In assessing its current debt levels and when planning for additional debt, the University takes into account both its debt affordability and debt capacity. Debt affordability focuses on the University's ability to service its debt through its operating budget and identified revenue streams and is driven by strength in income and cash flows. Debt capacity focuses on the University's financial leverage in terms of debt funding as a percentage of the University's total capital.

The University considers many factors in assessing its debt affordability and debt capacity including its strategic plan, market position, and alternative sources of funding. The University

uses four key quantitative ratios to inform its assessments with respect to debt affordability and debt capacity.

The ratios described below are not intended to track a specific rating, but rather to help the University maintain a competitive financial profile and funding for facilities needs and reserves.

This Debt Policy is shared with external credit analysts and other parties to provide them with background on the University's philosophy on debt and management's assessment of debt capacity and affordability.

1. Debt Affordability Measures

a. Debt Burden Percentage

This ratio measures the University's debt service burden as a percentage of total university expenses. The target for this ratio is intended to maintain the University's long-term operating flexibility to finance existing requirements and new initiatives.

$$\frac{\text{ANNUAL DEBT SERVICE}}{\text{TOTAL OPERATING EXPENSES}} \leq 6.0\%$$

The measure is based on aggregate operating expenses as opposed to operating revenues because expenses typically are more stable (e.g. revenues may be subject to one-time operating gifts, investment return fluctuations, variability of State funding, etc.) and better reflect the operating base of the University. This ratio is adjusted to reflect any non-amortizing or non-traditional debt structures that could result in significant single year fluctuations including the effect of debt refundings.

b. Average Debt Service Coverage Ratio

This ratio measures the University's ability to cover debt service requirements from adjusted net operating income. This calculation is a three-year average of income compared to actual debt services on capital debt. The target established is intended to ensure that operating revenues are sufficient to meet debt service requirements and that debt service does not consume too large a portion of income.

$$\frac{\text{THREE YEARS ANNUAL OPERATING SURPLUS (DEFICIT) + NON-OPERATING REVENUE} + \text{DEPRECIATION}}{\text{THREE YEARS ANNUAL DEBT SERVICE}} > 2X$$

This ratio is adjusted to reflect any non-amortizing or non-traditional debt structures that could result in significant single year fluctuations including the effect of debt refundings.

2. Debt Capacity Measures

a. Average Viability Ratio

This ratio indicates one of the most basic determinants of financial health by measuring the three year average availability of liquid and expendable net assets to the three year average aggregate debt. The ratio measures the medium to long-term health of the University's balance sheet and debt capacity and is a critical consideration of universities with the highest credit quality.

Many factors influence the viability ratio, affecting both the assets (e.g., investment performance, philanthropy) and liabilities (e.g., timing of bond issues), and therefore the ratio is best examined in the context of changing market conditions so that it accurately reflects relative financial strength.

$$\frac{\text{THREE YEARS UNRESTRICTED NET ASSETS} + \text{RESTRICTED EXPENDABLE NET ASSETS}}{\text{THREE YEARS AGGREGATE DEBT}} \geq .6x$$

b. Debt Capitalization Ratio

This ratio measures the percentage of University capital that comes from debt. A university that relies too heavily on debt capital may risk being over-leveraged and potentially reduce its access to capital markets. Conversely, a university that does not strategically utilize debt as a source of capital may not be optimizing its funding mix, thereby sacrificing access to low-cost funding to invest in mission objectives.

$$\frac{\text{AGGREGATE DEBT}}{\text{TOTAL NET ASSETS} + \text{AGGREGATE DEBT}} <= 35\%$$

Both the Viability and Debt Capitalization Ratios include any component unit (University-related foundation) balances as disclosed in the University's financial statements.

B. Financing Sources

The University recognizes that there are numerous types of financing structures and funding sources available, each with specific benefits, risks, and costs. All potential funding sources are reviewed by management within the context of this Debt Policy and the overall portfolio to ensure that any financial product or structure is consistent with the University's objectives. Regardless of what financing structure(s) are utilized, due-diligence review must be performed for each transaction, including (i) quantification of potential risks and benefits; and (ii) analysis of the impact on University creditworthiness and debt affordability and capacity.

1. Tax-Exempt Debt

The University recognizes that tax-exempt debt is a significant component of the University's capitalization due in part to its substantial cost benefits; therefore, tax-exempt debt is managed as a portfolio of obligations designed to meet long-term financial objectives rather than as a series of discrete financings tied to specific projects. The University manages the debt portfolio to maximize its utilization of tax-exempt debt relative to taxable debt whenever possible. In all circumstances, however, individual projects continue to be identified and tracked to ensure compliance with all tax and reimbursement regulations.

For tax-exempt debt, the University considers maximizing the external maturity of any tax-exempt bond issue, subject to prevailing market conditions and opportunities and other considerations, including applicable regulations.

2. Taxable Debt

In instances where certain of the University's capital projects do not qualify for tax-exempt debt, the use of taxable debt may be considered. The taxable debt market offers certain advantages in terms of liquidity and marketing efficiency; such advantages will be considered when evaluating the costs and benefits of a taxable debt issuance.

3. Commercial Paper

Commercial paper provides the University with interim financing for projects in anticipation of philanthropy or planned issuance of long-term debt. The use of commercial paper also provides greater flexibility on the timing and structuring of individual bond transactions. This flexibility also makes commercial paper appropriate for financing equipment and short-term operating needs. The University recognizes that the amount of commercial paper is limited by this Debt Policy ratios, the University's variable-rate debt allocation limit, and the University's available liquidity support.

4. University-issued vs. State-Issued Debt

In determining the most cost effective means of issuing debt, the University evaluates the merits of issuing debt directly vs. participating in debt pools through the UNC System Board of Governors. On a regular basis, the University performs a cost/benefit analysis between these two options and takes into consideration the comparative funding costs, flexibility in market timing, and bond ratings of each alternative. The University also takes into consideration the future administrative flexibility of each issue such as the ability to call and/or refund issues at a later date, as well as the administrative flexibility to structure and manage the debt in a manner that the University believes to be appropriate and in the University's best interest.

5. Other Financing Sources

Given limited debt capacity and substantial capital needs, opportunities for alternative and non-traditional transaction structures may be considered. The University recognizes these types of transactions often can be more expensive than traditional University debt structures; therefore, the benefits of any potential transaction must outweigh any potential costs.

All structures may be considered only when the economic benefit and the likely impact on the University's debt capacity and credit have been determined. Specifically, for any third-party or developer-based financing, management ensures the full credit impact of the structure is evaluated and quantified.

C. Portfolio Management of Debt

The University considers its debt portfolio holistically to optimize the portfolio of debt for the entire University rather than on a project-by-project basis while taking into account the University's cash and investment portfolio (see Appendix A). Therefore, management makes

decisions regarding project prioritization, debt portfolio optimization, and financing structures within the context of the overall needs and circumstances of the University.

1. Variable-Rate Debt

The University recognizes that a degree of exposure to variable interest rates within the University's debt portfolio might be desirable in order to:

(i) take advantage of repayment/restructuring flexibility;

(ii) benefit from historically lower average interest costs;

(iii) provide a "match" between debt service requirements and the projected cash flows from the University's assets; and

(iv) diversify its pool of potential investors.

Management monitors overall interest rate exposure, analyzes and quantifies potential risks, including interest rate, liquidity and rollover risks, and coordinates appropriate fixed/variable allocation strategies. The portfolio allocation to variable-rate debt may be managed or adjusted through (i) the issuance or redemption of debt in the conventional debt market (e.g. new issues and refundings) and (ii) the use of interest rate derivative products including swaps.

The amount of variable-rate debt outstanding (adjusted for any derivatives) shall not exceed 10% of the University's outstanding debt. This limit is based on the University's desire to: (i) limit annual variances in its interest payments; (ii) provide sufficient structuring flexibility to management; (iii) keep the University's variable-rate allocation within acceptable external parameters; and (iv) utilize variable-rate debt (including derivatives) to optimize debt portfolio allocation and minimize costs.

$$\frac{\text{VARIABLE-RATE DEBT (INCLUDING SYNTHETIC DEBT)}}{\text{TOTAL DEBT OUTSTANDING}} \quad <=10\%$$

2. Refinancing Outstanding Debt

The University monitors its debt portfolio on a continual basis to assure portfolio management objectives are being met and to identify opportunities to lower its cost of funding, primarily through refinancing outstanding debt. The University of North Carolina General Administration prefers a savings of 2% for refinancing current outstanding debt. Savings requirements in excess of 2% may be required from time to time by the Vice Chancellor for Business Affairs.

The University monitors the prices and yields of its outstanding debt and attempts to identify potential refunding candidates by examining refunding rates and calculating the net present value of any refunding savings after taking into account all transaction costs. The University may choose to pursue refundings for economic and/or legal reasons. The University reserves the right to not partially refund an issue.

3. Liquidity Requirements

If the University's portfolio includes variable-rate debt and commercial paper, liquidity support is required in the event of the bonds or paper being put back to the University by investors. Generally, the University can purchase liquidity support externally from a

bank in the form of a standby bond purchase agreement or line of credit. In addition, the University may consider using its own capital in lieu of or to supplement external liquidity facilities. Alternatively, it may utilize variable-rate structures that do not require liquidity support (e.g. auction-rate products.)

Just as the University manages its debt on a portfolio basis, it also manages its liquidity needs by considering its entire asset and debt portfolio, rather than managing liquidity solely on an issue-specific basis. This approach permits institution-wide evaluation of desired liquidity requirements and exposure, minimizes administrative burden, and reduces total liquidity costs.

A balanced approach may be used to provide liquidity support to enhance credit for variable-rate debt, through a combination of external bank liquidity, auction market or derivative structures. Using a variety of approaches limits dependence on an individual type or source of credit; it also allows for exposure to different types of investors. The University must balance liquidity requirements with its investment objectives and its cost and renewal risk of third-party liquidity providers.

Further, a portfolio-approach to liquidity can enhance investment flexibility, reduce administrative requirements, lower total interest costs, and reduce the need for external bank liquidity.

4. Overall Exposure

The University recognizes that it may be exposed to interest rate, third-party credit, and other potential risks in areas other than direct University debt (e.g., counterparty exposure in the investment portfolio, etc.) and, therefore, exposures are considered on a comprehensive University-wide basis.

D. Strategic Debt Allocation

Recognizing that financial resources are not sufficient to fund all capital projects, management must allocate debt strategically, continuing to explore alternate sources of funding for projects. External support, philanthropy, and direct State investment remain critical to the University's facilities investment plan.

Management allocates the use of debt financing internally within the University to reflect the prioritization of debt resources among all uses, including plant and equipment financing, academic projects, and projects with institutional impact. Generally, the University favors debt financing for those projects critical to the attainment of its strategic goals and those projects with identified revenue streams for the repayment of debt service and incremental operating costs.

Each capital project is analyzed at its inception to ensure that capital is used in the most effective manner and in the best interests of the University. There is an initial institutional review of each project, prior to its inclusion in the capital plan, to determine if debt leveraging would be desirable even if not requested by the project sponsor.

As part of this initial institutional review, the University also will assess, based on the project's business plan, the sufficiency of revenues to support any internal loans. If the University determines that collateral is necessary, it may require the entity to segregate unrestricted funds for this purpose.

E. Debt Administration and Other Matters

The issuance of tax-exempt debt generally requires the aid and assistance of several outside parties:

- Use of a financial advisor is recommended with a competitive selection process at least once every five years.
- Bond counsel appointments are competitively determined at least once every five years.
- The selection of underwriters is recommended for each debt issuance using a competitive process. Co-managers are recommended for issuances of $30 million or more and will be selected from the same group of underwriters responding to the competitive bid process.

Debt issuance can be "sized" to include capitalized interest and borrowing costs up to 5% of the debt issuance.

Reimbursement resolutions will be prepared for each debt issuance.

F. Approval Process

All debt issued is by the authority granted to the UNC System Board of Governors under N.C.G.S. § 116D, Article 3. All debt issue is approved by the UNC Charlotte Board of Trustees and then by the UNC System Board of Governors.

When the University participates in bond programs that are administered by the State, including State tax supported debt, such bonds are issued by the State Treasurer, who also possesses the authority to price such bonds.

Revision History: Initially approved February 2, 2015
A**uthority:** Chancellor
Responsible Office: Business Affairs

The University of North Carolina System Debt Capacity Study - Fiscal Year 2019

The University of North Carolina at Greensboro

Institution Report

May 19, 2020

The University of North Carolina at Greensboro

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), University of North Carolina at Greensboro ("*UNC Greensboro*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. UNC Greensboro has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, UNC Greensboro, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—UNC Greensboro has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, UNC Greensboro's debt capacity reflects the amount of debt UNC Greensboro could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that UNC Greensboro intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- UNC Greensboro's current debt profile, including project descriptions financed with, and the sources of repayment for, UNC Greensboro's outstanding debt;
- UNC Greensboro's current credit profile, along with recommendations for maintaining or improving UNC Greensboro's credit rating; and
- A copy of any UNC Greensboro debt management policy currently in effect.

Overview of UNC Greensboro

For the fall 2018 semester, UNC Greensboro had a headcount student population of approximately 20,106, including 16,641 undergraduate students and 3,465 graduate and doctoral students. UNC Greensboro employs approximately 1,141 full-time, part-time and temporary instructional faculty.

Over the past 5 years, UNC Greensboro's enrollment has grown by 8%. UNC Greensboro's average age of plant (11.86 years) is lower than the median ratio for all institutions (14.53 years). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs.

UNC Greensboro does not anticipate significant additional borrowings during the Study Period.

UNC Greensboro has made no changes to the financial model's standard growth assumptions, which are based on the Consumer Price Index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Outstanding debt service is based on UNC Greensboro's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to UNC Greensboro by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt UNC Greensboro expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below may overstate UNC Greensboro's current debt burden.

1	2	3	4	5	6
		Obligated Resources			
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	132,651,462	22,653,227	-		155,304,689
2016	153,067,113	17,181,012	-	9.62%	170,248,125
2017	171,993,830	17,318,421	-	11.20%	189,312,251
2018	(251,724,686)	18,690,763	425,862,995	1.86%	192,829,072
2019	(210,943,811)	19,581,421	405,766,445	11.19%	214,404,055
2020	218,048,924	-	-	1.70%	218,048,924
2021	221,755,756	-	-	1.70%	221,755,756
2022	225,525,603	-	-	1.70%	225,525,603
2023	229,359,539	-	-	1.70%	229,359,539
2024	233,258,651	-	-	1.70%	233,258,651

		Operating Expenses			
Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	350,207,094	4,298,787	-		354,505,881
2016	359,530,904	5,479,604	-	2.96%	365,010,508
2017	391,641,862	(129,813)	-	7.26%	391,512,049
2018	413,394,628	(1,364,900)	4,437,708	6.37%	416,467,436
2019	427,326,795	(882,169)	4,121,222	3.39%	430,565,848
2020	437,885,467	-	-	1.70%	437,885,467
2021	445,329,520	-	-	1.70%	445,329,520
2022	452,900,122	-	-	1.70%	452,900,122
2023	460,599,424	-	-	1.70%	460,599,424
2024	468,429,614	-	-	1.70%	468,429,614

7	8	9	10	11
		Outstanding Debt		
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	13,487,286	13,973,294	27,460,580	295,495,913
2021	14,106,898	13,356,302	27,463,200	281,389,015
2022	14,531,649	12,746,038	27,277,688	266,857,366
2023	15,114,543	12,092,287	27,206,830	251,742,823
2024	14,340,583	11,399,192	25,739,775	237,402,240
2025	15,050,772	10,697,610	25,748,383	222,351,468
2026	15,745,116	9,979,304	25,724,420	206,606,352
2027	21,211,352	9,248,964	30,460,316	185,395,000
2028	14,230,000	8,395,600	22,625,600	171,165,000
2029	14,920,000	7,704,100	22,624,100	156,245,000
2030	14,490,000	6,958,100	21,448,100	141,755,000
2031	15,145,000	6,260,150	21,405,150	126,610,000
2032	15,885,000	5,571,900	21,456,900	110,725,000
2033	16,575,000	4,836,850	21,411,850	94,150,000
2034	17,290,000	4,109,400	21,399,400	76,860,000
2035	16,045,000	3,434,163	19,479,163	60,815,000
2036	16,730,000	2,749,963	19,479,963	44,085,000
2037	12,240,000	2,049,838	14,289,838	31,845,000
2038	10,250,000	1,527,850	11,777,850	21,595,000
2039	10,730,000	1,046,750	11,776,750	10,865,000
2040	2,520,000	543,250	3,063,250	8,345,000
2041	2,645,000	417,250	3,062,250	5,700,000
2042	2,780,000	285,000	3,065,000	2,920,000
2043	2,920,000	146,000	3,066,000	-

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Unrestricted Net Position plus Foundation Temporarily Restricted Net Position minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projection period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	70,602,615	129,017,041	-	-	-		22,653,227	222,272,883
2016	84,727,871	122,156,867	-	-	8,348,136	-2.95%	17,181,012	215,717,614
2017	87,510,902	146,993,613	-	-	12,928,838	10.74%	17,318,421	238,894,098
2018	(335,007,428)	157,266,942	-	-	8,219,480	8.25%	444,553,758	258,593,792
2019	(308,857,519)	163,626,500			8,488,727	5.04%	425,347,866	271,628,120
2020	118,470,683	166,408,151	-	-	8,633,035	1.70%	-	276,245,798
2021	120,484,685	169,237,089	-	-	8,779,797	1.70%	-	280,941,977
2022	122,532,924	172,114,120	-	-	8,929,054	1.70%	-	285,717,990
2023	124,615,984	175,040,060	-	-	9,080,847	1.70%	-	290,575,196
2024	126,734,456	178,015,741	-	-	9,235,222	1.70%	-	295,514,974

3. Proposed Debt Financings

While UNC Greensboro evaluates its capital investment needs on a regular basis, UNC Greensboro currently has not legislatively approved projects that it anticipates financing during the study period.

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** UNC Greensboro's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

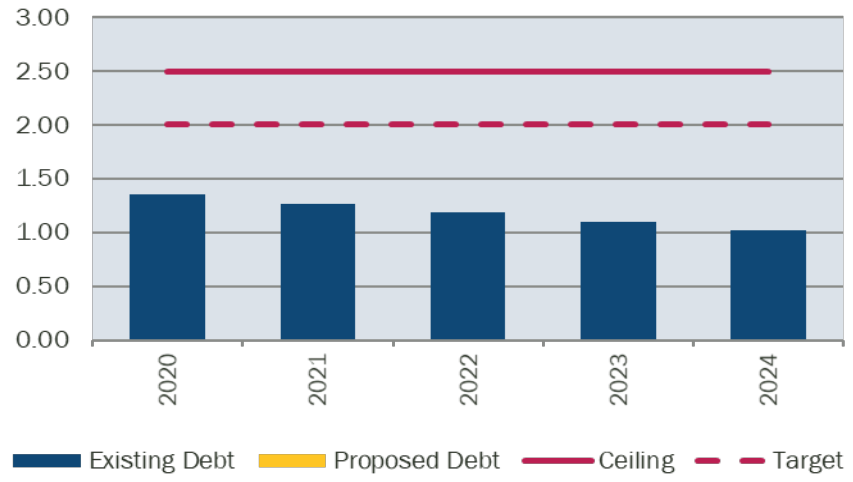
- Target Ratio: 2.00
- Ceiling Ratio: Not to exceed 2.50
- Projected 2020 Ratio: 1.36
- Highest Study Period Ratio: 1.36 (2020)

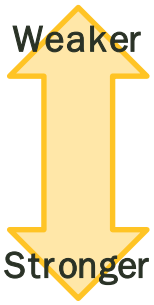
*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	218,048,924	1.70%	295,495,913	-	1.36	n/a	1.36
2021	221,755,756	1.70%	281,389,015	-	1.27	n/a	1.27
2022	225,525,603	1.70%	266,857,366	-	1.18	n/a	1.18
2023	229,359,539	1.70%	251,742,823	-	1.10	n/a	1.10
2024	233,258,651	1.70%	237,402,240	-	1.02	n/a	1.02

Debt to Obligated Resources





5-Year Payout Ratio Overview

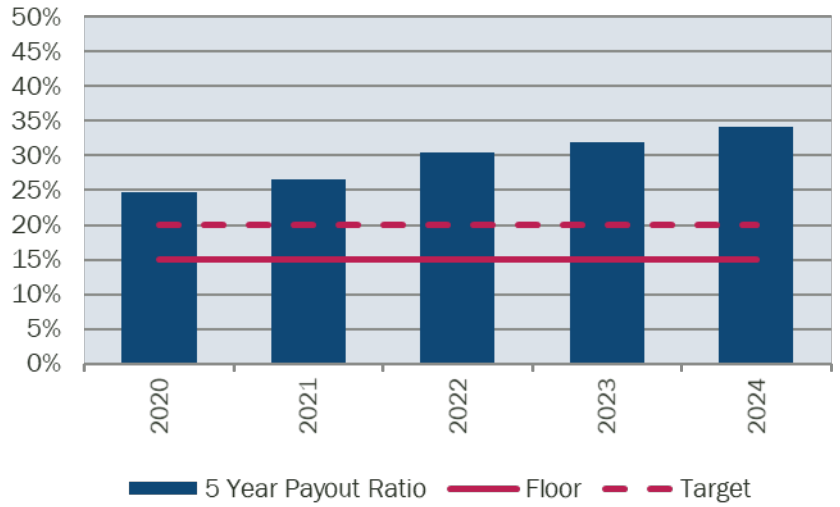
- **What does it measure?** The percentage of UNC Greensboro's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

- Target Ratio: 20%
- Floor Ratio: Not less than 15%
- Projected 2020 Ratio: 25%
- Lowest Study Period Ratio: 25% (2020)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	295,495,913	25%
2021	281,389,015	27%
2022	266,857,366	31%
2023	251,742,823	32%
2024	237,402,240	34%

5-Year Payout Ratio



Expendable Resources to Debt

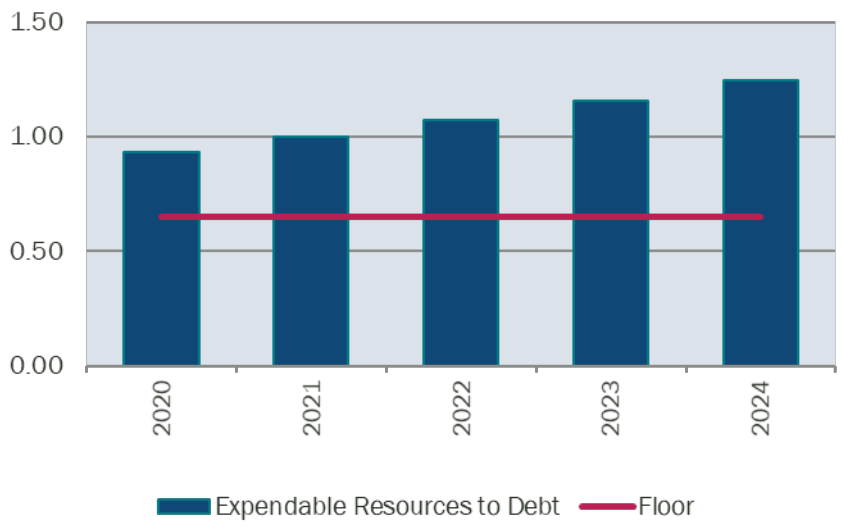
- **What does it measure?** The number of times UNC Greensboro's liquid and expendable net position cover its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

- Floor Ratio: Not less than 0.65x
- Projected 2020 Ratio: 0.93x
- Lowest Study Period Ratio: 0.93x (2020)

Expendable Resources to Debt

1	2	3	4	5	6	7
Expendable Resources to Debt						
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	276,245,798	1.70%	295,495,913	-	0.93	0.93
2021	280,941,977	1.70%	281,389,015	-	1.00	1.00
2022	285,717,990	1.70%	266,857,366	-	1.07	1.07
2023	290,575,196	1.70%	251,742,823	-	1.15	1.15
2024	295,514,974	1.70%	237,402,240	-	1.24	1.24

Expendable Resources to Debt



Debt Service to Operating Expenses

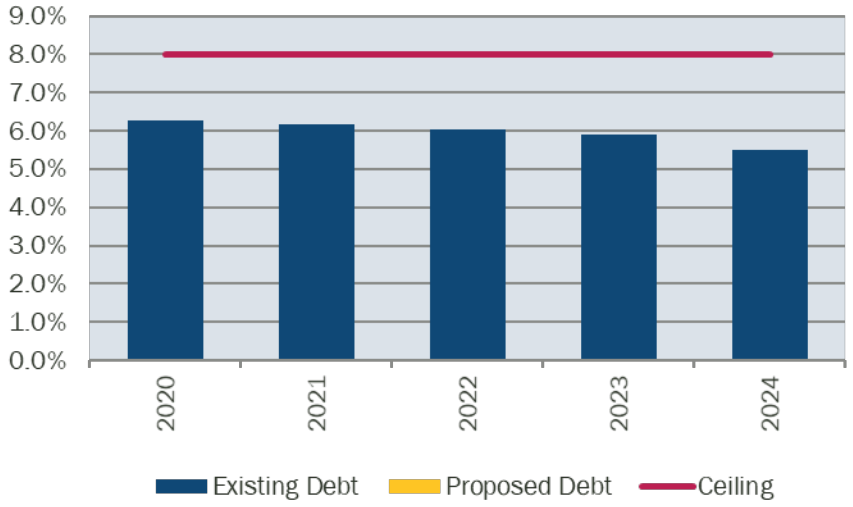
- **What does it measure?** UNC Greensboro's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

- Policy Ratio: Not to exceed 8.00%
- Projected 2020 Ratio: 6.27%
- Highest Study Period Ratio: 6.27% (2020)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	437,885,467	1.70%	27,460,580	-	6.27%	n/a	6.27%
2021	445,329,520	1.70%	27,463,200	-	6.17%	n/a	6.17%
2022	452,900,122	1.70%	27,277,688	-	6.02%	n/a	6.02%
2023	460,599,424	1.70%	27,206,830	-	5.91%	n/a	5.91%
2024	468,429,614	1.70%	25,739,775	-	5.49%	n/a	5.49%

Debt Service to Operating Expenses



5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, UNC Greensboro's debt capacity is based on the amount of debt UNC Greensboro could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, UNC Greensboro's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, UNC Greensboro's current estimated debt capacity is **$249,626,397.** After taking into account any legislatively approved projects detailed in **Section 3** above, if UNC Greensboro issued no additional debt until the last year of the Study Period, then UNC Greensboro's debt capacity for 2024 is projected to increase to **$345,744,387.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	1.36	2.50	249,626,397
2021	1.27	2.50	273,000,374
2022	1.18	2.50	296,956,643
2023	1.10	2.50	321,656,024
2024	1.02	2.50	345,744,387

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of UNC Greensboro's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" does not necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- **If UNC Greensboro were to use all of its calculated debt capacity during the Study Period, UNC Greensboro's credit ratings may face significant downward pressure**.
- Projecting the exact amount UNC Greensboro could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **Use of Multiple Factors**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.
  - **The State's Impact**
    - In assessing each institution's credit rating, rating agencies also consider the State's credit

rating and demographic trends, the health of its pension system, the level of support it has historically provided to the institution, and any legislation or policies affecting campus operations.
    - Historically, each institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
    - If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.
- **Factor Interdependence**
    - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
    - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
    - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
    - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

UNC Greensboro's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 2005A	UNC System Pool Revenue Bonds	1,615,000	4/1/2020	Baseball Stadium	1997B	Student Facilities
				Phillips-Hawkins Renovation	1997C	Housing System
				Residence Hall Wiring	1997D	Housing System
				Walker/McIver Parking Decks	2000G	Parking System
Series 2010B-2	UNC System Pool Revenue Bonds	10,810,000	4/1/2026	EUC Addition and Renovation	2001A	Student Facilities
				Soccer Stadium	2001B	Student Facilities
				Student Recreation Center	2001B	Student Facilities
				Oakland Parking Deck	2001B	Parking System
				EUC Addition - Dining Facilities	2001B	Dining System
Series 2011	General Revenue & Refunding Bonds	7,765,000	4/1/2036	Highrise Roofs	2002A	Housing System
				Quad Renovations		Housing System
				Dining Hall Renovations		Dining System
Series 2012A	General Revenue and Revenue Refunding Bonds	19,295,000	4/1/2037	Track	2004C	Student Facilities
				Softball Stadium	2004C	Student Facilities
				Residence Hall Bath HVAC	2002A	Housing System
				Jefferson Suites Residence Hall		Housing System
				Moore/Strong Renovation	2004C	Housing System
				Jefferson Suites Dining	2004C	Dining System
				Dining Hall Roof	2004C	Dining System
				Campus Police Building		Auxiliary Administration
Series 2014	General Revenue Bonds	111,060,000	4/1/2039	Student Recreation Center		Student Facilities
				Spartan Village Phase I		Housing System
Series 2015	General Revenue Refunding Bond	6,800,000	4/1/2026	Baseball Stadium	2005A 2012B	Student Facilities
				Phillips-Hawkins Renovation	2005A 2012B	Housing System
				Residence Hall Wiring	2005A 2012B	Housing System
				Walker/McIver Parking Decks	2005A 2012B	Parking System
Series 2016	General Revenue Refunding Bonds	21,575,000	4/1/2034	Spring Garden Apartments	2009A	Housing System
				Spring Garden Apartments Parking Deck		Parking System
Series 2017	CFF Leases	8,993,199	4/1/2027	Theater Project Administrative Support Project		Appropriations, Auxiliary Admin, and Student Fees
Series 2017	General Revenue Refunding Bonds	77,175,000	4/1/2036	Quad Renovations		Student Facilities
				Dining Hall Renovations		Dining System
				Jefferson Suites Residence Hall		Housing System
				Jefferson Suites Dining		Dining System
				Campus Police Building		Auxiliary Administration
Series 2018	General Revenue Bonds	43,895,000	4/1/2043	Spartan Village Phase II		Housing System
Total		308,983,199				

Approved by the UNC Board of Governors on May 20, 2020

7. Credit Profile

The following page provides a snapshot of UNC Greensboro's current credit ratings, along with (1) a summary of various credit factors identified in UNC Greensboro's most recent rating report and (2) recommendations for maintaining and improving UNC Greensboro's credit ratings in the future.

Credit Profile of the University – (General Revenue)

Overview

- Moody's maintains a Aa3 rating on UNC Greensboro's general revenue bonds. The outlook is stable.
- Standard and Poor's maintains an A+ rating on UNC Greensboro's general revenue bonds. The outlook is stable.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-

Non Investment Grade

Key Information Noted in Reports

Credit Strengths

- Healthy support for operations and capital projects from the Aaa-rated State of North Carolina
- Moderate sized public university with favorable student demand
- Future financial reserve growth will should outperform previous years as a period of extensive capital investment concludes
- Solid financial management and planning supports continued favorable operating performance

Credit Challenges

- State-imposed tuition pricing constraints limit pricing flexibility and will likely suppress tuition revenue growth
- Elevated financial leverage which may limit the ability to issue more debt without additional revenue growth

Recommendations & Observations

- Pursue strategies, working within the existing statutory framework relating to reversions, to increase liquidity through growth in cash reserves.
- Continue to seek strategies to limit new debt in the near term while addressing critical infrastructure needs, in accordance with UNC Greensboro's existing debt policy and in service of UNC Greensboro's other strategic initiatives.

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8. Peer Comparison

Moody's Key Credit Ratios	University of North Carolina Greensboro	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2018	Virginia Commonwealth University	Western Michigan University	Bowling Green State University	Oregon State University	
Most Senior Rating	Aa3	Aa2	Aa3	A1	Aa3	Aa3
Total Debt ($, in millions)	323	1091	299	284	1493	437
Total Cash & Investments ($, in millions)	448	3294	735	416	8891	735
Operating Revenue ($, in millions)	425	1060	572	360	6724	691
Operating Expenses ($, in millions)	398	1104	519	373	6123	641
Market Performance Ratios						
Annual Change in Operating Revenue (%)	8.0%	0.1%	0.5%	-0.7%	4.2%	2.7%
Operating Ratios						
Operating Cash Flow Margin (%)	14.2%	0.1%	17.0%	9.1%	16.0%	12.1%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	1.1	3.0	1.4	1.1	1.5	1.0
Total Debt to Operating Expenses (x)	0.8	1.0	0.6	0.8	0.2	0.5
Monthly Days Cash on Hand (x)	111	144	0	224	407	156
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	1.4	3.0	2.5	1.5	6.0	1.6
Debt Service to Operating Expenses (%)	6.1%	3.8%	18.8%	4.6%	1.9%	4.5%
Total Debt-to-Cash Flow (x)	5.3	26.0	3.1	8.7	1.4	4.6

Approved by the UNC Board of Governors on May 20, 2020

Debt Management Policies

UNC Greensboro's current debt policy is included in the following pages.

Financial Services Policy 13 – Debt Policy

A. Objectives:

1. Prudent utilization of debt to provide a low cost source of capital to fund capital projects and other strategic initiatives in order to achieve the University's mission and strategic objectives.
2. Management of the University's overall debt level in order to provide appropriate access to capital and to maintain a credit rating deemed acceptable by the Board. The minimum acceptable underlying rating for a University issue is the single "A" category by the major rating agencies.
3. Management of the University debt portfolio by balancing the goal of attaining the lowest cost of capital with the goal of minimizing interest rate risk.
4. Management of outstanding debt over time to achieve a low cost of capital and to take advantage of interest rate cycles and refunding opportunities.
5. Assure projects financed have a feasible plan of repayment.

B. Legal Authority for Financings

University financings will conform to the authority granted by North Carolina and Federal laws.

1. General Revenue Bonds

   The Board of Governors of the University of North Carolina is authorized under Chapter 116 of the General Statutes of North Carolina as amended, to issue, subject to the approval of the Director of Budget, at one time or from time to time, special obligation bonds of the Board, for the purpose of paying all or any part of the cost of acquiring, constructing or providing one or more capital facilities at UNCG or refunding any bonds issued under any provision of any Article of Chapter 116 for the benefit of UNCG.

2. Energy Savings Performance Contracts

   UNCG has the power, pursuant to Chapter 142, Article 8 of the General Statutes of North Carolina, to enter into installment financing contracts to finance the purchase of personal property, including equipment for energy savings projects. For energy savings projects, approval is required by the Office of State Budget and Management, the State Treasurer, the State Energy Office, and the Council of State.

3. Interest Rate Swaps

   Interest rate swaps and other derivative products are authorized under Chapter 159 of the General Statutes of North Carolina. In general, interest rate swaps are utilized to reduce the cost and/or risk of existing or planned University debt. By using swaps in a prudent manner, the University can take advantage of market opportunities to reduce debt service cost and/or interest rate risk. The use of swaps must be tied directly to University debt instruments. Swaps may not be utilized for speculative purposes.

C. Assignment of Responsibilities

1. The University takes a comprehensive team approach relative to managing debt. The "Debt Management Team" consists of the Vice Chancellor for Business Affairs (VC – Business Affairs), the Associate Vice Chancellor for Finance (AVC – Finance), the Director of Financial Planning & Budgets (Budget Director), the University Controller (Controller), the Bond Legal Counsel (Bond Counsel), and the Financial Advisor.
2. The VC – Business Affairs participates in the executive level capital planning for all University Facilities. For Self-liquidating Capital Projects, the VC – Business Affairs coordinates through the Associate Vice Chancellor for Facilities, the development and periodic updating of the self-liquidating capital projects multi-year plan, which is the basis for defining the debt needs.
3. The AVC – Finance works closely with the VC – Business Affairs and the Budget Director in the selection of the primary advisors on debt. These primary advisors are the Bond Counsel and the Financial Advisor, who are engaged for a period of years, upon approval by the Vice President for Finance of the University of North Carolina. It is the AVC – Finance's role to work with the Financial Advisor and assess debt capacity based on the current outstanding debt and any planned issues, including the multi-year Self-Liquidating Capital Projects plan. If it is determined that the University will reach its debt capacity from issuing debt on the proposed projects, then priorities and timing will be addressed with the VC – Business Affairs and the project owners to best meet the overall needs of the University. During the year, the Associate Vice Chancellor for Finance meets periodically with the Financial Advisor and/or Bond Counsel other members of the Management Team to discuss debt needs, opportunities and options, including any upcoming debt issues and/or refundings. If action is warranted, the entire team is pulled together to decide upon the merits and, if justified, to define a plan to accomplish the debt issuance, refunding, swap, liquidation or other initiative.
4. It is the Budget Director's primary role to assemble the project description and required financial and statistical information, review the official statements and to do the reporting required by the SEC (NRMSIR).
5. It is the role of the Financial Advisor and Bond Counsel to recommend the approach and financing instrument to best meet the needs of the University and to coordinate the RFP and selection of financial institutions and/or underwriters. The Bond Counsel secures the most favorable terms and covenants, and coordinates the preparation of legal documents with input and review by the Debt Management Team. The Financial Advisor coordinates the preparation of the details of the financing and insurance or other credit enhancements. The Financial Advisor also coordinates review and rating by the appropriate rating agencies.
6. It is the Controller's primary role to coordinate receipt and distribution of proceeds, payments to fiscal agents, allocations of debt service payments to project owners, arbitrage calculations and reporting, and financial reporting.

D. Debt Management Strategies

1. Fixed versus variable rate allocation

   The University will assess prevailing market interest rates and the current debt mix to determine whether to issue fixed or variable rate debt. Variable rate debt can provide a lower cost of capital, but introduces additional risks. To limit this risk, variable rate debt will be no more than 40% of the overall debt outstanding.

Variable rate exposure may be achieved directly through debt issuance or indirectly by entering into an interest rate swap contract.

2. Methods of Sale

The University will consider various methods of sale. Negotiated and competitive sales will be considered on an individual transaction basis. Issue size and complexity will be factors in determining which method of sale to pursue. A retail sales approach may be implemented if deemed appropriate for the particular transaction.

3. Purchase of Insurance or Credit Enhancement

The University will evaluate insurance and credit enhancement opportunities and utilize them if they are deemed cost effective.

4. Refunding Targets

The University will monitor its debt portfolio for refunding and/or restructuring opportunities. Advance refunding transactions must weigh the current opportunity against possible future refunding opportunities. In general, for a stand-alone refunding, the University will enter into a transaction that produces greater than 3% net present value savings, with this threshold higher for those transactions with a long escrow, such as advance refundings. The savings threshold can be less for refundings combined with new issues or other refundings, or for business reasons such as freeing up a reserve fund.

5. Selection of Underwriters and Participants on the Selling Team

The University will utilize a request for proposal process to select senior and co-managing underwriters for University debt issuance. The University will reserve the right to utilize a competitive process for any debt issue.

6. Efficiency of Issuance

The University will combine capital projects within a reasonable time horizon into a single issuance to save costs, to the extent that it is feasible. For small issues even after combining, the University of North Carolina bond pool will be utilized if the timing meets UNCG's needs and it is cost effective and efficient for UNCG. For larger issues, the bond pool will be utilized if significant cost savings can be realized as well as being efficient and timely for UNCG. Stand alone issues will be utilized when in the best interest of UNCG upon approval of the Vice President for Finance.

7. Integrity of Revenue Streams

The revenue system (housing & dining, or parking, or student fees, etc.) for each self-liquidating capital project must stand on its own bottom line, supported by a revenue stream that can fully liquidate the debt

over the amortization period in a fiscally sound manner. Debt service costs will be allocated to the capital project owners in proportion to the projects participation in the borrowing.

8. Debt Service Leveling and Reserve for Variable Rate Debt Fluctuations

   The University will allocate debt service costs on capital projects funded with variable rate debt to the capital project owners on a fixed rate basis, effective at the time of issue, over the course of the amortization period. The differences between the allocation and the actual debt service will be placed in a reserve and returned to the project owners at the end of the amortization period. This is effectively an internal hedge to protect business operations from wide fluctuation in variable rates over the life of the debt with a leveling factor. Interest income will be allocated to the reserve.

E. Debt Compliance and Reporting

1. Continuing Disclosure Compliance

   The University will meet the ongoing disclosure requirements in accordance with SEC Rule 15c2-12 (NRMSIR). The University will submit all reporting required with respect to outstanding bonds or certificates of participation to which such Rule is applicable.

2. Arbitrage Rebate Compliance

   The University will comply with arbitrage requirements on invested tax-exempt bond proceeds. Arbitrage calculations will be performed as needed.

May 19, 2020

The University of North Carolina at Pembroke

The University of North Carolina System Debt Capacity Study – Fiscal Year 2019

The University of North Carolina at Pembroke

Institution Report

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), The University of North Carolina at Pembroke ("*UNCP*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. UNCP has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, UNCP, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—UNCP has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, UNCP's debt capacity reflects the amount of debt UNCP could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that UNCP intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- UNCP's current debt profile, including project descriptions financed with, and the sources of repayment for, UNCP's outstanding debt;
- UNCP's current credit profile, along with recommendations for maintaining or improving UNCP's credit rating; and
- A copy of any UNCP debt management policy currently in effect.

Overview of UNCP

For the fall 2018 semester, UNCP had a headcount student population of approximately 7,137, including 6,069 undergraduate students and 1,068 graduate and doctoral students. For the 2018-19 academic year, UNCP employed approximately 330 full-time, part-time and temporary instructional faculty.

Over the past 5 years, UNCP's enrollment has increased approximately 14%. UNCP's average age of plant (13.73 years) is lower than the median ratio for all institutions (14.53 years). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs. UNCP anticipates incurring approximately $4.4 million in additional debt during the Study Period, as summarized in **Section 3** below. UNCP has made no changes to the financial model's standard growth assumptions, which are based on the Consumer Price Index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 AND GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Outstanding debt service is based on UNCP's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to UNCP by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt UNCP expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below may overstate UNCP's current debt burden.

1	2	3	4	5	6
		Obligated Resources			
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	26,674,316	6,888,881	-		33,563,197
2016	31,301,966	5,138,782	-	8.57%	36,440,748
2017	33,813,637	5,641,926	-	8.27%	39,455,563
2018	(106,329,518)	6,799,196	139,750,749	1.94%	40,220,427
2019	(105,387,130)	7,606,125	132,900,381	-12.68%	35,119,376
2020	35,716,405	-	-	1.70%	35,716,405
2021	36,323,584	-	-	1.70%	36,323,584
2022	36,941,085	-	-	1.70%	36,941,085
2023	37,569,084	-	-	1.70%	37,569,084
2024	38,207,758	-	-	1.70%	38,207,758

		Operating Expenses			
Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	113,351,360	1,437,592	-		114,788,952
2016	119,081,763	1,752,526	-	5.27%	120,834,289
2017	122,942,369	(497,303)	-	1.33%	122,445,066
2018	120,516,620	(1,155,085)	1,798,622	-1.05%	121,160,157
2019	127,983,293	(806,929)	6,921,090	10.68%	134,097,454
2020	136,377,111	-	-	1.70%	136,377,111
2021	138,695,522	-	-	1.70%	138,695,522
2022	141,053,345	-	-	1.70%	141,053,345
2023	143,451,252	-	-	1.70%	143,451,252
2024	145,889,924	-	-	1.70%	145,889,924

7	8	9	10	11
		Outstanding Debt		
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	2,313,281	2,083,923	4,397,204	53,721,168
2021	2,459,333	2,005,825	4,465,157	51,261,835
2022	2,450,036	1,923,769	4,373,805	48,811,799
2023	2,586,668	1,838,069	4,424,737	46,225,131
2024	2,711,809	1,747,306	4,459,115	43,513,323
2025	4,085,615	1,652,336	5,737,951	39,427,708
2026	2,598,249	1,513,938	4,112,187	36,829,459
2027	2,744,882	1,417,156	4,162,038	34,084,577
2028	2,885,690	1,315,138	4,200,828	31,198,887
2029	3,045,858	1,207,856	4,253,714	28,153,029
2030	3,205,578	1,094,511	4,300,090	24,947,451
2031	3,380,050	975,092	4,355,142	21,567,401
2032	3,559,481	848,865	4,408,346	18,007,920
2033	3,644,087	716,074	4,360,161	14,363,832
2034	3,469,095	580,127	4,049,222	10,894,737
2035	3,514,737	453,968	3,968,705	7,380,000
2036	1,140,000	324,643	1,464,643	6,240,000
2037	935,000	276,259	1,211,259	5,305,000
2038	975,000	234,978	1,209,978	4,330,000
2039	1,015,000	191,930	1,206,930	3,315,000
2040	1,060,000	147,117	1,207,117	2,255,000
2041	1,105,000	100,317	1,205,317	1,150,000
2042	1,150,000	51,160	1,201,160	-
2043			-	-

Notes

- Expendable Resources equals Unrestricted Net Assets plus Restricted, Expendable Net Assets plus Foundation Unrestricted Net Assets plus Foundation Temporarily Restricted Net Assets minus Restricted, Expendable Net Assets Restricted for Capital Projects.
- Unrestricted Net Assets has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projection period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	3,065,037	15,801,611	-	-	3,665,378		6,888,881	22,090,152
2016	3,786,104	14,063,150	-	-	3,419,547	-11.42%	5,138,782	19,568,489
2017	5,005,661	12,854,724	-	-	2,955,461	5.00%	5,641,926	20,546,850
2018	(135,809,916)	27,896,141	-	-	15,856,387	9.15%	146,197,297	22,427,135
2019	(130,771,882)	34,784,454			24,422,135	-10.39%	140,506,506	20,096,943
2020	9,900,113	35,375,790	-	-	24,837,311	1.70%	-	20,438,591
2021	10,068,415	35,977,178	-	-	25,259,546	1.70%	-	20,786,047
2022	10,239,578	36,588,790	-	-	25,688,958	1.70%	-	21,139,410
2023	10,413,650	37,210,800	-	-	26,125,670	1.70%	-	21,498,780
2024	10,590,682	37,843,383	-	-	26,569,807	1.70%	-	21,864,259

3. Proposed Debt Financings

The table below summarizes any legislatively approved projects that UNCP expects to finance during the Study Period. Using the assumptions outlined in the table below, the model has developed a tailored, but conservative, debt service schedule for each proposed financing and incorporated each pro forma debt service schedule into its calculations of the financial ratios as detailed in **Section 4** of this Institution Report.

UNCP Proposed Debt Financings

Year	Use of Funds	Borrowing Amount	Term	Source of Repayment
2020	Campus Rec/Baseball Softball Outdoor Complex	4,400,000	30	Debt Service Fee
Total		4,400,000		

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** UNCP's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

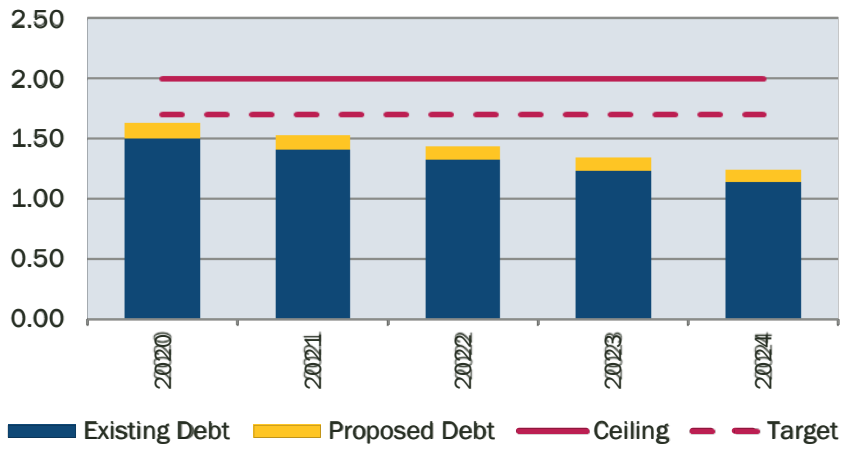
- Target Ratio: 1.70
- Ceiling Ratio: Not to exceed 2.00
- Projected 2020 Ratio: 1.42
- Highest Study Period Ratio: 1.42 (2020)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	35,716,405	1.70%	53,721,168	4,400,000	1.50	0.12	1.63
2021	36,323,584	1.70%	51,261,835	4,309,447	1.41	0.12	1.53
2022	36,941,085	1.70%	48,811,799	4,216,059	1.32	0.11	1.44
2023	37,569,084	1.70%	46,225,131	4,119,748	1.23	0.11	1.34
2024	38,207,758	1.70%	43,513,323	4,020,423	1.14	0.11	1.24

Debt to Obligated Resources



5-Year Payout Ratio Overview

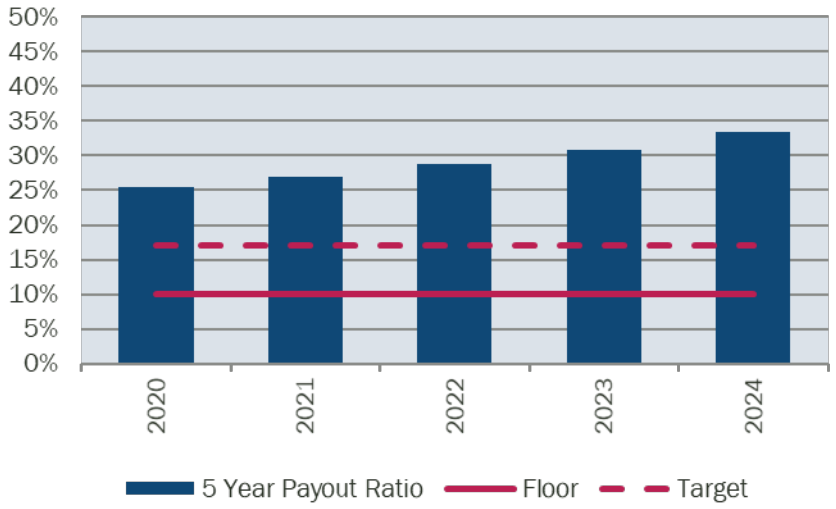
- **What does it measure?** The percentage of UNCP's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

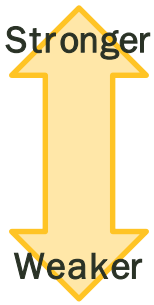
- Target Ratio: 17%
- Floor Ratio: Not less than 10%
- Projected 2020 Ratio: 25%
- Lowest Study Period Ratio: 25% (2020)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	58,121,168	25%
2021	55,571,281	27%
2022	53,027,858	29%
2023	50,344,879	31%
2024	47,533,745	33%

5-Year Payout Ratio





Expendable Resources to Debt

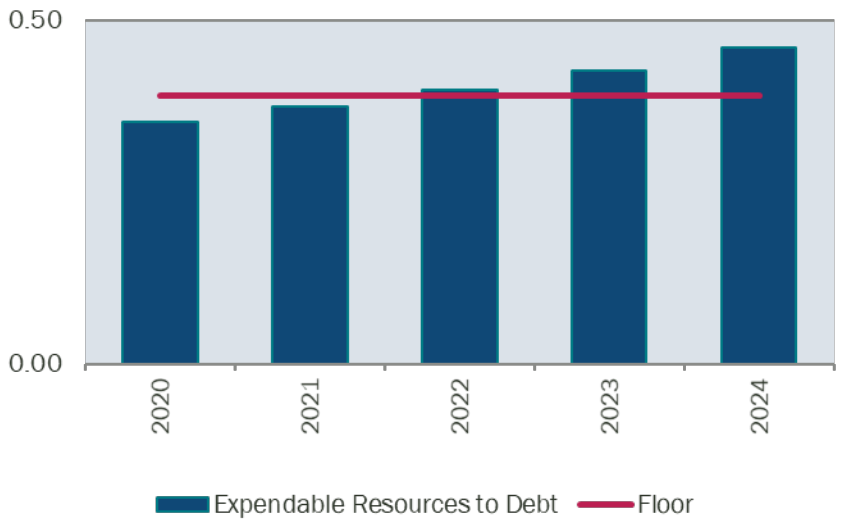
- **What does it measure?** The number of times UNCP's liquid and expendable net assets covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Assets and (2) Restricted Expendable Net Assets divided by aggregate debt

- Floor Ratio: Not less than 0.39x
- Projected 2020 Ratio: 0.35x
- Lowest Study Period Ratio: 0.35x (2020)

Expendable Resources to Debt

1	2	3	4	5	6	7
Expendable Resources to Debt						
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	20,438,591	1.70%	53,721,168	4,400,000	0.38	0.35
2021	20,786,047	1.70%	51,261,835	4,309,447	0.41	0.37
2022	21,139,410	1.70%	48,811,799	4,216,059	0.43	0.40
2023	21,498,780	1.70%	46,225,131	4,119,748	0.47	0.43
2024	21,864,259	1.70%	43,513,323	4,020,423	0.50	0.46

Expendable Resources to Debt



Debt Service to Operating Expenses

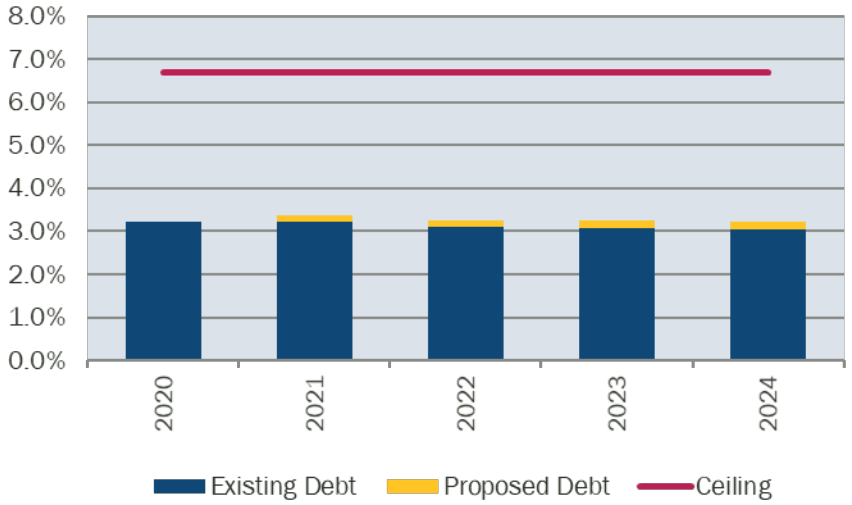
- **What does it measure?** UNCP's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

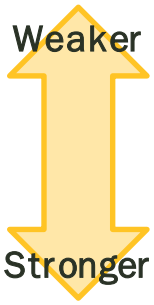
- Policy Ratio: Not to exceed 6.70%
- Projected 2020 Ratio: 3.22%
- Highest Study Period Ratio: 3.38% (2021)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	136,377,111	1.70%	4,397,204	-	3.22%	n/a	3.22%
2021	138,833,242	1.70%	4,465,157	228,273	3.22%	0.16%	3.38%
2022	141,188,231	1.70%	4,373,805	228,273	3.10%	0.16%	3.26%
2023	143,583,215	1.70%	4,424,737	228,273	3.08%	0.16%	3.24%
2024	146,018,872	1.70%	4,459,115	228,273	3.05%	0.16%	3.21%

Debt Service to Operating Expenses





5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, UNCP's debt capacity is based on the amount of debt UNCP could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, UNCP's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, UNCP's current estimated debt capacity is **$13,311,643.** After taking into account any legislatively approved projects detailed in **Section 3** above, if UNCP issued no additional debt until the last year of the Study Period, then UNCP's debt capacity for 2024 is projected to increase to **$28,881,771.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	1.63	2.00	13,311,643
2021	1.53	2.00	17,075,887
2022	1.44	2.00	20,854,312
2023	1.34	2.00	24,793,288
2024	1.24	2.00	28,881,771

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of UNCP's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" does not necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- **If UNCP were to use all of its calculated debt capacity during the Study Period, UNCP's credit ratings may face significant downward pressure**.
- Projecting the exact amount UNCP could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **Use of Multiple Factors**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.
  - **The State's Impact**

- In assessing each institution's credit rating, rating agencies also consider the State's credit rating and demographic trends, the health of its pension system, the level of support it has historically provided to the institution, and any legislation or policies affecting campus operations.
- Historically, each institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
- If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.

- **Factor Interdependence**
  - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
  - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
  - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
  - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

UNCP's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 2019A	Student Housing Revenue Bonds	6,636,086	6/1/2031	Courtyard Project	2001A	Housing Lease Revenues
Series 2019B	Student Housing Revenue Bonds	12,613,363	6/1/2035	Courtyard Project Phase II		Housing Lease Revenues
Series 2006B	UNC System Pool Revenue Bonds	290,000	10/1/2022	Dining System		Auxiliary Revenues
				Recreational Facilities		Auxiliary Revenues
				University Center Expansion		Auxiliary Revenues
Series 2008A	UNC System Pool Revenue Bonds	1,495,000	10/1/2033	Athletic Fieldhouse		Auxiliary Revenues
Series 2010B	Limited Obligation Bonds	17,505,000	3/1/2042	Cypress Hall		Housing Lease Revenues
Series 2015	Promissory Note (PNC Student Health Building)	3,400,000	4/1/2025	Student Health Services Building Auxiliary Services Building		Auxiliary Revenues
Series 2017	Refunding Limited Obligation Bond	14,095,000	3/1/2036	University Village Apartments	2004	Housing Lease Revenues
				Oak Hall	2006	Housing Lease Revenues
Total		56,034,449				

Approved by the UNC Board of Governors on May 20, 2020

7. Credit Profile

The following page provides a snapshot of UNCP's current credit ratings, along with (1) a summary of various credit factors identified in UNCP's most recent rating report and (2) recommendations for maintaining and improving UNCP's credit ratings in the future.

Credit Profile of the University – (General Revenue)

Overview

- Standard and Poor's maintains an A- issuer credit rating for UNCP. The outlook is stable.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-

Non Investment Grade

Key Information Noted in Reports

Credit Strengths

- Historically strong, albeit recently reduced, state operating and capital support from North Carolina
- Average maximum annual debt service (MADS) burden of 4.1% compared to fiscal 2013 operating expenses with limited additional debt plans

Credit Challenges

- Modest demand profile with historical enrollment fluctuations -- Enrollment, however, has stabilized recently
- Adequate financial resources for the rating category with adjusted fiscal 2013 unrestricted net assets equal to approximately 13% of operating expenses and 31% of outstanding debt
- Operating performance that is generally negative on a full-accrual basis, albeit positive on a cash basis.

Recommendations & Observations

- Continue to develop and implement strategies and policies to meet UNCP's unique challenges, including strategies to stabilize and improve enrollment and revenue.

8. Peer Comparison

Moody's Key Credit Ratios	University of North Carolina Pembroke	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2019	University of North Alabama	Pittsburgh State University	Northwest Missouri State University	Morehead State University	
Most Senior Rating	A3*	A1	A2	A3	A2	A3
Total Debt ($, in millions)	62	72	57	62	92	34
Total Cash & Investments ($, in millions)	78	94	124	108	76	52
Operating Revenue ($, in millions)	83	109	111	119	132	58
Operating Expenses ($, in millions)	128	104	99	108	134	55
Market Performance Ratios						
Annual Change in Operating Revenue (%)	-6.4%	3.6%	11.5%	2.9%	-0.9%	-2.4%
Operating Ratios						
Operating Cash Flow Margin (%)	23.9%	11.5%	20.1%	22.1%	-0.9%	11.0%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	0.6	0.9	1.3	1.0	0.6	0.7
Total Debt to Operating Expenses (x)	0.5	0.7	0.6	0.6	0.7	0.6
Monthly Days Cash on Hand (x)	50	193	130	263	62	136
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	1.3	1.3	2.2	1.8	0.8	1.5
Debt Service to Operating Expenses (%)	12.5%	4.6%	6.0%	6.5%	7.8%	5.1%
Total Debt-to-Cash Flow (x)	2.2	5.8	2.6	2.4	7.0	4.6

Debt Management Policies

UNCP's current debt policy is included in the following pages.

POL 07.35.01
Debt Management Policy

Authority: Board of Trustees

History:
- First Issued: 2017

Related Policies:

Additional References:
- NCGS §116D-55 - Managing Debt Capacity
- NCGS §116D-56 - Debt affordability study required

Contact Information: Vice Chancellor for Finance and Administration, 910-775-6209

1. INTRODUCTION

1.1 The University of North Carolina at Pembroke ("UNCP") views its debt capacity as a limited resource that should be used, when appropriate, to help fund the capital investments necessary for the realization of UNCP's mission and, consequently, the successful implementation of UNCP's strategic vision to challenge students to embrace difference and adapt to change, think critically, communicate effectively, and become responsible citizens. UNCP recognizes the important role that debt-related strategies may play as it makes the necessary investments in its infrastructure in order to become and remain the destination institution for dedicated students seeking challenging academic programs, engaged faculty and a vibrant campus culture.

1.2 This Policy has been developed to assist UNCP's efforts to manage its debt on a long-term, portfolio basis and in a manner consistent with UNCP's stated policies, objectives and core values. Like other limited resources, UNCP's debt capacity should be used and allocated strategically and equitably.

1.3 Specifically, the objective of this Policy is to provide a framework that will enable UNCP's Board of Trustees (the "Board") and finance staff to:

1.3.a. Identify and prioritize projects eligible for debt financing;

1.3.b. Limit and manage risk within UNCP's debt portfolio;

1.3.c. Establish debt management guidelines and quantitative parameters for evaluating UNCP's financial health, debt affordability and debt capacity;

1.3.d. Manage and protect UNCP's credit profile in order to maintain UNCP's credit rating at a strategically optimized level and maintain access to the capital markets; and

1.3.e. Ensure UNCP remains in compliance with all of its post-issuance obligations and requirements.

1.4 This Policy is intended solely for UNCP's internal planning purposes. The Vice Chancellor for Finance and Administration will review this Policy annually and, if necessary, recommend changes to ensure that it remains consistent with University's strategic objectives and the evolving demands and accepted practices of the public higher education marketplace. Proposed changes to this Policy are subject to the Board's approval. Attaining or maintaining a specific credit rating is not an objective of this Policy.

2. AUTHORIZATION AND OVERSIGHT

2.1 UNCP's Vice Chancellor for Finance and Administration is responsible for the day-to-day management of UNCP's financial affairs in accordance with the terms of this Policy and for all of UNCP's debt financing activities. Each University financing will conform to all applicable State and Federal laws.

2.2 The Board will consider for approval each proposed financing in accordance with the requirements of any applicable State law.

3. PROCESS FOR IDENTIFYING AND PRIORITIZING CAPITAL PROJECTS REQUIRING DEBT

3.1 Only projects that directly or indirectly relate to the mission and vision of UNCP will be considered for debt financing.

3.1.a. Self-Liquidating Projects – A project that has a related revenue stream (self-liquidating project) will receive priority consideration. Each self-liquidating project financing must be supported by an achievable plan of finance that provides, or identifies, sources of funds, sufficient to (1) service the debt associated with the project, (2) pay for any related infrastructure improvements, (3) cover any new or increased operating costs and (4) fund appropriate reserves for anticipated replacement and renovation costs.

3.1.b. Energy Conservation Projects – Each energy conservation project financing must provide annual savings sufficient to service the applicable debt and all related monitoring costs.

3.1.c. Other Projects – Other projects funded through budgetary savings, gifts and grants will be considered on a case-by-case basis. Any projects that will require gift financing or include a gift financing component must be jointly approved by the Vice Chancellor for Finance and Administration and the Vice Chancellor for Advancement before any project-restricted donations are solicited. The fundraising goal for any project to be financed primarily with donations should also include, when feasible, an appropriately-sized endowment for deferred maintenance and other ancillary ownership costs. In all cases, institutional strategy, and not donor capacity, must drive the decision to pursue any proposed project.

4. BENCHMARKS AND DEBT RATIOS

4.1 Overview

4.1.1 When evaluating its current financial health and any proposed plan of finance, UNCP takes into account both its debt affordability and its debt capacity. Debt affordability focuses on UNCP's cash flows and measures UNCP's ability to service its debt through its operating budget and identified revenue streams. Debt capacity, on the other hand, focuses on the relationship between UNCP's net assets and its total debt outstanding.

4.1.2 Debt capacity and affordability are impacted by a number of factors, including UNCP's enrollment trends, reserve levels, operating performance, ability to generate additional revenues to support debt service, competing capital improvement or programmatic needs, and general market conditions. Because of the number of potential variables, UNCP's debt capacity cannot be calculated based on any single ratio or even a small handful of ratios.

4.1.3 UNCP understands, however, that it is important to consider and monitor objective metrics when evaluating UNCP's financial health and its ability to incur additional debt. To that end, UNCP has identified three key financial ratios that it will use to assess its ability to absorb additional debt based on its current and projected financial condition:

4.1.3.a. Debt to Obligated Resources

4.1.3.b. Expendable Resources to Debt

4.1.3.c. Debt Service to Operating Expenses

4.1.4 Note that the selected financial ratios are also monitored as part of the debt capacity study for The University of North Carolina delivered each year under Article 5 of Chapter 116D of the North Carolina General Statutes (the "UNC Debt Capacity Study"), which UNCP believes will promote clarity and consistency in UNCP's debt management and planning efforts.

4.1.5 UNCP has established for each ratio a floor or ceiling target, as the case may be, with the expectation that UNCP will operate within the parameters of those ratios most of the time. To the extent possible, the policy ratios established from time to time in this Policy should align with the ratios used in the report UNCP submits each year as part of the UNC Debt Capacity Study. The policy ratios have been established to help preserve UNCP's financial health and operating flexibility and to ensure UNCP is able to access the market to address capital needs or to take advantage of potential refinancing opportunities.

4.1.6 UNCP recognizes that the policy ratios, while helpful, have limitations and should not be viewed in isolation of UNCP's strategic plan or other planning tools. In accordance with the recommendations set forth in the initial UNC Debt Capacity Study delivered April 1, 2016, UNCP has developed as part of this Policy specific criteria for evaluating and, if warranted, approving critical infrastructure projects even when UNCP has limited debt capacity as calculated by the UNC Debt Capacity Study or the benchmark ratios in this Policy. In such instances, the Board may approve the issuance of debt with respect to a proposed project based on one or more of the following findings:

4.1.6.a. The proposed project would generate additional revenues (including, if applicable, dedicated student fees or grants) sufficient to support the financing, which revenues are not currently captured in the benchmark ratios.

4.1.6.b. The proposed project would be financed entirely with private donations based on pledges already in hand.

4.1.6.c. The proposed project is essential to the implementation of one of the Board's strategic priorities.

4.1.6.d. The proposed project addresses life and safety issues or addresses other critical infrastructure needs.

4.1.6.e. Foregoing or delaying the proposed project would result in significant additional costs to UNCP or would negatively impact UNCP's credit rating.

At no point, however, should UNCP intentionally operate outside an established policy ratio without conscious and explicit planning.

4.2 Ratio One – Debt to Obligated Resources

4.2.1 The ratio, which is based on the legal structure proscribed by the General Revenue Bond Statutes, provides a general indication of UNCP's ability to absorb debt on its balance sheet and is the primary ratio used to calculate UNCP's "debt capacity" under the methodology used in the UNC Debt Capacity Study

4.2.2 Policy Ratio: Not to exceed 2.00x (UNC Debt Capacity Study Target Ratio = 1.50x)

4.3 Ratio Two – Expendable Resources to Debt

4.3.1 The ratio, which is widely tracked by rating agencies and other capital market participants, is a basic measure of financial health and assesses UNCP's ability to settle its debt obligations using only its available net assets as of a particular date

4.3.2 Policy Ratio: Not less than 0.39x

4.4 Ratio Three – Debt Service to Operating Expenses

4.4.1 The ratio, which is widely tracked by rating agencies and other capital market participants, evaluates UNCP's relative cost of borrowing to its overall expenditures and provides a measure of UNCP's budgetary flexibility

4.4.2 Policy Ratio: Not to exceed 6.70%

4.5 Reporting

4.5.1 The Vice Chancellor for Finance and Administration will review each ratio in connection with the delivery of the University's audited financials and will provide an annual report to the

Board detailing (1) the calculation of each ratio for that fiscal year and (2) an explanation for any ratio that falls outside the University's stated policy ratio, along with (a) any applicable recommendations, strategies and an expected timeframe for aligning such ratio with the University's stated policy or (b) the rationale for any recommended changes to any such stated policy ratio going forward (including any revisions necessitated by changes in accounting standards or rating agency methodologies).

5. DEBT PORTFOLIO MANAGEMENT AND TRANSACTION STRUCTURE CONSIDERATIONS

5.1 Generally

5.1.1 Numerous types of financing structures and funding sources are available, each with specific benefits, risks, and costs. Potential funding sources and structures will be reviewed and considered by the Vice Chancellor for Finance and Administration within the context of this Policy and the overall portfolio to ensure that any financial product or structure is consistent with UNCP's stated objectives. As part of effective debt management, UNCP must also consider its investment and cash management strategies, which influence the desired structure of the debt portfolio.

5.2 Method of Sale

5.2.1 UNCP will consider various methods of sale on a transaction-by-transaction basis to determine which method of sale (i.e., competitive, negotiated or private placement) best serves UNCP's strategic plan and financing objectives. In making that determination, UNCP will consider, among other factors: (1) the size and complexity of the issue, (2) the current interest rate environment and other market factors (such as bank and investor appetite) that might affect UNCP's cost of funds, and (3) possible risks associated with each method of sale (e.g., rollover risk associated with a financing that is privately placed with a bank for a committed term that is less than the term of the financing).

5.3 Tax Treatment

5.3.1 When feasible and appropriate for the particular project, the use of tax-exempt debt is generally preferable to taxable debt. Issuing taxable debt may reduce UNCP's overall debt affordability due to higher rates but may be appropriate for projects that do not qualify for tax-exemption, or that may require interim funding. For example, taxable debt may be justified if it sufficiently mitigates UNCP's ongoing administrative and compliance risks. When used, taxable debt should be structured to provide maximum repayment flexibility and rapid principal amortization.

5.4 Structure and Maturity

5.4.1 To the extent practicable, UNCP should structure its debt to provide for level annual payments of debt service, though UNCP may elect alternative structures when the Vice Chancellor for Finance and Administration determines it to be in UNCP's best interest. In addition, when financing projects that are expected to be self-supporting (such as a revenue-

producing facility or a facility to be funded entirely through a dedicated fundraising campaign), the debt service may be structured to match future anticipated receipts.

5.4.2 UNCP will use maturity structures that correspond with the life of the facilities financed, not to exceed 30 years. Equipment should be financed for a period not to exceed 120% of its useful life. Such determinations may be made on a blended basis, taking into account all assets financed as part of a single debt offering. As market dynamics change, maturity structures should be reevaluated. Call features should be structured to provide the highest degree of flexibility relative to cost.

5.5 Variable Rate Debt

5.5.1 UNCP recognizes that a degree of exposure to variable interest rates within UNCP's debt portfolio may be desirable in order to (1) take advantage of repayment or restructuring flexibility, (2) benefit from historically lower average interest costs and (3) provide a "match" between debt service requirements and the projected cash flows from UNCP's assets. UNCP's debt portfolio should be managed to ensure that no more than 20% of UNCP's total debt bears interest at an unhedged variable rate.

5.5.2 UNCP's finance staff will monitor overall interest rate exposure and will analyze and quantify potential risks, including interest rate, liquidity and rollover risks. UNCP may manage the liquidity risk of variable rate debt either through its own working capital/investment portfolio, the type of instrument used, or by using third party sources of liquidity. UNCP may manage interest rate risk in its portfolio through specific budget and central bank management strategies or through the use of derivative instruments.

5.6 Public-Private Partnerships (P3)

5.6.1 To address UNCP's anticipated capital needs as efficiently and prudently as possible, UNCP may choose to explore and consider opportunities for alternative and non-traditional transaction structures (collectively, "P3 Arrangements").

5.6.2 Due to the higher perceived risk and increased complexity of P3 Arrangements, and because the cash flows for the project must satisfy the private partner's expected risk-adjusted rate of return, the financing and initial transaction costs for projects acquired through P3 Arrangements are generally higher than projects financed with proceeds of traditional debt instruments. P3 Arrangements should therefore be pursued only when UNCP has determined that (1) a traditional financing alternative is not feasible, (2) a P3 Arrangement will likely produce construction or overall operating results that are superior, faster or more efficient than a traditional delivery model or (3) a P3 Arrangement serves one of the Board's broader strategic objectives (e.g., a decision that operating a particular auxiliary function is no longer consistent with UNCP's core mission).

5.6.3 Absent a compelling strategic reason to the contrary, P3 Arrangements should not be considered if the Vice Chancellor for Finance and Administration determines, in consultation with UNCP's advisors, that the P3 Arrangement will be viewed as "on-credit" (i.e., treated as University debt) by UNCP's auditors or outside rating agencies. When evaluating whether the P3 Arrangement should be viewed as "on-credit," rating agencies consider UNCP's economic

interest in the project and the level of control it exerts over the project. Further, rating agencies will generally treat a P3 Arrangement as University debt if the project is located on UNCP's campus or if the facility is to be used for an essential University function. For this reason, any P3 Arrangement for a university-related facility to be located on land owned by the State, UNCP or a UNCP affiliate must be approved in advance by the Vice Chancellor for Finance and Administration.

5.7 Refunding Considerations

5.7.1 UNCP will actively monitor its outstanding debt portfolio for refunding or restructuring opportunities. Absent a compelling economic or strategic reason to the contrary, UNCP should evaluate opportunities to issue bonds for the purpose of refunding existing debt obligations of UNCP ("Refunding Bonds") using the following general guidelines:

5.7.1.a. The life of the Refunding Bonds should not exceed the remaining life of the bonds being refunded.

5.7.1.b. Refunding Bonds issued to achieve debt service savings should have a target savings level measured on a present net value basis of at least 3% of the par amount refunded.

5.7.1.c. Refunding Bonds that do not achieve debt service savings may be issued to restructure debt or provisions of bond documents if such refunding serves a compelling interest.

5.7.1.d. Refunding Bonds may also be issued to relieve UNCP of certain limitations, covenants, payment obligations or reserve requirements that reduce operational flexibility.

6. DERIVATIVE PRODUCTS

6.1 UNCP recognizes that derivative products may provide for more flexible management of the debt portfolio. In certain circumstances, interest rate swaps and other derivatives permit UNCP to adjust its mix of fixed- and variable-rate debt and manage its interest rate exposures. Derivatives may also be an effective way to manage liquidity risks. UNCP will use derivatives only to manage and mitigate risk; UNCP will not use derivatives to create leverage or engage in speculative transactions.

6.2 As with underlying debt, UNCP's finance staff will evaluate any derivative product comprehensively, taking into account its potential costs, benefits and risks, including, without limitation, any tax risk, interest rate risk, liquidity risk, credit risk, basis risk, rollover risk, termination risk, counterparty risk, and amortization risk. Before entering into any derivative product, the Vice Chancellor for Finance and Administration must (1) conclude, based on the advice of a reputable swap advisor, that the terms of any swap transaction are fair and reasonable under current market conditions and (2) ensure that UNCP's finance staff has a clear understanding of the proposed transaction's costs, cash flow impact and reporting treatment.

6.3 UNCP will use derivatives only when the Vice Chancellor for Finance and Administration determines, based on the foregoing analysis, that the instrument provides the most effective method for accomplishing UNCP's strategic objectives without imposing inappropriate risks on

UNCP.

7. DEFINITIONS

7.1 Debt to Obligated Resources - UNCP's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt under the General Revenue Bond Statutes. It is calculated by taking Aggregate debt and dividing it by obligated resources[1]

7.2 Expendable Resources to Debt - The number of times UNCP's liquid and expendable net assets covers its aggregate debt. It is calculated as follows: The sum of (1) Adjusted Unrestricted Net Assets and (2) Restricted Expendable Net Assets divided by aggregate debt

7.3 Expendable Resources to Debt - UNCP's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.

1 Available Funds - a concept commonly used to capture each UNC campus's obligated resources in its loan and bond documentation, has been used as a proxy for obligated resources. The two concepts are generally identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of UNCP's obligated resources.

May 19, 2020

The University of North Carolina System Debt Capacity Study – Fiscal Year 2019

University of North Carolina Wilmington

Institution Report

University of North Carolina Wilmington

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), University of North Carolina Wilmington ("*UNCW*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. UNCW has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, UNCW, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—UNCW has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, UNCW's debt capacity reflects the amount of debt UNCW could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that UNCW intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- UNCW's current debt profile, including project descriptions financed with, and the sources of repayment for, UNCW's outstanding debt;
- UNCW's current credit profile, along with recommendations for maintaining or improving UNCW's credit rating; and
- A copy of any UNCW debt management policy currently in effect.

Overview of UNCW

For the fall 2018 semester, UNCW had a headcount student population of approximately 16,747, including approximately 14,452 undergraduate students and 2,295 graduate and doctoral students. UNCW employs approximately 1,052 full-time, part-time and temporary instructional faculty.

Over the past 5 years, UNCW's enrollment has increased approximately 15%. UNCW's average age of plant (16.45 years), which is higher than the median ratio for all institutions (14.53 years). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs.

UNCW anticipates incurring approximately $14 million in additional debt during the Study Period, as summarized in **Section 3** below.

UNCW has made no changes to the financial model's standard growth assumptions, which are based on the Consumer Price Index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Outstanding debt service is based on UNCW's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to UNCW by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt UNCW expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below overstate UNCW's current debt burden.

Obligated Resources

1	2	3	4	5	6
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	171,253,177	15,441,922	-		186,695,099
2016	174,716,226	11,657,030	-	-0.17%	186,373,256
2017	190,889,259	12,189,121	-	8.96%	203,078,380
2018	(135,795,746)	14,057,082	330,232,779	2.67%	208,494,115
2019	(126,996,436)	15,000,984	314,686,525	-2.78%	202,691,073
2020	206,136,821	-	-	1.70%	206,136,821
2021	209,641,147	-	-	1.70%	209,641,147
2022	213,205,047	-	-	1.70%	213,205,047
2023	216,829,532	-	-	1.70%	216,829,532
2024	220,515,635	-	-	1.70%	220,515,635

Operating Expenses

Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	277,216,966	3,213,518	-		280,430,484
2016	287,627,942	3,789,853	-	3.92%	291,417,795
2017	300,800,609	(524,109)	-	3.04%	300,276,500
2018	323,721,787	(1,319,913)	2,325,505	8.14%	324,727,379
2019	331,093,641	(939,574)	14,670,617	6.19%	344,824,684
2020	350,686,704	-	-	1.70%	350,686,704
2021	356,648,378	-	-	1.70%	356,648,378
2022	362,711,400	-	-	1.70%	362,711,400
2023	368,877,494	-	-	1.70%	368,877,494
2024	375,148,411	-	-	1.70%	375,148,411

Outstanding Debt

7	8	9	10	11
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	6,980,651	8,089,797	15,070,448	201,222,355
2021	9,181,812	8,171,243	17,353,055	192,040,542
2022	9,958,751	8,137,979	18,096,730	182,081,791
2023	10,213,096	7,741,834	17,954,930	171,868,695
2024	9,615,594	7,397,494	17,013,088	162,253,101
2025	10,005,423	6,984,647	16,990,070	152,247,678
2026	10,390,678	6,578,007	16,968,685	141,857,000
2027	9,999,000	6,188,697	16,187,697	131,858,000
2028	10,427,000	5,800,321	16,227,321	121,431,000
2029	8,870,000	5,337,652	14,207,652	112,561,000
2030	9,278,000	4,911,717	14,189,717	103,283,000
2031	9,614,000	4,520,600	14,134,600	93,669,000
2032	10,013,000	4,079,779	14,092,779	83,656,000
2033	10,417,000	3,619,531	14,036,531	73,239,000
2034	10,854,000	3,139,915	13,993,915	62,385,000
2035	10,745,000	2,621,437	13,366,437	51,640,000
2036	11,175,000	2,125,477	13,300,477	40,465,000
2037	9,690,000	1,607,991	11,297,991	30,775,000
2038	7,315,000	1,169,352	8,484,352	23,460,000
2039	4,145,000	850,170	4,995,170	19,315,000
2040	4,325,000	612,110	4,937,110	14,990,000
2041	1,475,000	449,700	1,924,700	13,515,000
2042	1,520,000	405,450	1,925,450	11,995,000
2043	1,565,000	359,850	1,924,850	10,430,000
2044	1,615,000	312,900	1,927,900	8,815,000
2045	1,660,000	264,450	1,924,450	7,155,000
2046	1,710,000	214,650	1,924,650	5,445,000
2047	1,760,000	163,350	1,923,350	3,685,000
2048	1,815,000	110,550	1,925,550	1,870,000
2049	1,870,000	56,100	1,926,100	-

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Unrestricted Net Position plus Foundation Temporarily Restricted Net Position minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projected period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	84,318,325	34,838,427	874,725	2,320,336	3,807,417		15,441,922	133,986,318
2016	97,181,998	32,356,514	786,722	2,233,892	3,207,437	5.24%	11,657,030	141,008,719
2017	103,453,532	43,703,885	900,714	2,435,831	6,844,438	10.52%	12,189,121	155,838,645
2018	(219,002,041)	45,689,162	989,910	2,416,065	3,153,259	9.32%	343,416,680	170,356,517
2019	(211,566,310)	123,466,571	1,117,718	2,351,930	68,548,910	3.61%	329,687,509	176,508,508
2020	120,129,259	125,565,503	1,136,719	2,391,913	69,714,241	1.70%	-	179,509,153
2021	122,171,457	127,700,116	1,156,043	2,432,575	70,899,384	1.70%	-	182,560,808
2022	124,248,372	129,871,018	1,175,696	2,473,929	72,104,673	1.70%	-	185,664,342
2023	126,360,594	132,078,826	1,195,683	2,515,986	73,330,453	1.70%	-	188,820,636
2024	128,508,724	134,324,166	1,216,010	2,558,758	74,577,070	1.70%	-	192,030,587

3. Proposed Debt Financings

The table below summarizes any legislatively approved projects that NCSU expects to finance during the Study Period. Using the assumptions outlined in the table below, the model has developed a tailored, but conservative, debt service schedule for each proposed financing and incorporated each pro forma debt service schedule into its calculations of the financial ratios as detailed in **Section 4** below.

UNCW Proposed Debt Financings

Year	Use of Funds	Borrowing Amount	Term	Source of Repayment
2020	New Dining Hall	14,000,000	30	Dining Receipts
Total		14,000,000		

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** UNCW's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

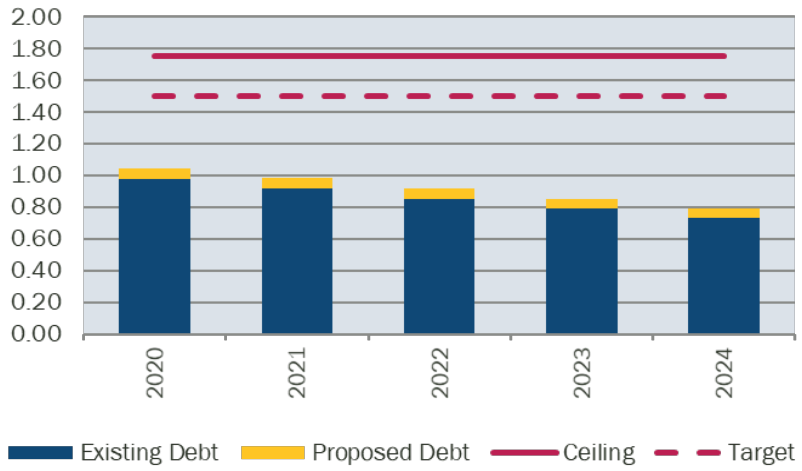
- Target Ratio: 1.50
- Ceiling Ratio: Not to exceed 1.75
- Projected 2020 Ratio: 1.04
- Highest Study Period Ratio: 1.04 (2020)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	206,136,821	1.70%	201,222,355	14,000,000	0.98	0.07	1.04
2021	209,641,147	1.70%	192,040,542	13,705,873	0.92	0.07	0.98
2022	213,205,047	1.70%	182,081,791	13,402,914	0.85	0.06	0.92
2023	216,829,532	1.70%	171,868,695	13,090,857	0.79	0.06	0.85
2024	220,515,635	1.70%	162,253,101	12,769,429	0.74	0.06	0.79

Debt to Obligated Resources



5-Year Payout Ratio Overview

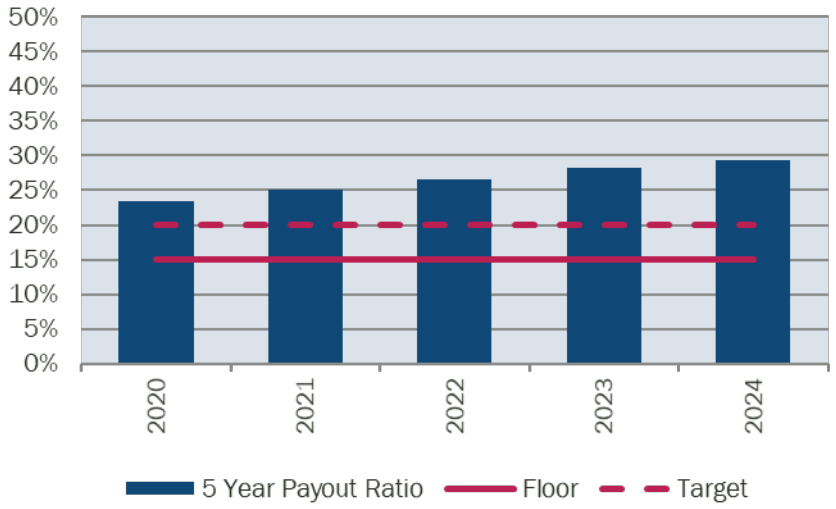
- **What does it measure?** The percentage of UNCW's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

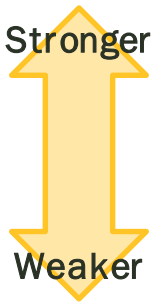
- Target Ratio: 20%
- Floor Ratio: Not less than 15%
- Projected 2020 Ratio: 23%
- Lowest Study Period Ratio: 23% (2020)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	215,222,355	23%
2021	205,746,416	25%
2022	195,484,706	27%
2023	184,959,552	28%
2024	175,022,530	29%

5-Year Payout Ratio





Expendable Resources to Debt

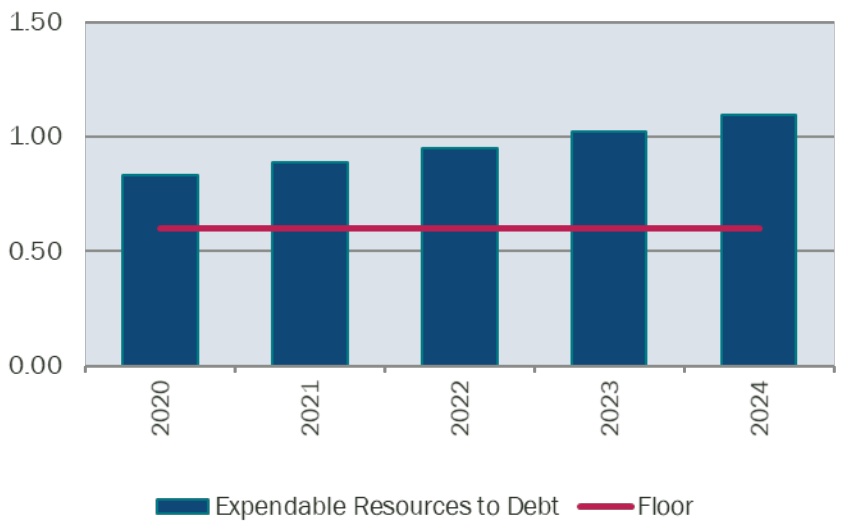
- **What does it measure?** The number of times UNCW's liquid and expendable Net Position cover its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

- Floor Ratio: Not less than 0.60x
- Projected 2020 Ratio: 0.83x
- Lowest Study Period Ratio: 0.83x (2020)

Expendable Resources to Debt

1	2	3	4	5	6	7
Expendable Resources to Debt						
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	179,509,153	1.70%	201,222,355	14,000,000	0.89	0.83
2021	182,560,808	1.70%	192,040,542	13,705,873	0.95	0.89
2022	185,664,342	1.70%	182,081,791	13,402,914	1.02	0.95
2023	188,820,636	1.70%	171,868,695	13,090,857	1.10	1.02
2024	192,030,587	1.70%	162,253,101	12,769,429	1.18	1.10

Expendable Resources to Debt



Debt Service to Operating Expenses

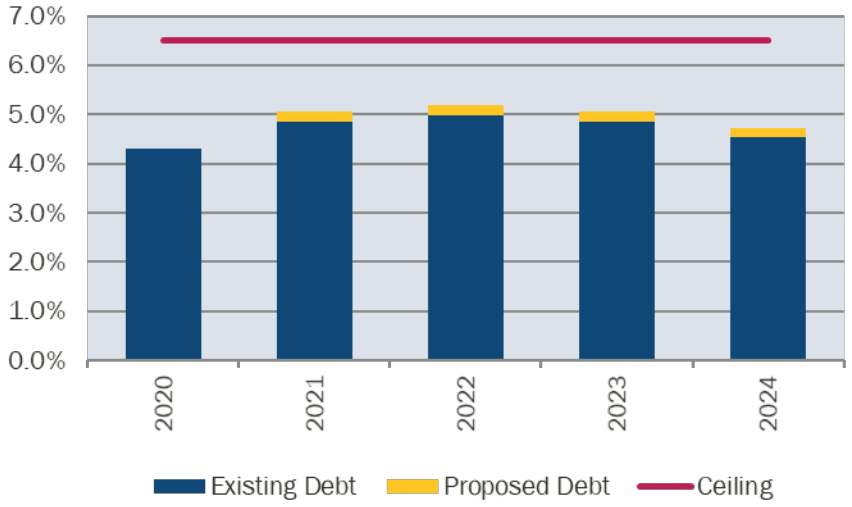
- **What does it measure?** UNCW's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

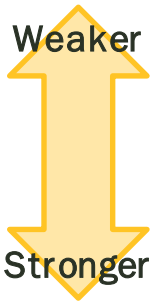
- Policy Ratio: Not to exceed 6.50%
- Projected 2020 Ratio: 4.30%
- Highest Study Period Ratio: 5.18% (2022)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	350,686,704	1.70%	15,070,448	-	4.30%	n/a	4.30%
2021	357,068,798	1.70%	17,353,055	714,547	4.86%	0.20%	5.06%
2022	363,122,987	1.70%	18,096,730	714,547	4.98%	0.20%	5.18%
2023	369,279,983	1.70%	17,954,930	714,547	4.86%	0.19%	5.06%
2024	375,541,530	1.70%	17,013,088	714,547	4.53%	0.19%	4.72%

Debt Service to Operating Expenses





5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, UNCW's debt capacity is based on the amount of debt UNCW could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, UNCW's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, UNCW's current estimated debt capacity is **$145,517,083.** After taking into account any legislatively approved projects detailed in **Section 3** above, if UNCW issued no additional debt until the last year of the Study Period, then UNCW's debt capacity for 2024 is projected to increase to **$210,879,831.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	1.04	1.75	145,517,083
2021	0.98	1.75	161,125,592
2022	0.92	1.75	177,624,126
2023	0.85	1.75	194,492,130
2024	0.79	1.75	210,879,831

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of UNCW's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" <u>does not</u> necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- **If UNCW were to use all of its calculated debt capacity during the Study Period, UNCW's credit ratings may face significant downward pressure**.
- Projecting the exact amount UNCW could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **<u>Use of Multiple Factors</u>**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.
  - **<u>The State's Impact</u>**

- In assessing each institution's credit rating, rating agencies also consider the State's credit rating and demographic trends, the health of its pension system, the level of support it has historically provided to the institution, and any legislation or policies affecting campus operations.
- Historically, each institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
- If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.

- **Factor Interdependence**
  - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
  - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
  - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
  - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

UNCW's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 2010	Taxable General Revenue Bonds (BABs)	12,655,000	1/1/2040	MARBIONC Facility		General Revenues
Series 2010C	UNC System Pool Revenue Bonds	15,055,000	10/1/2026	Student Recreation Center Student Dorms Student Union Student Recreation Center	2002A 2002A 2003A 2003A	Rec Center Debt Fee Housing Rents Union Debt Fee Rec Center Debt Fee
Series 2010D	UNC System Taxable Pool Revenue Bonds (BABs)	20,660,000	10/1/2039	Student Recreation Center		Rec Center Debt Fee
Series 2011	Schwartz & Wagner Renovation Projects	4,785,451	3/1/2026	Student Dorm Renovations Wagoner Dining Hall Renovation		Housing Rents Dining Revenues
Series 2012	General Revenue Refunding Bond	11,440,000	1/1/2028	Student Union	2003A	Union Debt Fee
Series 2015	Refunding Limited Obligation Bonds	54,700,000	6/1/2037	Seahawk Village Seahawk Landing	2005 COPs 2006 COPs	Net Revenues of Seahawk Projects, Dorm, Dining, and Parking Revenues
Series 2016	General Revenue Refunding Bond	9,701,000	10/1/2033	Student Union Parking Wagoner Dining Hall Student Dorms	2006A 2006A 2006A 2006A	Union Debt Fee Parking Fees Dining Revenues Housing Rents
Series 2016	Refunding Limited Obligation Bonds	57,235,000	6/1/2038	Seahawk Crossing Parking Deck	2008 COPs	Net Revenues of Seahawk Projects, Dorm, Dining, & Parking Revenues
Series 2019	Parking Deck	21,350,000	4/1/2049	Parking Deck		Parking Revenues
College Station Note	Note Payable	512,884	11/5/2022	Osher Life Long Learning Center		Dining Revenues
Modular Solutions Lease	Capital Lease	108,670	FY 2020	Youth Program Trailers and Admin Offices		General Revenues
Total		208,203,006				

*The 2015 and 2016 Limited Obligation Bonds are obligations of the UNCW Corporation, and the College Station note payable is an obligation of the UNCW Corporation II. Both corporations are associated entities of UNCW whose financials are blended into UNCW's statements.

Approved by the UNC Board of Governors on May 20, 2020

7. Credit Profile

The following page provides a snapshot of UNCW's current credit ratings, along with (1) a summary of various credit factors identified in UNCW's most recent rating report and (2) recommendations for maintaining and improving UNCW's credit ratings in the future.

Credit Profile of the University – (General Revenue)

Overview

- Moody's maintains UNCW's general revenue bonds to an Aa3 rating. The outlook is stable.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-
Non Investment Grade		

Key Information Noted in Reports

Credit Strengths

- Strong financial profile and favorable student demand with growing enrollment and student retention
- Strong financial support from Aaa-rated North Carolina for both operating and capital projects
- Revenue growth expected to be above 3% annually
- Effective financial management allowing the university to sustain operating cash flow margins above 12%

Credit Challenges

- Elevated leverage compared to Aa3-rated peers
- Modest fundraising and narrow student draw
- Limited pricing power due to cap on out-of-state student enrollment and state tuition setting authority

Recommendations & Observations

- Continue to develop initiatives to highlight and strengthen UNCW's distinctive market position.

Approved by the UNC Board of Governors on May 20, 2020

8. Peer Comparison

Moody's Key Credit Ratios	University of North Carolina Wilmington	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2019	Rowan University	University of Northern Iowa	Western Washington University	College of Charleston	
Most Senior Rating	Aa3	A2	A1	A1	A1	Aa3
Total Debt ($, in millions)	218	661	113	95	196	437
Total Cash & Investments ($, in millions)	285	420	299	206	276	735
Operating Revenue ($, in millions)	354	550	278	295	269	691
Operating Expenses ($, in millions)	329	535	272	310	260	641
Market Performance Ratios						
Annual Change in Operating Revenue (%)	5.9%	2.9%	2.0%	4.5%	3.5%	2.7%
Operating Ratios						
Operating Cash Flow Margin (%)	13.3%	2.9%	10.2%	5.1%	12.4%	12.1%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	0.9	0.8	1.1	0.7	1.1	1.0
Total Debt to Operating Expenses (x)	0.7	1.2	0.4	0.3	0.8	0.5
Monthly Days Cash on Hand (x)	156	184	171	119	103	156
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	1.3	0.6	2.6	2.2	1.4	1.6
Debt Service to Operating Expenses (%)	5.0%	9.5%	5.5%	2.7%	5.9%	4.5%
Total Debt-to-Cash Flow (x)	4.6	6.7	4.0	6.3	5.9	4.6

Approved by the UNC Board of Governors on May 20, 2020

Debt Management Policies

UNCW's current debt policy is attached.

University of North Carolina Wilmington
Debt Management Guidelines

1. Introduction

University of North Carolina Wilmington ("UNCW") views its debt capacity as a resource that should be used, when appropriate, to help fund the capital investments necessary to successfully implement UNCW's strategic plans and to preserve the operational flexibility and resources necessary to support UNCW's current and future programming. UNCW recognizes its important financial stewardship role to invest in campus infrastructure in order to meet anticipated demand. These Debt Management Guidelines ("Guidelines") have been developed as a framework to assist UNCW's efforts to manage its debt on a long-term, portfolio basis and in a manner consistent with UNCW's stated policies, objectives and core values.

These Guidelines are intended solely for UNCW's internal planning purposes. The Vice Chancellor for Business Affairs will revisit these Guidelines as needed and recommend changes to ensure they remain consistent with the University's strategic objectives and the evolving demands and accepted practices of the public higher education marketplace.

These Guidelines cover all forms of debt including long-term, short-term, fixed-rate, and variable-rate. They also cover other forms of financing including both on-balance sheet and off-balance sheet structures, such as leases, and other structured products used to fund capital projects.

The use of derivatives or public private partnerships is not covered under these Guidelines. If these options are considered, they will be managed under a separate guideline.

2. Authorization and Oversight

UNCW's Vice Chancellor for Business Affairs is responsible for the day-to-day management of UNCW's financial affairs and for all of UNCW's debt financing activities. All financing arrangements will comply with all applicable state and federal laws. The Board of Trustees approves applicable financing activities in compliance with state law.

3. Process for Identifying and Prioritizing Capital Projects Requiring Debt

Projects that directly or indirectly relate to the mission of UNCW will be considered for debt financing.

Self-Liquidating Projects – A project that has a related revenue stream (self-liquidating project) will receive priority consideration. Each self-liquidating project must be supported by an achievable plan of finance that provides, or identifies sources of funds, sufficient to (1) service the debt associated with the project, (2) pay for any related infrastructure improvements, (3) cover any new or increased operating costs and (4) fund appropriate reserves for anticipated replacement and renovation costs.

Energy Conservation Projects – Each energy conservation project financing must provide annual savings sufficient to service the applicable debt and all related monitoring costs.

Other Projects – Other projects funded through budgetary savings, gifts and grants will be considered on a case-by-case basis.

4. Target Debt Ratios

When evaluating its current financial health and any proposed plan of finance, UNCW takes into account both debt affordability and debt capacity. Debt affordability focuses on UNCW's cash flows and measures UNCW's ability to service debt through its operating budget and identified revenue streams. Debt capacity focuses on the relationship between UNCW's net assets and total debt outstanding.

Debt capacity and affordability are impacted by a number of factors, including UNCW's enrollment trends, reserve levels, operating performance, ability to generate additional revenues to support debt service, competing capital improvement or programmatic needs, and general market conditions. Because of the number of potential variables, UNCW's debt capacity cannot be calculated using any single ratio or even a small handful of ratios.

UNCW believes that it is important to consider and monitor objective metrics when evaluating UNCW's financial health and its ability to incur additional debt. To that end, UNCW will use three key financial ratios to assess its ability to absorb additional debt based on its current and projected financial condition:

(i) Debt to Obligated Resources *
(ii) Spendable Cash and Investments to Debt **
(iii) Debt Service to Operating Expenses *

* Monitored as part of the debt capacity study for The University of North Carolina delivered each year under Article 5 of Chapter 116D of the North Carolina General Statutes (the "UNC Debt Capacity Study").
** Considered relevant indicators of Leverage and Debt Affordability by Moody's Investor Service (Global Higher Education Rating Methodology, November 2015).

Target ratios have been established to help preserve UNCW's financial health and operating flexibility and to ensure UNCW is able to access the market to address capital needs and to take advantage of potential refinancing opportunities.

UNCW recognizes that the target ratios, while helpful, have limitations and should be viewed together with UNCW's strategic plan or other planning tools. UNCW has developed specific criteria for evaluating and approving critical infrastructure projects even if UNCW reaches its debt capacity as calculated by the UNC Debt Capacity Study or the Guidelines' target ratios. In such instances, it may be appropriate to issue debt with respect to a proposed project based on one or more of the following findings:

(i) The proposed project would generate additional revenues (including, if applicable, dedicated student fees, rents, or grants) sufficient to support the financing that are not currently captured in the benchmark ratios.
(ii) The proposed project is essential to the implementation of one of the University's strategic priorities.
(iii) The proposed project addresses life and safety issues or addresses other critical infrastructure needs.
(iv) Foregoing or delaying the proposed project would result in significant additional costs to UNCW or would negatively impact UNCW's credit rating.

The University will review each ratio by February 1st of each year and will provide a report to the Vice Chancellor for Business Affairs detailing (1) the calculation of each ratio for that fiscal year and (2) an explanation for any ratio that falls outside the University's stated target ratio, along with (a) any applicable recommendations, strategies and an expected timeframe for aligning with the Guidelines or (b) the rationale for any recommended

changes to any such stated target ratio going forward (including any revisions necessitated by changes in accounting standards or rating agency methodologies).

Ratio 1 – Debt to Obligated Resources

What does it measure? Aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt under the General Revenue Bond Statutes. Each UNC constituent institution is required to report this target ratio under the provisions of the Debt Study). This ratio is not used outside the state and is only included due to the Debt Study.

How is it calculated? Aggregate debt divided by obligated resources.
Obligated resources is defined as Available Funds plus an adjustment for non-cash expenses related to the implementation of GASB 68. Available funds is a concept commonly used to capture each UNC's campus's obligated resources in loan and bond documentation.

Target Ceiling Ratio: Not to exceed 1.75x

Ratio 2 – Spendable Cash and Investments to Debt

What does it measure? This leverage ratio highlights the ability of the university to repay debt from wealth that can be accessed over time for a specific purpose. It measures the number of times liquid and expendable resources cover aggregate debt

How is it calculated? Cash and investments (at the university and affiliated foundations) plus funds held in trust by others plus pledges receivable reported in permanently restricted net assets, less permanently restricted net assets, divided by operating expenses

Target Floor Ratio: Not less than 0.6x

Ratio 3 – Debt Service to Operating Expense

What does it measure? Debt service burden as a percentage of total expenses, which is used as the denominator because it is typically more stable than revenues

How is it calculated? Annual debt service divided by annual operating expenses

Target Ceiling Ratio: Not to exceed 6.5%

5. Debt Portfolio Management and Transaction Structure Considerations

Numerous types of financing structures and funding sources are available, each with specific benefits, risks, and costs. Potential funding sources and structures will be reviewed and considered by the Vice Chancellor for Business Affairs within the context of these Guidelines and the overall portfolio to ensure that any financial product or structure is consistent with UNCW's stated objectives. As part of effective debt management, UNCW must also consider its investment and cash management strategies, which influence the desired structure of the debt portfolio.

Method of Sale

UNCW will consider various methods of sale on a transaction-by-transaction basis to determine which method of sale (i.e., competitive, negotiated or private placement) best serves UNCW's strategic plan and financing objectives. In making that determination, UNCW will consider, among other factors: (1) the size and complexity of the issue, (2) the current interest rate environment and other market factors (such as bank and investor appetite) that might affect UNCW's cost of funds, and (3) possible risks associated with each method of sale (e.g., rollover risk associated with a financing that is privately placed with a bank for a committed term that is less than the term of the financing).

Tax Treatment

When feasible and appropriate for the particular project, the use of tax-exempt debt is generally preferable to taxable debt. Issuing taxable debt may reduce UNCW's overall debt affordability due to higher rates but may be appropriate for projects that do not qualify for tax-exemption, or that may require interim funding. For example, taxable debt may be justified if it sufficiently mitigates UNCW's ongoing administrative and compliance risks. When used, taxable debt should be structured to provide maximum repayment flexibility and rapid principal amortization.

Structure and Maturity

To the extent practicable, UNCW should structure its debt to provide for level annual payments of debt service, though UNCW may elect alternative structures when the Vice Chancellor for Business Affairs determines it to be in UNCW's best interest. In addition, when financing projects that are expected to be self-supporting (such as a revenue-producing facility or a facility to be funded entirely through a dedicated fundraising campaign), the debt service may be structured to match future anticipated receipts.

UNCW will use maturity structures that correspond with the life of the facilities financed, not to exceed 30 years. Such determinations may be made on a blended basis, taking into account all assets financed as part of a single debt offering. As market dynamics change, maturity structures should be reevaluated. Call features should be structured to provide the highest degree of flexibility relative to cost.

General Revenue Pledge

UNCW will utilize general revenue secured debt for all financing needs, unless there is compelling reason to structure specific revenue pledges independent of general revenue projects. The general revenue pledge provides a strong, flexible security which captures the strengths of auxiliary and student related revenues as well as research programs. In addition, general revenue debt does not subject the University to operating or financial covenants and coverage levels imposed by the market or external constituents.

Variable Rate Debt

While fixed rate debt is preferable, UNCW recognizes that a degree of exposure to variable interest rates within UNCW's debt portfolio may be desirable as part of a short-term bond anticipation note or in order to (1) take advantage of repayment or restructuring flexibility, (2) benefit from historically lower average interest costs or (3) provide a "match" between debt service requirements and the projected cash flows from UNCW's assets. UNCW's debt portfolio should be managed to ensure that no more than a minimum amount of UNCW's total long-term debt bears interest at an unhedged variable rate.

UNCW will monitor overall interest rate exposure. UNCW may manage the liquidity risk of variable rate debt either through its own working capital/investment portfolio, the type of instrument used, or by using third party sources of liquidity. UNCW may manage interest rate risk in its portfolio through specific budget and central bank management strategies or through the use of derivative instruments.

Refunding Considerations

UNCW will actively monitor its outstanding debt portfolio for refunding or restructuring opportunities. Absent a compelling economic or strategic reason to the contrary, UNCW should evaluate opportunities to issue bonds for the purpose of refunding existing debt obligations of UNCW ("Refunding Bonds") using the following general guidelines:

(i) The life of the Refunding Bonds should not exceed thirty years beyond the original issue date.
(ii) Refunding Bonds issued to achieve debt service savings should have a target savings level measured on a present net value basis of at least 2% of the par amount refunded.
(iii) Refunding Bonds that do not achieve debt service savings may be issued to restructure debt or provisions of bond documents if such refunding serves a compelling interest.
(iv) Refunding Bonds may also be issued to relieve UNCW of certain limitations, covenants, payment obligations or reserve requirements that reduce operational flexibility.

6. Post-Issuance Compliance Matters

UNCW will develop a separate guideline on post-issuance compliance matters.

May 19, 2020

The University of North Carolina System Debt Capacity Study – Fiscal Year 2019

University of North Carolina School of the Arts
Institution Report

University of North Carolina School of the Arts

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), University of North Carolina School of the Arts ("*UNCSA*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. UNCSA has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, UNCSA, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—UNCSA has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, UNCSA's debt capacity reflects the amount of debt UNCSA could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that UNCSA intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- UNCSA's current debt profile, including project descriptions financed with, and the sources of repayment for, UNCSA's outstanding debt;
- UNCSA's current credit profile, along with recommendations for maintaining or improving UNCSA's credit rating; and
- A copy of any UNCSA debt management policy currently in effect.

Overview of UNCSA

For the fall 2018 semester, UNCSA had a headcount student population of 1,292, including 250 High school students, 890 undergraduate students and 152 graduate students. During the 2018-19 academic year, UNCSA employed approximately 171 full-time, part-time and temporary instructional faculty.

Over the past 5 years, UNCSA's enrollment has increased approximately 9%. UNCSA's average age of plant (15.23 years) is slightly higher than the median ratio for all institutions (14.53 years). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs.

UNCSA plans to borrow $46M for the construction of a new residence hall. More information is available in Section 3.

UNCSA has made no changes to the financial model's standard growth assumptions, which are based on the Consumer Price Index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Outstanding debt service is based on UNCSA's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to UNCSA by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt UNCSA expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below overstate UNCSA's current debt burden.

1	2	3	4	5	6
		Obligated Resources			
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	20,123,677	3,184,245	-		23,307,922
2016	20,351,907	2,332,230	-	-2.68%	22,684,137
2017	23,761,927	2,409,474	-	15.37%	26,171,401
2018	(33,430,796)	2,930,772	59,599,375	11.19%	29,099,352
2019	(35,386,402)	3,314,017	60,033,470	-3.91%	27,961,085
2020	28,436,423	-	-	1.70%	28,436,423
2021	28,919,842	-	-	1.70%	28,919,842
2022	29,411,480	-	-	1.70%	29,411,480
2023	29,911,475	-	-	1.70%	29,911,475
2024	30,419,970	-	-	1.70%	30,419,970

7	8	9	10	11
		Outstanding Debt		
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	327,000	125,012	452,012	3,854,000
2021	336,000	115,235	451,235	3,518,000
2022	346,000	105,188	451,188	3,172,000
2023	357,000	94,843	451,843	2,815,000
2024	368,000	84,169	452,169	2,447,000
2025	378,000	73,165	451,165	2,069,000
2026	390,000	61,863	451,863	1,679,000
2027	401,000	50,202	451,202	1,278,000
2028	413,000	38,212	451,212	865,000
2029	426,000	25,864	451,864	439,000
2030	439,000	13,126	452,126	-
2031			-	-
2032			-	-
2033			-	-
2034			-	-
2035			-	-
2036			-	-
2037			-	-
2038			-	-
2039			-	-
2040			-	-
2041			-	-
2042			-	-
2043			-	-

Operating Expenses					
Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	58,920,287	669,042	-		59,589,329
2016	58,377,605	786,080	-	-0.71%	59,163,686
2017	63,101,303	(153,584)	-	6.40%	62,947,719
2018	65,810,839	(465,602)	(337,407)	3.27%	65,007,830
2019	66,603,544	(463,594)	1,799,307	4.51%	67,939,258
2020	69,094,225	-	-	1.70%	69,094,225
2021	70,268,827	-	-	1.70%	70,268,827
2022	71,463,397	-	-	1.70%	71,463,397
2023	72,678,275	-	-	1.70%	72,678,275
2024	73,913,805	-	-	1.70%	73,913,805

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Unrestricted Net Position plus Foundation Temporarily Restricted Net Position minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projected period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	12,224,133	9,018,787	566,484	11,781,428	1,217,161		3,184,245	35,557,916
2016	14,627,902	9,743,032	565,028	15,656,053	3,522,147	10.81%	2,332,230	39,402,099
2017	16,725,073	14,911,627	707,985	15,502,396	7,129,343	9.45%	2,409,474	43,127,212
2018	(42,584,245)	16,690,460	817,931	21,595,377	6,293,229	21.92%	62,356,104	52,582,398
2019	(42,313,240)	20,871,200	1,890,984	247,450	8,620,808	-37.46%	60,809,461	32,885,047
2020	18,810,657	21,226,010	1,923,131	251,657	8,767,362	1.70%	-	33,444,093
2021	19,130,438	21,586,852	1,955,824	255,935	8,916,407	1.70%	-	34,012,642
2022	19,455,656	21,953,829	1,989,073	260,286	9,067,986	1.70%	-	34,590,857
2023	19,786,402	22,327,044	2,022,887	264,711	9,222,142	1.70%	-	35,178,902
2024	20,122,771	22,706,604	2,057,276	269,211	9,378,918	1.70%	-	35,776,943

3. Proposed Debt Financings

The table below summarizes any legislatively approved projects that UNCSA expects to finance during the Study Period. Using the assumptions outlined in the table below, the model has developed a tailored, but conservative, debt service schedule for each proposed financing and incorporated each pro forma debt service schedule into its calculations of the financial ratios as detailed in **Section 4** of this Institution Report.

UNCSA Proposed Debt Financings

Year	Use of Funds	Borrowing Amount	Term	Source of Repayment
2020	New Residence Hall	46,000,000	30	Housing Receipts
Total		46,000,000		

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** UNCSA's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

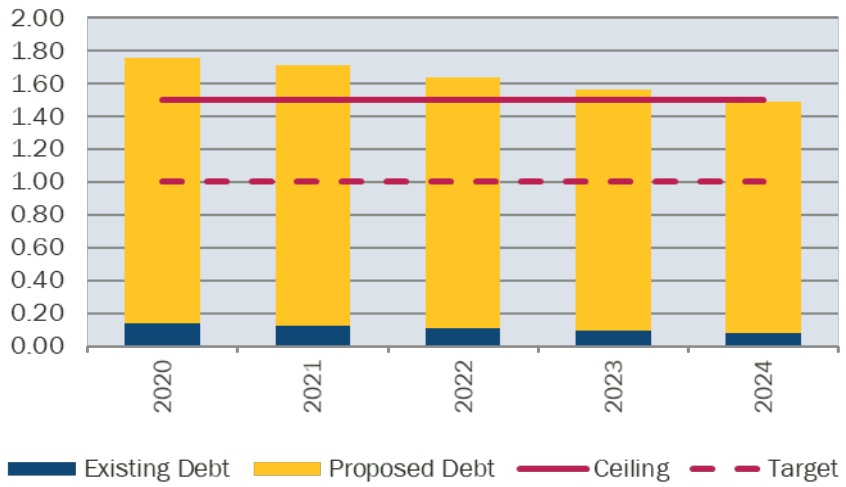
- Target Ratio: 1.00
- Ceiling Ratio: Not to exceed 1.50
- Projected 2020 Ratio: 1.75
- Highest Study Period Ratio: 1.75 (2020)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	28,436,423	1.70%	3,854,000	46,000,000	0.14	1.62	1.75
2021	28,919,842	1.70%	3,518,000	46,000,000	0.12	1.59	1.71
2022	29,411,480	1.70%	3,172,000	45,003,158	0.11	1.53	1.64
2023	29,911,475	1.70%	2,815,000	43,975,116	0.09	1.47	1.56
2024	30,419,970	1.70%	2,447,000	42,914,895	0.08	1.41	1.49

Debt to Obligated Resources



5-Year Payout Ratio Overview

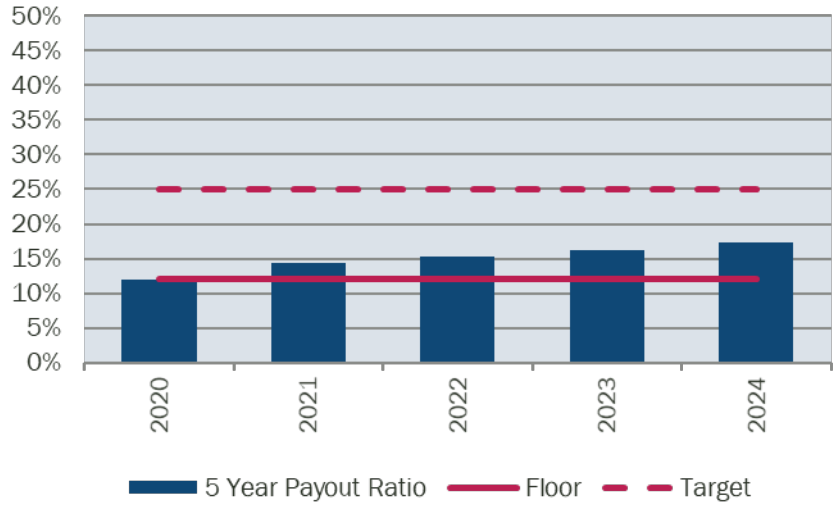
- **What does it measure?** The percentage of UNCSA's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

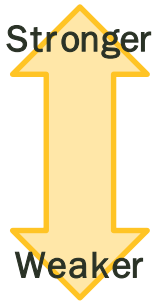
- Target Ratio: 25%
- Floor Ratio: Not less than 12%
- Projected 2020 Ratio: 12%
- Lowest Study Period Ratio: 12% (2020)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	49,854,000	12%
2021	49,518,000	14%
2022	48,175,158	15%
2023	46,790,116	16%
2024	45,361,895	17%

5-Year Payout Ratio





Expendable Resources to Debt

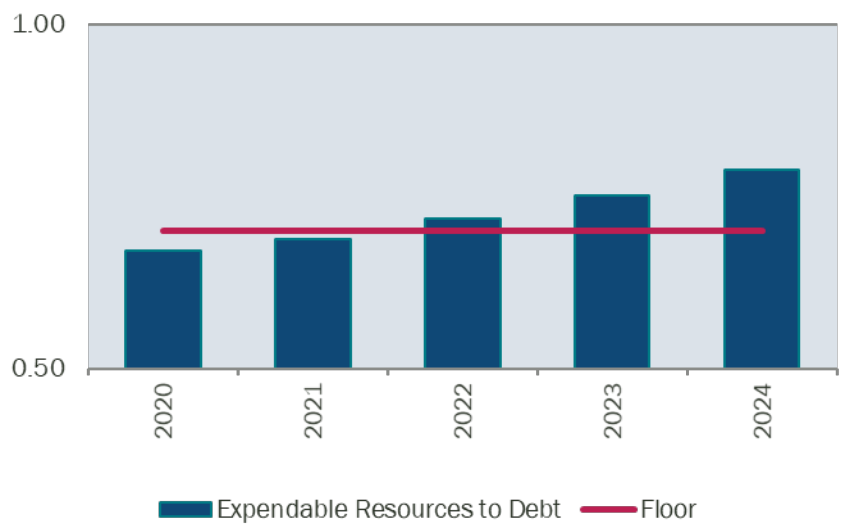
- **What does it measure?** The number of times UNCSA's liquid and expendable net position covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

- Floor Ratio: Not less than .70x
- Projected 2020 Ratio: .67x
- Lowest Study Period Ratio: .67x (2020)

Expendable Resources to Debt

1	2	3	4	5	6	7
			Expendable Resources to Debt			
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	33,444,093	1.70%	3,854,000	46,000,000	8.68	0.67
2021	34,012,642	1.70%	3,518,000	46,000,000	9.67	0.69
2022	34,590,857	1.70%	3,172,000	45,003,158	10.91	0.72
2023	35,178,902	1.70%	2,815,000	43,975,116	12.50	0.75
2024	35,776,943	1.70%	2,447,000	42,914,895	14.62	0.79

Expendable Resources to Debt



Debt Service to Operating Expenses

- **What does it measure?** UNCSA's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

- Policy Ratio: Not to exceed 4.50%
- Projected 2020 Ratio: .65%
- Highest Study Period Ratio: 3.96% (2022)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	69,094,225	1.70%	452,012	-	0.65%	n/a	0.65%
2021	71,708,627	1.70%	451,235	1,439,800	0.63%	2.01%	2.64%
2022	72,903,197	1.70%	451,188	2,436,642	0.62%	3.34%	3.96%
2023	74,086,873	1.70%	451,843	2,436,642	0.61%	3.29%	3.90%
2024	75,290,226	1.70%	452,169	2,436,642	0.60%	3.24%	3.84%

Debt Service to Operating Expenses

5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, UNCSA's debt capacity is based on the amount of debt UNCSA could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, UNCSA's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, UNCSA's current estimated debt capacity is exhausted**.** After taking into account any legislatively approved projects detailed in **Section 3** above, if UNCSA issued no additional debt until the last year of the Study Period, then UNCSA's debt capacity for 2024 is projected to increase to **$268,060.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	1.75	1.50	(7,199,365)
2021	1.71	1.50	(6,138,236)
2022	1.64	1.50	(4,057,939)
2023	1.56	1.50	(1,922,903)
2024	1.49	1.50	268,060

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of UNCSA's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" does not necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- **If UNCSA were to use all of its calculated debt capacity during the Study Period, UNCSA's credit ratings may face significant downward pressure**.
- Projecting the exact amount UNCSA could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **Use of Multiple Factors**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.
  - **The State's Impact**
    - In assessing each institution's credit rating, rating agencies also consider the State's credit rating and demographic trends, the health of its pension system, the level of support it has historically provided to the institution, and any legislation or policies affecting campus

operations.
    - Historically, each institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
    - If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.
- **Factor Interdependence**
    - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
    - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
    - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
    - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

UNCSA's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 2015	Certificates of Participation	4,181,000	6/1/2030	Student Housing Project	2005	Student Fees
Total		4,181,000				

Approved by the UNC Board of Governors on May 20, 2020

7. Credit Profile

The following page provides a snapshot of UNCSA's historical key credit metrics, along with (1) a summary of various observations and (2) recommendations for maintaining and improving UNCSA's credit profile in the future.

*Note: This report primarily uses data as of the end the 2018-19 fiscal year. UNCSA received its credit rating from Moody's in January 2020. The credit rating is included here to allow for comparisons to peer institutions.

Credit Profile of the University – (General Revenue)

Overview

- Moody's assigned UNCSA's general revenue bonds an A2 rating. The outlook is stable.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-

Non Investment Grade

Key Information Noted in Reports

Credit Strengths

- Niche role, good enrollment diversification, and affordable tuition pricing support
- Favorable student demand and incremental enrollment growth
- Strong financial support from Aaa-rated North Carolina
- Manageable leverage and solid operating reserve

Credit Challenges

- Thin operating performance, small scope of operations, and tuition pricing limitations
- Cash flow margins are likely to remain weaker than similarly rated peers

Recommendations & Observations

- Continue trend of strengthening balance sheet metrics (Expendable Financial Resources, Total Financial Resources, Total Cash and Investments)

*Note: This report primarily uses data as of the end the 2018-19 fiscal year. UNCSA received its credit rating from Moody's in January 2020. The credit rating is included here to allow for comparisons to peer institutions.

8. Peer Comparison

Moody's Key Credit Ratios	University of North Carolina School of the Arts	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2019	New York University	The Juilliard School	University of Cincinnati	Savannah College of Art & Design	
Most Senior Rating	A2*	Aa2	Aa2	Aa3	A3	A2
Total Debt ($, in millions)	51	7536	190	1260	170	64
Total Cash & Investments ($, in millions)	132	6959	1124	1564	366	100
Operating Revenue ($, in millions)	66	12844	109	1222	439	97
Operating Expenses ($, in millions)	67	12365	115	1214	301	93
Market Performance Ratios						
Annual Change in Operating Revenue (%)	5.3%	9.8%	3.7%	2.6%	11.2%	2.7%
Operating Ratios						
Operating Cash Flow Margin (%)	5.3%	12.4%	11.8%	14.1%	40.8%	11.1%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	2.0	0.6	9.8	1.3	1.2	0.8
Total Debt to Operating Expenses (x)	0.8	0.6	1.7	1.0	0.6	0.7
Monthly Days Cash on Hand (x)	146	130	1121	148	461	167
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	2.6	0.9	5.9	1.2	2.2	1.6
Debt Service to Operating Expenses (%)	9.3%	3.9%	7.7%	7.1%	4.1%	5.7%
Total Debt-to-Cash Flow (x)	12.9	4.7	14.8	7.3	1.0	6.9

*Note: This report primarily uses data as of the end the 2018-19 fiscal year. UNCSA received its credit rating from Moody's in January 2020. The credit rating is included here to allow for comparisons to peer institutions.

Debt Management Policies

UNCSA's current debt policy is included in the following pages.

Debt Management Manual

University of North Carolina School of the Arts

March 1, 2017

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Introduction

The University of North Carolina School of the Arts ("UNCSA") views its debt capacity as a limited resource that should be used, when appropriate, to help fund the capital investments necessary for the successful implementation of UNCSA's strategic vision to prepare its gifted emerging artists with the experience, knowledge, and skills needed to excel in their disciplines and in their lives, and it serves and enriches the cultural and economic prosperity of the people of North Carolina and the nation. UNCSA recognizes the important role that debt-related strategies may play as it makes the necessary investments in its infrastructure in order to become and remain the destination institution for dedicated students seeking challenging academic programs, engaged faculty and a vibrant campus culture.

This Manual has been developed to assist UNCSA's efforts to manage its debt on a long-term, portfolio basis and in a manner consistent with UNCSA's stated policies, objectives and core values. Like other limited resources, UNCSA's debt capacity should be used and allocated strategically and equitably.

Specifically, the objective of this Manual is to provide a framework that will enable UNCSA's Board of Trustees (the "Board") and finance staff to:

(i) Identify and prioritize projects eligible for debt financing;

(ii) Limit and manage risk within UNCSA's debt portfolio;

(iii) Establish debt management guidelines and quantitative parameters for evaluating UNCSA's financial health, debt affordability and debt capacity;

(iv) Manage and protect UNCSA's credit profile in order to maintain UNCSA's credit rating at a strategically optimized level and maintain access to the capital markets; and

(v) Ensure UNCSA remains in compliance with all of its post-issuance obligations and requirements.

This Manual is intended solely for UNCSA's internal planning purposes. The Vice Chancellor for Business Affairs and/or the Associate Vice Chancellor for Finance and Controller will review this Manual annually and, if necessary, recommend changes to ensure that it remains consistent with University's strategic objectives and the evolving demands and accepted practices of the public higher education marketplace. Proposed changes to this Manual are subject to the Chancellor's approval.

2. Authorization and Oversight

UNCSA's Associate Vice Chancellor for Finance and Controller is responsible for the day-to-day management of UNCSA's financial affairs in accordance with the terms of this Manual and for all of UNCSA's debt financing activities. Each University financing will conform to all applicable State and Federal laws.

The Board will consider for approval each proposed financing in accordance with the requirements of any applicable State law.

3. Process for Identifying and Prioritizing Capital Projects Requiring Debt

Only projects that directly or indirectly relate to the mission of UNCSA will be considered for debt financing.

(i) Self-Liquidating Projects – A project that has a related revenue stream (self-liquidating project) will receive priority consideration. Each self-liquidating project financing must be supported by an achievable plan of finance that provides, or identifies sources of funds, sufficient to (1) service the debt associated with the project, (2) pay for any related infrastructure improvements, (3) cover any new or increased operating costs and (4) fund appropriate reserves for anticipated replacement and renovation costs.

(ii) Energy Conservation Projects – Each energy conservation project financing must provide annual savings sufficient to service the applicable debt and all related monitoring costs.

(iii) Other Projects – Other projects funded through budgetary savings, gifts and grants will be considered on a case-by-case basis. Any projects that will require gift financing or include a gift financing component must be approved by the Vice Chancellor for Business Affairs before any project-restricted donations are solicited. The fundraising goal for any project to be financed primarily with donations should also include, when feasible, an appropriately-sized endowment for deferred maintenance and other ancillary ownership costs. In all cases, institutional strategy, and not donor capacity, must drive the decision to pursue any proposed project.

4. Benchmarks and Debt Ratios

Overview

When evaluating its current financial health and any proposed plan of finance, UNCSA takes into account both its debt affordability and its debt capacity. Debt affordability focuses on UNCSA's cash flows and measures UNCSA's ability to service its debt through its operating budget and identified revenue streams. Debt capacity, on the other hand, focuses on the relationship between UNCSA's net assets and its total debt outstanding.

Debt capacity and affordability are impacted by a number of factors, including UNCSA's enrollment trends, reserve levels, operating performance, ability to generate additional revenues to support debt service, competing capital improvement or programmatic needs, and general market conditions. Because of the number of potential variables, UNCSA's debt capacity cannot be calculated based on any single ratio or even a small handful of ratios.

UNCSA believes, however, that it is important to consider and monitor objective metrics when evaluating UNCSA's financial health and its ability to incur additional debt. To that end, UNCSA has identified three key financial ratios that it will use to assess its ability to absorb additional debt based on its current and projected financial condition:

(i) Debt to Obligated Resources

(ii) Expendable Resources to Debt

(iii) Debt Service to Operating Expenses

Note that the selected financial ratios are also monitored as part of the debt capacity study for The University of North Carolina delivered each year under Article 5 of Chapter 116D of the North Carolina General Statutes (the "UNC Debt Capacity Study"), which UNCSA believes will promote clarity and consistency in UNCSA's debt management and planning efforts.

UNCSA has established for each ratio a floor or ceiling target, as the case may be, with the expectation that UNCSA will operate within the parameters of those ratios most of the time. To the extent possible, the policy ratios established from time to time in this Manual should align with the ratios used in the report UNCSA

submits each year as part of the UNC Debt Capacity Study. The policy ratios have been established to help preserve UNCSA's financial health and operating flexibility and to ensure UNCSA is able to access the market to address capital needs or to take advantage of potential refinancing opportunities. Attaining or maintaining a specific credit rating is not an objective of this Manual.

UNCSA recognizes that the policy ratios, while helpful, have limitations and should not be viewed in isolation of UNCSA's strategic plan or other planning tools. In accordance with the recommendations set forth in the initial UNC Debt Capacity Study delivered April 1, 2016, UNCSA has developed as part of this Manual specific criteria for evaluating and, if warranted, approving critical infrastructure projects even when UNCSA has limited debt capacity as calculated by the UNC Debt Capacity Study or the benchmark ratios in this Manual. In such instances, the Board may approve the issuance of debt with respect to a proposed project based on one or more of the following findings:

(i) The proposed project would generate additional revenues (including, if applicable, dedicated student fees or grants) sufficient to support the financing, which revenues are not currently captured in the benchmark ratios.

(ii) The proposed project would be financed entirely with private donations based on pledges already in hand.

(iii) The proposed project is essential to the implementation of one of the Board's strategic priorities.

(iv) The proposed project addresses life and safety issues or addresses other critical infrastructure needs.

(v) Foregoing or delaying the proposed project would result in significant additional costs to UNCSA or would negatively impact UNCSA's credit rating.

At no point, however, should UNCSA intentionally operate outside an established policy ratio without conscious and explicit planning.

Ratio 1 – Debt to Obligated Resources

What does it measure? UNCSA's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt under the General Revenue Bond Statutes

Why is it tracked? The ratio, which is based on the legal structure proscribed by the General Revenue Bond Statutes, provides a general indication of UNCSA's ability to absorb debt on its balance sheet and is the primary ratio used to calculate UNCSA's "debt capacity" under the methodology used in the UNC Debt Capacity Study

How is it calculated? Aggregate debt divided by obligated resources*

Policy Ratio: Not to exceed 1.50x (UNC Debt Capacity Study Target Ratio = 1.50x)

*Available Funds, which is the concept commonly used to capture each UNC's campus's obligated resources in its loan and bond documentation, has been used as a proxy for obligated resources. The two concepts are generally identical, though *Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of UNCSA's* obligated resources.

Ratio 2 – Expendable Resources to Debt

What does it measure? The number of times UNCSA's liquid and expendable net assets covers its aggregate debt

Why is it tracked? The ratio, which is widely tracked by rating agencies and other capital market participants, is a basic measure of financial health and assesses UNCSA's ability to settle its debt obligations using only its available net assets as of a particular date

How is it calculated? The sum of (1) Adjusted Unrestricted Net Assets and (2) Restricted Expendable Net Assets divided by aggregate debt

Policy Ratio: Not less than 1.25x

Ratio 3 – Debt Service to Operating Expenses

What does it measure? UNCSA's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues

Why is it tracked? The ratio, which is widely tracked by rating agencies and other capital market participants, evaluates UNCSA's relative cost of borrowing to its overall expenditures and provides a measure of UNCSA's budgetary flexibility

How is it calculated? Annual debt service divided by annual operating expenses

Policy Ratio: Not to exceed 3.00%

Reporting

The Vice Chancellor for Business Affairs and/or the Associate Vice Chancellor for Finance and Controller will review each ratio in connection with the delivery of the University's audited financials and will provide an annual report to the Board substantially in the form of **Appendix B** detailing (1) the calculation of each ratio for that fiscal year and (2) an explanation for any ratio that falls outside the University's stated policy ratio, along with (a) any applicable recommendations, strategies and an expected timeframe for aligning such ratio with the University's stated policy or (b) the rationale for any recommended changes to any such stated policy ratio going forward (including any revisions necessitated by changes in accounting standards or rating agency methodologies).

5. Debt Portfolio Management and Transaction Structure Considerations

Generally

Numerous types of financing structures and funding sources are available, each with specific benefits, risks, and costs. Potential funding sources and structures will be reviewed and considered by the Vice Chancellor for Business Affairs and/or Associate Vice Chancellor for Finance and Controller within the context of this Manual and the overall portfolio to ensure that any financial product or structure is consistent with UNCSA's stated objectives. As part of effective debt management, UNCSA must also consider its investment and cash management strategies, which influence the desired structure of the debt portfolio.

Method of Sale

UNCSA will consider various methods of sale on a transaction-by-transaction basis to determine which method of sale (i.e., competitive, negotiated or private placement) best serves UNCSA's strategic plan and financing objectives. In making that determination, UNCSA will consider, among other factors: (1) the size and complexity of the issue, (2) the current interest rate environment and other market factors (such as bank and investor appetite) that might affect UNCSA's cost of funds, and (3) possible risks associated with each method of sale (e.g., rollover risk associated with a financing that is privately placed with a bank for a committed term that is less than the term of the financing).

Tax Treatment

When feasible and appropriate for the particular project, the use of tax-exempt debt is generally preferable to taxable debt. Issuing taxable debt may reduce UNCSA's overall debt affordability due to higher rates but may be appropriate for projects that do not qualify for tax-exemption, or that may require interim funding. For example, taxable debt may be justified if it sufficiently mitigates UNCSA's ongoing administrative and compliance risks. When used, taxable debt should be structured to provide maximum repayment flexibility and rapid principal amortization.

Structure and Maturity

To the extent practicable, UNCSA should structure its debt to provide for level annual payments of debt service, though UNCSA may elect alternative structures when the Vice Chancellor for Business Affairs determines it to be in UNCSA's best interest. In addition, when financing projects that are expected to be self-supporting (such as a revenue-producing facility or a facility to be funded entirely through a dedicated fundraising campaign), the debt service may be structured to match future anticipated receipts.

UNCSA will use maturity structures that correspond with the life of the facilities financed, not to exceed 30 years. Equipment should be financed for a period not to exceed 120% of its useful life. Such determinations may be made on a blended basis, taking into account all assets financed as part of a single debt offering. As market dynamics change, maturity structures should be reevaluated. Call features should be structured to provide the highest degree of flexibility relative to cost.

Variable Rate Debt

UNCSA recognizes that a degree of exposure to variable interest rates within UNCSA's debt portfolio may be desirable in order to (1) take advantage of repayment or restructuring flexibility, (2) benefit from historically lower average interest costs and (3) provide a "match" between debt service requirements and the projected cash flows from UNCSA's assets. UNCSA's debt portfolio should be managed to ensure that no more than 20% of UNCSA's total debt bears interest at an unhedged variable rate.

UNCSA's finance staff will monitor overall interest rate exposure and will analyze and quantify potential risks, including interest rate, liquidity and rollover risks. UNCSA may manage the liquidity risk of variable rate debt either through its own working capital/investment portfolio, the type of instrument used, or by using third party sources of liquidity. UNCSA may manage interest rate risk in its portfolio through specific budget and central bank management strategies or through the use of derivative instruments.

[Public Private Partnerships]

To address UNCSA's anticipated capital needs as efficiently and prudently as possible, UNCSA may choose to explore and consider opportunities for alternative and non-traditional transaction structures (collectively, "P3 Arrangements").

Due to their higher perceived risk and increased complexity, and because the cash flows for the project must satisfy the private partner's expected risk-adjusted rate of return, the financing and initial transaction costs for projects acquired through P3 Arrangements are generally higher than projects financed with proceeds of traditional debt instruments. P3 Arrangements should therefore be pursued only when UNCSA has determined that (1) a traditional financing alternative is not feasible, (2) a P3 Arrangement will likely produce construction or overall operating results that are superior, faster or more efficient than a traditional delivery model or (3) a P3 Arrangement serves one of the Board's broader strategic objectives (e.g., a decision that operating a particular auxiliary function is no longer consistent with UNCSA's core mission).

Absent a compelling strategic reason to the contrary, P3 Arrangements should not be considered if the Vice Chancellor for Business Affairs determines, in consultation with UNCSA's advisors, that the P3 Arrangement will be viewed as "on-credit" (i.e., treated as University debt) by UNCSA's auditors or outside rating agencies. When evaluating whether the P3 Arrangement should be viewed as "on-credit," rating agencies consider UNCSA's economic interest in the project and the level of control it exerts over the project. Further, rating agencies will generally treat a P3 Arrangement as University debt if the project is located on UNCSA's campus or if the facility is to be used for an essential University function. For this reason, any P3 Arrangement for a university-related facility to be located on land owned by the State, UNCSA or a UNCSA affiliate must be approved in advance by the Chancellor.

Refunding Considerations

UNCSA will actively monitor its outstanding debt portfolio for refunding or restructuring opportunities. Absent a compelling economic or strategic reason to the contrary, UNCSA should evaluate opportunities to issue bonds for the purpose of refunding existing debt obligations of UNCSA ("Refunding Bonds") using the following general guidelines:

(i) The life of the Refunding Bonds should not exceed the remaining life of the bonds being refunded.

(ii) Refunding Bonds issued to achieve debt service savings should have a target savings level measured on a present net value basis of at least 3% of the par amount refunded.

(iii) Refunding Bonds that do not achieve debt service savings may be issued to restructure debt or provisions of bond documents if such refunding serves a compelling interest.

(iv) Refunding Bonds may also be issued to relieve UNCSA of certain limitations, covenants, payment obligations or reserve requirements that reduce operational flexibility.

6. Derivative Products

UNCSA recognizes that derivative products may provide for more flexible management of the debt portfolio. In certain circumstances, interest rate swaps and other derivatives permit UNCSA to adjust its mix of fixed- and variable-rate debt and manage its interest rate exposures. Derivatives may also be an effective way to manage liquidity risks. UNCSA will use derivatives only to manage and mitigate risk; UNCSA will not use derivatives to create leverage or engage in speculative transactions.

As with underlying debt, UNCSA's finance staff will evaluate any derivative product comprehensively, taking into account its potential costs, benefits and risks, including, without limitation, any tax risk, interest rate risk, liquidity risk, credit risk, basis risk, rollover risk, termination risk, counterparty risk, and amortization risk. Before entering into any derivative product, the Vice Chancellor for Business Affairs and/or Associate Vice Chancellor for Finance and Controller must (1) conclude, based on the advice of a reputable swap advisor, that the terms of any swap transaction are fair and reasonable under current market conditions and (2)

ensure that UNCSA's finance staff has a clear understanding of the proposed transaction's costs, cash flow impact and reporting treatment.

UNCSA will use derivatives only when the Vice Chancellor for Business Affairs and/or Associate Vice Chancellor for Finance and Controller determines, based on the foregoing analysis, that the instrument provides the most effective method for accomplishing UNCSA's strategic objectives without imposing inappropriate risks on UNCSA.

7. Post-Issuance Compliance Matters

On their adoption, the Associate Vice Chancellor for Finance and Controller will attach as **Appendix A** to this Strategy any policies relating to post-issuance compliance.

May 19, 2020

The University of North Carolina System Debt Capacity Study – Fiscal Year 2019

Western Carolina University
Institution Report

Western Carolina University

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "***Act***"), Western Carolina University ("***WCU***") has submitted this report (this "***Institution Report***") as part of the annual debt capacity study (the "***Study***") undertaken by The University of North Carolina (the "***University***") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. WCU has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, WCU, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—WCU has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, WCU's debt capacity reflects the amount of debt WCU could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that WCU intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- WCU's current debt profile, including project descriptions financed with, and the sources of repayment for, WCU's outstanding debt;
- WCU's current credit profile, along with recommendations for maintaining or improving WCU's credit rating; and
- A copy of any WCU debt management policy currently in effect.

Overview of WCU

For the fall 2018 semester, WCU had a headcount student population of approximately 11,639, including 10,027 undergraduate students and 1,612 graduate and doctoral students. WCU employs approximately 612 full-time, part-time and temporary instructional faculty.

Over the past 5 years, WCU's enrollment has increased approximately 12%. WCU's average age of plant (15.32 years) is slightly higher than the median ratio for all Institutions (14.53 years). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs.

WCU anticipates incurring approximately $83.62 million in additional debt during the Study Period, as summarized in **Section 3** below. WCU has made no changes to the financial model's standard growth assumptions, which are based on the Consumer Price Index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 and GASB 75.
- Outstanding debt service is based on WCU's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to WCU by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt WCU expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below may overstate WCU's current debt burden.

1	2	3	4	5	6
		Obligated Resources			
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	96,436,635	11,090,756			107,527,391
2016	106,429,718	8,392,304		6.78%	114,822,022
2017	122,276,065	9,231,867		14.53%	131,507,932
2018	(87,996,057)	11,238,050	241,072,371	24.95%	164,314,364
2019	(97,785,259)	11,547,232	247,061,837	-2.12%	160,823,810
2020	163,557,815			1.70%	163,557,815
2021	166,338,298			1.70%	166,338,298
2022	169,166,049			1.70%	169,166,049
2023	172,041,872			1.70%	172,041,872
2024	174,966,583			1.70%	174,966,583

		Operating Expenses			
Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	204,282,358	2,407,818			206,690,176
2016	207,002,819	2,702,905		1.46%	209,705,724
2017	217,409,367	(1,037,574)		3.18%	216,371,793
2018	223,278,944	(2,016,765)	1,873,246	3.13%	223,135,425
2019	229,075,814	(1,571,730)	9,558,019	6.24%	237,062,103
2020	241,092,159			1.70%	241,092,159
2021	245,190,725			1.70%	245,190,725
2022	249,358,968			1.70%	249,358,968
2023	253,598,070			1.70%	253,598,070
2024	257,909,237			1.70%	257,909,237

7	8	9	10	11
		Outstanding Debt		
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	4,845,000	5,349,962	10,194,962	149,715,000
2021	5,785,000	6,252,293	12,037,293	143,930,000
2022	6,020,000	6,023,903	12,043,903	137,910,000
2023	6,270,000	5,762,300	12,032,300	131,640,000
2024	6,495,000	5,538,176	12,033,176	125,145,000
2025	6,780,000	5,257,413	12,037,413	118,365,000
2026	6,985,000	4,955,071	11,940,071	111,380,000
2027	6,950,000	4,637,931	11,587,931	104,430,000
2028	6,730,000	4,324,231	11,054,231	97,700,000
2029	6,275,000	4,042,181	10,317,181	91,425,000
2030	6,540,000	3,773,328	10,313,328	84,885,000
2031	6,815,000	3,502,281	10,317,281	78,070,000
2032	7,105,000	3,217,969	10,322,969	70,965,000
2033	6,745,000	2,946,459	9,691,459	64,220,000
2034	6,300,000	2,684,016	8,984,016	57,920,000
2035	5,095,000	2,465,988	7,560,988	52,825,000
2036	5,300,000	2,261,356	7,561,356	47,525,000
2037	5,515,000	2,045,100	7,560,100	42,010,000
2038	5,755,000	1,800,950	7,555,950	36,255,000
2039	6,015,000	1,546,025	7,561,025	30,240,000
2040	3,585,000	1,279,600	4,864,600	26,655,000
2041	3,765,000	1,104,550	4,869,550	22,890,000
2042	3,125,000	916,500	4,041,500	19,765,000
2043	3,285,000	756,250	4,041,250	16,480,000
2044	3,455,000	587,750	4,042,750	13,025,000
2045	3,615,000	428,738	4,043,738	9,410,000
2046	3,765,000	280,366	4,045,366	5,645,000
2047	2,770,000	154,425	2,924,425	2,875,000
2048	2,875,000	52,109	2,927,109	-

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Unrestricted Net Position plus Foundation Temporarily Restricted Net Position minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 and GASB 75 during the projection period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	61,189,878	38,491,125	-	-	5,607,353		11,090,756	105,164,406
2016	77,326,718	38,661,630	-	-	9,605,091	9.14%	8,392,304	114,775,562
2017	81,341,429	40,531,293	-	-	6,477,309	8.58%	9,231,867	124,627,281
2018	(152,955,672)	57,556,023	-	-	14,046,785	14.63%	252,310,421	142,863,987
2019	(132,911,352)	78,912,829			34,217,573	8.54%	243,279,631	155,063,535
2020	112,244,540	80,254,347	-	-	34,799,272	1.70%	-	157,699,615
2021	114,152,697	81,618,671	-	-	35,390,859	1.70%	-	160,380,509
2022	116,093,293	83,006,188	-	-	35,992,504	1.70%	-	163,106,977
2023	118,066,879	84,417,294	-	-	36,604,377	1.70%	-	165,879,796
2024	120,074,016	85,852,388	-	-	37,226,651	1.70%	-	168,699,752

3. Proposed Debt Financings

The table below summarizes any legislatively approved projects that WCU expects to finance during the Study Period. Using the assumptions outlined in the table below, the model has developed a tailored, but conservative, debt service schedule for each proposed financing and incorporated each pro forma debt service schedule into its calculations of the financial ratios as detailed in **Section 4** below.

WCU Proposed Debt Financings

Year	Use of Funds	Borrowing Amount	Term	Source of Repayment
2020	Parking Deck Facility	23,615,185	30	Hourly/Permit Parking Fees
2021	Lower Campus Residence Hall	60,000,000	30	Housing Receipts
Total		83,615,185		

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** WCU's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

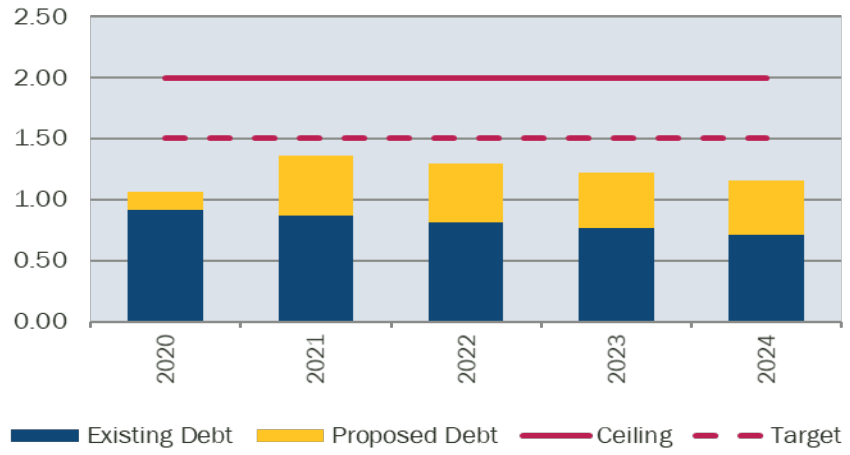
- Target Ratio: 1.50
- Ceiling Ratio: Not to exceed 2.00
- Projected 2019 Ratio: 1.06
- Highest Study Period Ratio: 1.06 (2019)

*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	163,557,815	1.70%	149,715,000	23,615,185	0.92	0.14	1.06
2021	166,338,298	1.70%	143,930,000	83,088,339	0.87	0.50	1.36
2022	169,166,049	1.70%	137,910,000	81,209,058	0.82	0.48	1.30
2023	172,041,872	1.70%	131,640,000	79,280,353	0.77	0.46	1.23
2024	174,966,583	1.70%	125,145,000	77,300,922	0.72	0.44	1.16

Debt to Obligated Resources



5-Year Payout Ratio Overview

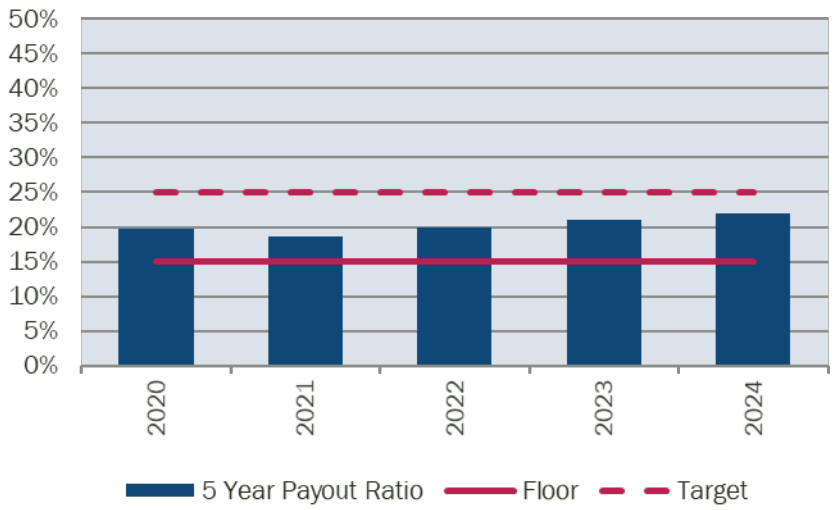
- **What does it measure?** The percentage of WCU's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

- Target Ratio: 25%
- Floor Ratio: Not less than 15%
- Projected 2020 Ratio: 20%
- Lowest Study Period Ratio: 19% (2021)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	173,330,185	20%
2021	227,018,339	19%
2022	219,119,058	20%
2023	210,920,353	21%
2024	202,445,922	22%

5-Year Payout Ratio



Expendable Resources to Debt

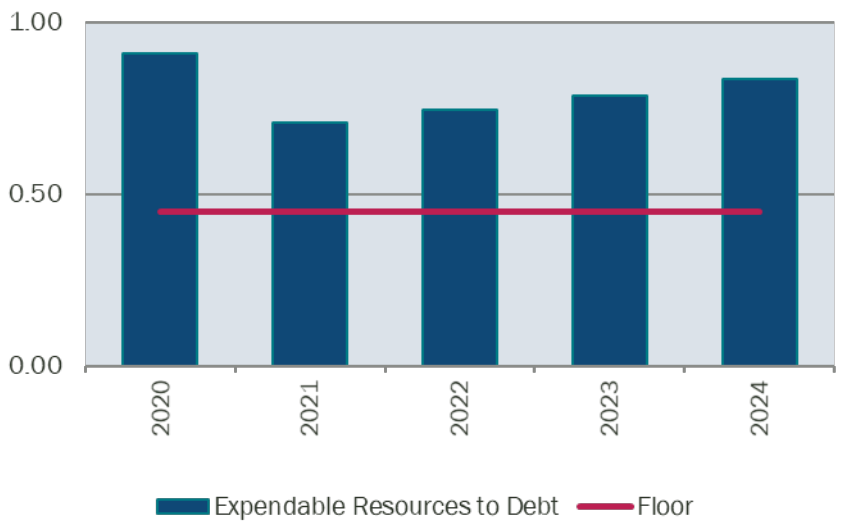
- **What does it measure?** The number of times WCU's liquid and expendable Net Position covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

- Floor Ratio: Not less than 0.45x
- Projected 2020 Ratio: 0.91x
- Lowest Study Period Ratio: 0.71x (2021)

Expendable Resources to Debt

1	2	3	4	5	6	7
Expendable Resources to Debt						
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	157,699,615	1.70%	149,715,000	23,615,185	1.05	0.91
2021	160,380,509	1.70%	143,930,000	83,088,339	1.11	0.71
2022	163,106,977	1.70%	137,910,000	81,209,058	1.18	0.74
2023	165,879,796	1.70%	131,640,000	79,280,353	1.26	0.79
2024	168,699,752	1.70%	125,145,000	77,300,922	1.35	0.83

Expendable Resources to Debt



Debt Service to Operating Expenses

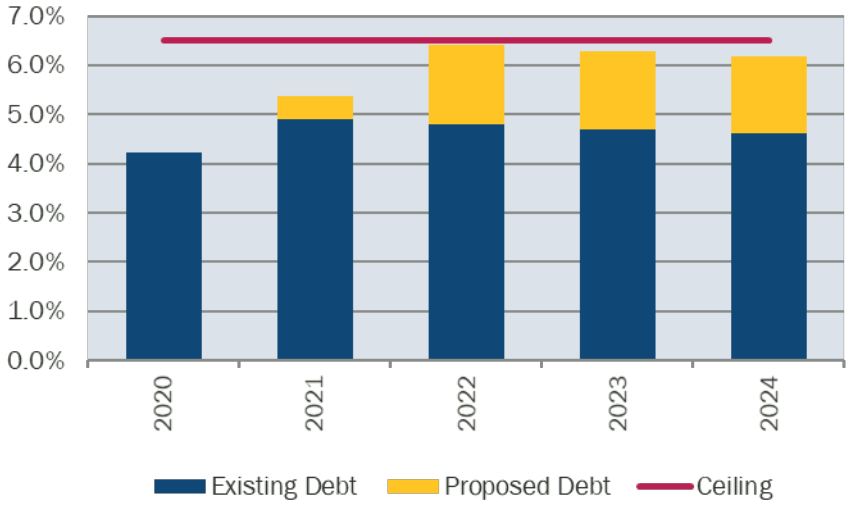
- **What does it measure?** WCU's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

- Policy Ratio: Not to exceed 6.50%
- Projected 2020 Ratio: 4.23%
- Highest Study Period Ratio: 6.40% (2022)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	241,092,159	1.70%	10,194,962	-	4.23%	n/a	4.23%
2021	245,811,805	1.70%	12,037,293	1,147,926	4.90%	0.47%	5.36%
2022	251,544,191	1.70%	12,043,903	4,064,504	4.79%	1.62%	6.40%
2023	255,733,868	1.70%	12,032,300	4,064,504	4.71%	1.59%	6.29%
2024	259,994,311	1.70%	12,033,176	4,064,504	4.63%	1.56%	6.19%

Debt Service to Operating Expenses



5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, WCU's debt capacity is based on the amount of debt WCU could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, WCU's current debt capacity equals **the lowest constraint on its debt capacity** in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, WCU's current estimated debt capacity is **$153,785,445.** After taking into account any legislatively approved projects detailed in **Section 3** above, if WCU issued no additional debt until the last year of the Study Period, then WCU's debt capacity for 2024 is projected to decrease to **$147,487,245.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	1.06	2.00	153,785,445
2021	1.36	2.00	105,658,256
2022	1.30	2.00	119,213,039
2023	1.23	2.00	133,163,390
2024	1.16	2.00	147,487,245

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of WCU's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" does not necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- **If WCU were to use all of its calculated debt capacity during the Study Period, WCU's credit ratings may face significant downward pressure**.
- Projecting the exact amount WCU could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **Use of Multiple Factors**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.
  - **The State's Impact**

- In assessing each institution's credit rating, rating agencies also consider the State's credit rating and demographic trends, the health of its pension system, the level of support it has historically provided to the institution, and any legislation or policies affecting campus operations.
- Historically, each institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
- If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.

- **Factor Interdependence**
  - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
  - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.
- **Distortions Across Rating Categories**
  - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
  - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

WCU's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
Series 2011B	UNC System Pool Revenue Bonds	15,465,000	4/1/2041	Student Housing - Harrill		Housing Revenues
				Athletic Facilities	2003A	Student Fees
				Student Recreation Center	2003A	Student Fees
Series 2013	Refunding Limited Obligation Bonds	7,255,000	6/1/2033	Student Housing Projects		Housing Revenues
Series 2015	Refunding Limited Obligation Bonds	6,545,000	6/1/2032	Student Housing Projects	2005	Housing Revenues
Series 2015A	General Revenue and Revenue Refunding Bonds	35,885,000	10/1/2045	Athletic Facilities	2003A	Student Fees
				Student Recreation Center	2003A	Student Fees
				Student Recreation Center	2008A	Student Fees
				Dining Hall Facility	2008A	Student Fees
				Brown Renovation		Student Fees
Series 2015B	Taxable General Revenue Refunding Bonds	5,940,000	10/1/2026	Student Center	2006A	Student Fees
				Athletic Facilities	2006A	Student Fees
Series 2016	Refunding Limited Obligation Bonds	37,185,000	6/1/2039	Student Housing Projects	2008	Housing Revenues
Series 2018	General Revenue Bonds	46,285,000	10/1/2047	New Residence Hall		Housing Revenues
Total		154,560,000				

7. Credit Profile

The following page provides a snapshot of WCU's current credit ratings, along with (1) a summary of various credit factors identified in WCU's most recent rating report and (2) recommendations for maintaining and improving WCU's credit ratings in the future.

Credit Profile of the University – (General Revenue)

Overview

- Moody's maintains a Aa3 rating on WCU's general revenue bonds. The outlook is stable.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-

Non Investment Grade

Key Information Noted in Reports

Credit Strengths

- Steadily growing enrollment and close budget oversight
- Consistently favorable operating performance
- Strong financial support from the State of North Carolina (Aaa stable)
- Financial reserves are increasing at a pace above other Aa3-rated peers

Credit Challenges

- Heavy reliance on state funding with the reliance increasing due to NC Promise Tuition Plan
- State imposed pricing restrictions limits the university's ability to address unforeseen budget pressures
- Limited additional debt capacity without financial reserve growth

Recommendations & Observations

- Continue to develop and implement strategies and policies to meet WCU's unique challenges, including strategies to growth wealth to provide a stronger cushion relative to debt and improve revenue diversity.

Approved by the UNC Board of Governors on May 20, 2020

8. Peer Comparison

Moody's Key Credit Ratios	Western Carolina University	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2019	Morehead State University	Pittsburgh State University	Eastern Illinois University	Murray State University	
Most Senior Rating	Aa3	A2	A2	B1	A2	Aa3
Total Debt ($, in millions)	159	92	57	87	76	437
Total Cash & Investments ($, in millions)	244	76	124	138	262	735
Operating Revenue ($, in millions)	255	132	111	210	183	691
Operating Expenses ($, in millions)	228	134	99	202	183	641
Market Performance Ratios						
Annual Change in Operating Revenue (%)	5.9%	-0.9%	11.5%	2.0%	0.2%	2.7%
Operating Ratios						
Operating Cash Flow Margin (%)	15.6%	-0.9%	20.1%	13.4%	7.8%	12.1%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	1.1	0.6	1.3	0.7	1.4	1.0
Total Debt to Operating Expenses (x)	0.7	0.7	0.6	0.4	0.4	0.5
Monthly Days Cash on Hand (x)	201	62	130	77	197	156
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	1.5	0.8	2.2	1.6	3.5	1.6
Debt Service to Operating Expenses (%)	4.3%	7.8%	6.0%	5.0%	3.4%	4.5%
Total Debt-to-Cash Flow (x)	4.0	7.0	2.6	3.1	5.3	4.6

Approved by the UNC Board of Governors on May 20, 2020

9. Debt Management Policies

WCU's current debt policy is attached.

Proposed – December 8, 2016

Debt Management Strategy

Western Carolina University

Approved by the UNC Board of Governors on May 20, 2020

Table of Contents

1. Introduction

Western Carolina University ("WCU") views its debt capacity as a limited resource that should be used, when appropriate, to help fund the capital investments necessary for the successful implementation of WCU's strategic vision to serve the people of North Carolina and beyond, while preserving the operational flexibility and resources necessary to support WCU's current and future programming. WCU recognizes the important role that the responsible stewardship of its financial resources will play as WCU seeks to invest in its campus and related infrastructure in order to meet anticipated demand.

This Strategy has been developed to assist WCU's efforts to manage its debt on a long-term, portfolio basis and in a manner consistent with WCU's stated policies, objectives and core values. Like other limited resources, WCU's debt capacity should be used and allocated strategically and equitably.

Specifically, the objective of this Strategy is to provide a framework that will enable WCU's Board of Trustees (the "Board") and finance staff to:

(i) Identify and prioritize projects eligible for debt financing;

(ii) Limit and manage risk within WCU's debt portfolio;

(iii) Establish debt management guidelines and quantitative parameters for evaluating WCU's financial health, debt affordability and debt capacity;

(iv) Manage and protect WCU's credit profile in order to maintain WCU's credit rating at a strategically optimized level and maintain access to the capital markets; and

(v) Ensure WCU remains in compliance with all of its post-issuance obligations and requirements.

This Strategy is intended solely for WCU's internal planning purposes. The Vice Chancellor for Administration & Finance will review this Strategy annually and, if necessary, recommend changes to ensure that it remains consistent with the University's strategic objectives and the evolving demands and accepted practices of the public higher education marketplace. Proposed changes to this Strategy are subject to the Board's approval.

2. Authorization and Oversight

WCU's Vice Chancellor for Administration & Finance is responsible for the day-to-day management of WCU's financial affairs in accordance with the terms of this Strategy and for all of WCU's debt financing activities. Each University financing will conform to all applicable State and Federal laws.

The Board will consider for approval each proposed financing in accordance with the requirements of any applicable State law.

3. Process for Identifying and Prioritizing Capital Projects Requiring Debt

Only projects that directly or indirectly relate to the mission of WCU will be considered for debt financing.

(i) Self-Liquidating Projects – A project that has a related revenue stream (self-liquidating project) will receive priority consideration. Each self-liquidating project financing must be supported by an achievable plan of finance that provides, or identifies sources of funds, sufficient to (1) service the debt associated with the project, (2) pay for any related infrastructure improvements, (3) cover any new or increased operating costs and (4) fund appropriate reserves for anticipated replacement and renovation costs.

(ii) Energy Conservation Projects – Each energy conservation project financing must provide annual savings sufficient to service the applicable debt and all related monitoring costs.

(iii) Other Projects – Other projects funded through budgetary savings, gifts and grants will be considered on a case-by-case basis. Any project requiring financing to be repaid primarily with gift receipts (a "Gift-Financed Project") must be approved by the Chancellor with consultation from the Vice Chancellor for Development and Alumni Relations and the Vice Chancellor for Administration & Finance before any project-restricted donations are solicited. In all cases, institutional strategy, and not donor capacity, must drive the decision to pursue any proposed project.

The fundraising goal for any Gift-Financed Project should include, when feasible, an appropriately-sized endowment for deferred maintenance and other ancillary ownership costs. When such endowment is not feasible, the plan of finance for the Gift-Financed Project must identify other sources of funds sufficient to cover incremental increases in operating costs and to fund appropriate reserves for anticipated replacement and renovation costs relating to the Gift-Financed Project.

The University recognizes that it will begin to incur (1) significant soft costs for any Gift-Financed Project when an architect is selected and (2) significant hard costs for a project when construction actually begins. For any Gift-Financed Project, therefore, the University must have raised (1) at least 25% of the applicable fundraising goal in gifts and pledges before selecting an architect and (2) 100% of such fundraising goal in gifts before beginning construction. If less than 100% of the fundraising goal has been met, the University may still begin construction for a Gift-Financed Project if it has developed an achievable plan of finance that identifies sources of funds (other than gifts) sufficient to support a permanent financing for any difference between the applicable fundraising goal and the amount of gifts actually received to date. This Strategy recognizes that extraordinary circumstances may warrant strategic exceptions to the policies outlined in this paragraph, but any such exception must be approved by the Board of Trustees.

4. Benchmarks and Debt Ratios

Overview

When evaluating its current financial health and any proposed plan of finance, WCU takes into account both its debt affordability and its debt capacity. Debt affordability focuses on WCU's cash flows and measures WCU's ability to service its debt through its operating budget and identified revenue streams. Debt capacity, on the other hand, focuses on the relationship between WCU's net assets and its total debt outstanding.

Debt capacity and affordability are impacted by a number of factors, including WCU's enrollment trends, reserve levels, operating performance, ability to generate additional revenues to support debt service, competing capital improvement or programmatic needs, and general market conditions. Because of the number of potential variables, WCU's debt capacity cannot be calculated based on any single ratio or even a small handful of ratios.

WCU believes, however, that it is important to consider and monitor objective metrics when evaluating WCU's financial health and its ability to incur additional debt. To that end, WCU has identified four key financial ratios that it will use to assess its ability to absorb additional debt based on its current and projected financial condition:

(i) Debt to Obligated Resources

(ii) Debt Service Coverage Ratio

(iii) Expendable Resources to Debt

(iv) Debt Service to Operating Expenses

Note that the selected financial ratios are the same benchmarks monitored as part of the debt capacity study for The University of North Carolina delivered each year under Article 5 of Chapter 116D of the North Carolina General Statutes (the "UNC Debt Capacity Study"), which WCU believes will promote clarity and consistency in WCU's debt management and planning efforts.

WCU has established for each ratio a floor or ceiling target, as the case may be, with the expectation that WCU will operate within the parameters of those ratios most of the time. To the extent possible, the policy ratios established from time to time in this Strategy should align with the ratios used in the report WCU submits each year as part of the UNC Debt Capacity Study. The policy ratios have been established to help preserve WCU's financial health and operating flexibility and to ensure WCU is able to access the market to address capital needs or to take advantage of potential refinancing opportunities. Attaining or maintaining a specific credit rating is not an objective of this Strategy.

WCU recognizes that the policy ratios, while helpful, have limitations and should not be viewed in isolation of WCU's strategic plan or other planning tools. In accordance with the recommendations set forth in the initial UNC Debt Capacity Study delivered April 1, 2016, WCU has developed as part of this Strategy specific criteria for evaluating and, if warranted, approving critical infrastructure projects even when WCU has limited debt capacity as calculated by the UNC Debt Capacity Study or the benchmark ratios in this Strategy. In such instances, the Board may approve the issuance of debt with respect to a proposed project based on one or more of the following findings:

(i) The proposed project would generate additional revenues (including, if applicable, dedicated student fees or grants) sufficient to support the financing, which revenues are not currently captured in the benchmark ratios.

(ii) The proposed project would be financed entirely with private donations based on pledges already in hand.

(iii) The proposed project is essential to the implementation of one of the Board's strategic priorities.

(iv) The proposed project addresses life and safety issues or addresses other critical infrastructure needs.

(v) Foregoing or delaying the proposed project would result in significant additional costs to WCU or would negatively impact WCU's credit rating.

At no point, however, should WCU intentionally operate outside an established policy ratio without conscious and explicit planning.

Ratio 1 – Debt to Obligated Resources

What does it measure? WCU's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt under the General Revenue Bond Statutes

How is it calculated? Aggregate debt divided by obligated resources*

Policy Ratio: Not to exceed 2.00x

*Available Funds, which is the concept commonly used to capture each UNC's campus's obligated resources in its loan and bond documentation, has been used as a proxy for obligated resources. The two concepts are generally identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of WCU's obligated resources.

Ratio 2 – Debt Service Coverage Ratio Overview

What does it measure? WCU's ability to service its annual debt service obligations from WCU's operating cash flows

How is it calculated? Operating cash flow divided by annual debt service

Policy Ratio: Not less than 2.00x

Ratio 3 – Expendable Resources to Debt

What does it measure? The number of times WCU's liquid and expendable net assets covers its aggregate debt

How is it calculated? The sum of (1) Adjusted Unrestricted Net Assets and (2) Restricted Expendable Net Assets divided by aggregate debt

Policy Ratio: Not less than 0.45x

Ratio 4 – Debt Service to Operating Expenses

What does it measure? WCU's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues

How is it calculated? Annual debt service divided by annual operating expenses

Policy Ratio: Not to exceed 5.40%

Reporting

In an instance where the University falls outside a stated policy ratio, the Vice Chancellor for Administration & Finance will review each ratio in connection with the delivery of the University's audited financials and will provide a report to the Board detailing (1) the calculation of each ratio for that fiscal year and (2) an explanation for any ratio that falls outside the University's stated policy ratio, along with (a) any applicable recommendations, strategies and an expected timeframe for aligning such ratio with the University's stated policy or (b) the rationale for any recommended changes to any such stated policy ratio going forward (including any revisions necessitated by changes in accounting standards or rating agency methodologies).

5. Debt Portfolio Management and Transaction Structure Considerations

Generally

Numerous types of financing structures and funding sources are available, each with specific benefits, risks, and costs. Potential funding sources and structures will be reviewed and considered by the Vice Chancellor for Administration & Finance within the context of this Strategy and the overall portfolio to ensure that any financial product or structure is consistent with WCU's stated objectives. As part of effective debt management, WCU must also consider its investment and cash management strategies, which influence the desired structure of the debt portfolio.

Method of Sale

WCU will consider various methods of sale on a transaction-by-transaction basis to determine which method of sale (i.e., competitive, negotiated or private placement) best serves WCU's strategic plan and financing objectives. In making that determination, WCU will consider, among other factors: (1) the size and complexity of the issue, (2) the current interest rate environment and other market factors (such as bank and investor appetite) that might affect WCU's cost of funds, and (3) possible risks associated with each method of sale (e.g., rollover risk associated with a financing that is privately placed with a bank for a committed term that is less than the term of the financing).

Tax Treatment

When feasible and appropriate for the particular project, the use of tax-exempt debt is generally preferable to taxable debt. Issuing taxable debt may reduce WCU's overall debt affordability due to higher rates but may be appropriate for projects that do not qualify for tax-exemption, or that may require interim funding. For example, taxable debt may be justified if it sufficiently mitigates WCU's ongoing administrative and compliance risks.

When used, taxable debt should be structured to provide maximum repayment flexibility and rapid principal amortization.

Structure and Maturity

To the extent practicable, WCU should structure its debt to provide for level annual payments of debt service, though WCU may elect alternative structures when the Vice Chancellor for Administration & Finance determines it to be in WCU's best interest. In addition, when financing projects that are expected to be self-supporting (such as a revenue-producing facility or a facility to be funded entirely through a dedicated fundraising campaign), the debt service may be structured to match future anticipated receipts.

WCU will use maturity structures that correspond with the life of the facilities financed, not to exceed 30 years. Equipment should be financed for a period not to exceed 120% of its useful life. Such determinations may be made on a blended basis, taking into account all assets financed as part of a single debt offering. As market dynamics change, maturity structures should be reevaluated. Call features should be structured to provide the highest degree of flexibility relative to cost.

Variable Rate Debt

WCU recognizes that a degree of exposure to variable interest rates within WCU's debt portfolio may be desirable in order to (1) take advantage of repayment or restructuring flexibility, (2) benefit from historically lower average interest costs and (3) provide a "match" between debt service requirements and the projected cash flows from WCU's assets. WCU's debt portfolio should be managed to ensure that no more than 20% of WCU's total debt bears interest at an unhedged variable rate.

WCU's finance staff will monitor overall interest rate exposure and will analyze and quantify potential risks, including interest rate, liquidity and rollover risks. WCU may manage the liquidity risk of variable rate debt either through its own working capital/investment portfolio, the type of instrument used, or by using third party sources of liquidity. WCU may manage interest rate risk in its portfolio through specific budget and central bank management strategies or through the use of derivative instruments.

Public Private Partnerships

To address WCU's anticipated capital needs as efficiently and prudently as possible, WCU may choose to explore and consider opportunities for alternative and non-traditional transaction structures (collectively, "P3 Arrangements").

Due to their higher perceived risk and increased complexity, and because the cash flows for the project must satisfy the private partner's expected risk-adjusted rate of return, the financing and initial transaction costs for projects acquired through P3 Arrangements are generally higher than projects financed with proceeds of traditional debt instruments. P3 Arrangements should therefore be pursued only when WCU has determined that (1) a traditional financing alternative is not feasible, (2) a P3 Arrangement will likely produce construction or overall operating results that are superior, faster or more efficient than a traditional delivery model or (3) a P3 Arrangement serves one of the Board's broader strategic objectives (e.g., a decision that operating a particular auxiliary function is no longer consistent with WCU's core mission).

Absent a compelling strategic reason to the contrary, P3 Arrangements should not be considered if the Vice Chancellor for Administration & Finance determines, in consultation with WCU's advisors, that the P3 Arrangement will be viewed as "on-credit" (i.e., treated as University debt) by WCU's auditors or outside rating agencies. When evaluating whether the P3 Arrangement should be viewed as "on-credit," rating agencies consider WCU's economic interest in the project and the level of control it exerts over the project. Further, rating

agencies will generally treat a P3 Arrangement as University debt if the project is located on WCU's campus or if the facility is to be used for an essential University function. For this reason, any P3 Arrangement for a university-related facility to be located on land owned by the State, WCU or a WCU affiliate must be approved in advance by the Vice Chancellor for Administration & Finance.

Refunding Considerations

WCU will actively monitor its outstanding debt portfolio for refunding or restructuring opportunities. Absent a compelling economic or strategic reason to the contrary, WCU should evaluate opportunities to issue bonds for the purpose of refunding existing debt obligations of WCU ("Refunding Bonds") using the following general guidelines:

(i) The life of the Refunding Bonds should not exceed the remaining life of the bonds being refunded.

(ii) Refunding Bonds issued to achieve debt service savings should have a target savings level measured on a present net value basis of at least 3% of the par amount refunded.

(iii) Refunding Bonds that do not achieve debt service savings may be issued to restructure debt or provisions of bond documents if such refunding serves a compelling interest.

(iv) Refunding Bonds may also be issued to relieve WCU of certain limitations, covenants, payment obligations or reserve requirements that reduce operational flexibility.

6. Derivative Products

WCU recognizes that derivative products may provide for more flexible management of the debt portfolio. In certain circumstances, interest rate swaps and other derivatives permit WCU to adjust its mix of fixed- and variable-rate debt and manage its interest rate exposures. Derivatives may also be an effective way to manage liquidity risks. WCU will use derivatives only to manage and mitigate risk; WCU will not use derivatives to create leverage or engage in speculative transactions.

As with underlying debt, WCU's finance staff will evaluate any derivative product comprehensively, taking into account its potential costs, benefits and risks, including, without limitation, any tax risk, interest rate risk, liquidity risk, credit risk, basis risk, rollover risk, termination risk, counterparty risk, and amortization risk. Before entering into any derivative product, the Vice Chancellor for Administration & Finance must (1) conclude, based on the advice of a reputable swap advisor, that the terms of any swap transaction are fair and reasonable under current market conditions and (2) ensure that WCU's finance staff has a clear understanding of the proposed transaction's costs, cash flow impact and reporting treatment.

WCU will use derivatives only when the Vice Chancellor for Administration & Finance determines, based on the foregoing analysis, that the instrument provides the most effective method for accomplishing WCU's strategic objectives without imposing inappropriate risks on WCU.

7. Post-Issuance Compliance Matters

To the extent WCU adopts any formal policies relating to post-issuance compliance matters after the effective date of this Strategy, the Vice Chancellor for Administration & Finance will attach each such policy as **Appendix A** to this Strategy.

May 19, 2020

The University of North Carolina System
Debt Capacity Study – Fiscal Year 2019

Winston-Salem State University
Institution Report

Winston-Salem State University

Approved by the UNC Board of Governors on May 20, 2020

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1. Executive Summary

Overview of the Institution Report

Pursuant to Article 5 of Chapter 116D of the North Carolina General Statutes (the "*Act*"), Winston-Salem State University ("*WSSU*") has submitted this report (this "*Institution Report*") as part of the annual debt capacity study (the "*Study*") undertaken by The University of North Carolina (the "*University*") in accordance with the Act. Each capitalized term used but not defined in this Institution Report has the meaning given to such term in the Study.

This Institution Report details the historical and projected financial information incorporated into the financial model developed in connection with the Study. WSSU has used the model to calculate and project the following four financial ratios:

- Debt to Obligated Resources
- Five-Year Payout Ratio
- Expendable Resources to Debt
- Debt Service to Operating Expenses

See **Appendix A** to the Study for more information on the ratios and related definitions.

To produce a tailored, meaningful model, WSSU, in consultation with UNC System, has set its own policies for each model ratio. For the two statutorily-required ratios—**debt to obligated resources** and the **five-year payout ratio**—WSSU has set both a target policy and a floor or ceiling policy, as applicable.

For the purposes of the Study, WSSU's debt capacity reflects the amount of debt WSSU could issue during the Study Period without exceeding its ceiling ratio for **debt to obligated resources**, after taking into account debt the General Assembly has previously approved that WSSU intends to issue during the Study Period. Details regarding each approved project are provided in Section 3.

This Institution Report also includes the following information required by the Act:

- WSSU's current debt profile, including project descriptions financed with, and the sources of repayment for, WSSU's outstanding debt;
- WSSU's current credit profile, along with recommendations for maintaining or improving WSSU's credit rating; and
- A copy of any WSSU debt management policy currently in effect.

Overview of WSSU

For the fall 2018 semester, WSSU had a headcount student population of approximately 5,190, including 4,741 undergraduate students and 449 graduate and doctoral students. During the 2018-19 academic year, WSSU employed approximately 358 full-time, part-time and temporary instructional faculty.

Over the past 5 years, WSSU's enrollment has remained consistent. WSSU's average age of plant (13.45 years) is lower than the median ratio for all Institutions (14.53 years). Age of plant is a financial ratio calculated by dividing the accumulated depreciation by the annual depreciation expense. A low age of plant generally indicates the institution is taking a sustainable approach to its deferred maintenance and reinvestment programs.

WSSU anticipates incurring approximately $15.0 million in additional debt during the Study Period, as summarized in **Section 3** below.

WSSU has made no changes to the financial model's standard growth assumptions, which are based on the Consumer Price Index for September 2019.

2. Institution Data

Notes

- Obligated Resources equals Available Funds plus an adjustment for any noncash charge relating to the implementation of GASB 68 & 75.
- Operating Expenses equals Operating Expenses plus an adjustment for any noncash charge relating to the implementation of GASB 68 & 75.
- Outstanding debt service is based on WSSU's outstanding debt **as of June 30, 2019**, excluding state appropriated debt (such as energy savings contracts). Debt service is net of any interest subsidies owed to WSSU by the federal government (discounted by an assumed 6.2% sequestration rate) and uses reasonable unhedged variable rate assumptions.
- New money debt issued **after June 30, 2019**, together with any legislatively approved debt WSSU expects to issue during the Study Period, **are included** in the model as "proposed debt service" and are taken into account in the projected financial ratios shown in this Institution Report.
- Repayments, redemptions or refundings that have occurred **after June 30, 2019** are not included in the model, meaning the debt service schedules reflected below may overstate WSSU's current debt burden.

1	2	3	4	5	6
Obligated Resources					
Fiscal Year	Available Funds (Before GASB Adjustment)	GASB 68 Adjustment	GASB 75 Adjustment	AF Growth	Available Funds (After GASB Adjustment)
2015	24,595,285	9,632,772	-		34,228,057
2016	29,086,951	7,361,483	-	6.49%	36,448,434
2017	33,966,030	7,964,039	-	15.04%	41,930,069
2018	(110,315,845)	8,823,189	142,615,754	-1.92%	41,123,098
2019	(111,176,370)	9,753,940	136,256,377	-15.29%	34,833,947
2020	35,426,124	-	-	1.70%	35,426,124
2021	36,028,368	-	-	1.70%	36,028,368
2022	36,640,850	-	-	1.70%	36,640,850
2023	37,263,745	-	-	1.70%	37,263,745
2024	37,897,229	-	-	1.70%	37,897,229

Operating Expenses					
Fiscal Year	Operating Exp.	GASB 68 Adjustment	GASB 75 Adjustment	Growth	Operating Exp.
2015	133,136,951	1,946,911	-		135,083,862
2016	133,168,052	2,278,481	-	0.27%	135,446,533
2017	141,152,759	(602,355)	-	3.77%	140,550,404
2018	138,486,736	(855,304)	955,061	-1.40%	138,586,493
2019	132,671,179	(1,360,043)	764,088	-4.70%	132,075,224
2020	134,320,503	-	-	1.70%	134,320,503
2021	136,603,951	-	-	1.70%	136,603,951
2022	138,926,219	-	-	1.70%	138,926,219
2023	141,287,964	-	-	1.70%	141,287,964
2024	143,689,860	-	-	1.70%	143,689,860

7	8	9	10	11
Outstanding Debt				
Fiscal Year	Principal	Net Interest	Debt Service	Principal Balance
2020	3,070,000	4,447,469	7,517,469	88,375,000
2021	3,220,000	4,308,160	7,528,160	85,155,000
2022	3,340,000	4,159,586	7,499,586	81,815,000
2023	3,515,000	3,991,986	7,506,986	78,300,000
2024	3,710,000	3,815,656	7,525,656	74,590,000
2025	3,905,000	3,640,110	7,545,110	70,685,000
2026	4,115,000	3,444,183	7,559,183	66,570,000
2027	4,315,000	3,243,990	7,558,990	62,255,000
2028	4,550,000	3,041,717	7,591,717	57,705,000
2029	4,775,000	2,828,487	7,603,487	52,930,000
2030	5,005,000	2,589,002	7,594,002	47,925,000
2031	5,250,000	2,350,098	7,600,098	42,675,000
2032	5,265,000	2,099,450	7,364,450	37,410,000
2033	5,515,000	1,848,188	7,363,188	31,895,000
2034	5,785,000	1,571,063	7,356,063	26,110,000
2035	4,465,000	1,289,925	5,754,925	21,645,000
2036	4,150,000	1,067,775	5,217,775	17,495,000
2037	2,045,000	862,131	2,907,131	15,450,000
2038	1,545,000	757,331	2,302,331	13,905,000
2039	1,620,000	678,206	2,298,206	12,285,000
2040	1,705,000	595,038	2,300,038	10,580,000
2041	1,790,000	507,700	2,297,700	8,790,000
2042	1,885,000	415,938	2,300,938	6,905,000
2043	1,980,000	319,244	2,299,244	4,925,000
2044	1,140,000	217,750	1,357,750	3,785,000
2045	1,200,000	159,250	1,359,250	2,585,000
2046	1,260,000	97,750	1,357,750	1,325,000
2047	1,325,000	33,125	1,358,125	-

Notes

- Expendable Resources equals Unrestricted Net Position plus Restricted, Expendable Net Position plus Foundation Unrestricted Net Position plus Foundation Temporarily Restricted Net Position minus Restricted, Expendable Net Position Restricted for Capital Projects.
- Unrestricted Net Position has been adjusted for any noncash charge relating to the implementation of GASB 68 & 75 during the projection period.

1	2	3	4	5	6	7	8	9
				Expendable Resources				
Fiscal Year	Unrestricted Net Position	Restricted, Expendable Net Position	Foundation Unrestricted Net Position	Foundation Temp Restricted Net Position	Less: Restricted, Expendable Net Position Restricted for Capital Projects	Growth	GASB 68 & 75 Adjustment	Expendable Resources
2015	(8,366,880)	16,493,922	691,722	11,603,010	2,895,367		9,632,772	27,159,179
2016	(3,732,269)	14,971,560	1,211,884	9,193,727	2,569,134	-2.66%	7,361,483	26,437,251
2017	(6,322,184)	18,461,527	509,227	10,118,981	3,718,523	2.18%	7,964,039	27,013,067
2018	(147,531,243)	25,725,860	1,024,512	11,973,237	7,184,425	29.90%	151,081,025	35,088,966
2019	(142,338,153)	25,350,839	1,965,857	12,684,874	4,045,994	11.64%	145,554,496	39,171,919
2020	3,271,021	25,781,803	1,999,277	12,900,517	4,114,776	1.70%	-	39,837,842
2021	3,326,628	26,220,094	2,033,264	13,119,826	4,184,727	1.70%	-	40,515,085
2022	3,383,181	26,665,836	2,067,830	13,342,863	4,255,867	1.70%	-	41,203,841
2023	3,440,695	27,119,155	2,102,983	13,569,691	4,328,217	1.70%	-	41,904,307
2024	3,499,187	27,580,180	2,138,734	13,800,376	4,401,797	1.70%	-	42,616,680

3. Proposed Debt Financings

The table below summarizes any legislatively approved projects that WSSU expects to finance during the Study Period. Using the assumptions outlined in the table below, the model has developed a tailored, but conservative, debt service schedule for each proposed financing and incorporated each pro forma debt service schedule into its calculations of the financial ratios as detailed in **Section 4** below.

WSSU Proposed Debt Financings

Year	Use of Funds	Borrowing Amount	Term	Source of Repayment
2021	Restore the Core II - Hauser Hall Renovation	$ 6,000,000	30	Debt Service Fee
2021	Restore the Core II - Physical Plant Renovation	$ 9,000,000	30	Debt Service Fee
Total		$ 15,000,000		

4. Financial Ratios

Debt to Obligated Resources

- **What does it measure?** WSSU's aggregate outstanding debt as compared to its obligated resources—the funds legally available to service its debt.
- **How is it calculated?** Aggregate debt divided by obligated resources*

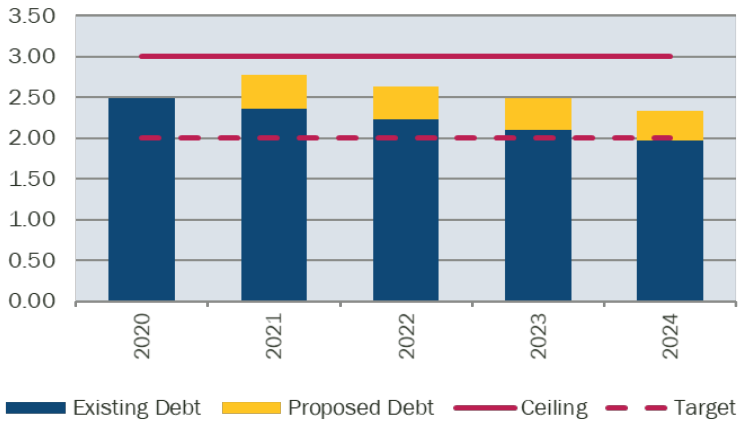
- Target Ratio: 2.00
- Ceiling Ratio: Not to exceed 3.00
- Projected 2020 Ratio: 2.49
- Highest Study Period Ratio: 2.49 (2020)

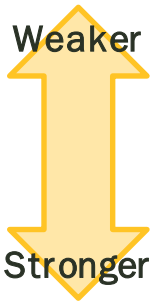
*Available Funds, which is the concept commonly used to capture an institution's obligated resources in its loan and bond documentation, has been used in the model as a proxy for obligated resources. For most institutions, the two concepts are identical, though Available Funds may include additional deductions for certain specifically pledged revenues, making it a conservative measure of an institution's obligated resources.

Debt to Obligated Resources

1	2	3	4	5	6	7	8
			Debt to Obligated Resources				
Fiscal Year	Obligated Resources	Growth	Existing Debt	Proposed Debt	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	35,426,124	1.70%	88,375,000	-	2.49	n/a	2.49
2021	36,028,368	1.70%	85,155,000	15,000,000	2.36	0.42	2.78
2022	36,640,850	1.70%	81,815,000	14,691,295	2.23	0.40	2.63
2023	37,263,745	1.70%	78,300,000	14,372,928	2.10	0.39	2.49
2024	37,897,229	1.70%	74,590,000	14,044,596	1.97	0.37	2.34

Debt to Obligated Resources





5-Year Payout Ratio Overview

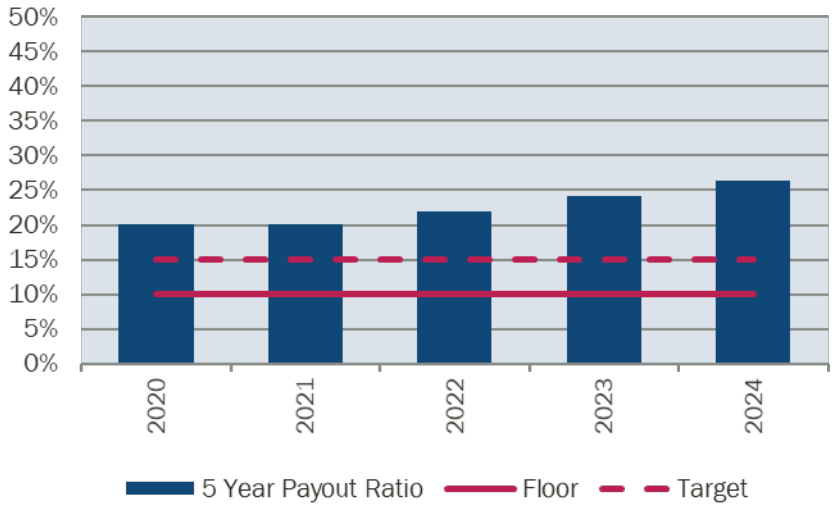
- **What does it measure?** The percentage of WSSU's debt scheduled to be retired in the next five years.
- **How is it calculated?** Aggregate principal to be paid in the next five years divided by aggregate debt

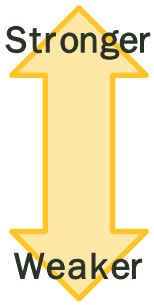
- Target Ratio: 15%
- Floor Ratio: Not less than 10%
- Projected 2020 Ratio: 20%
- Lowest Study Period Ratio: 20% (2020,2021)

5-Year Payout Ratio

1	2	3
	5 Year Payout Ratio	
Fiscal Year	Principal Balance	Ratio
2020	88,375,000	20%
2021	100,155,000	20%
2022	96,506,295	22%
2023	92,672,928	24%
2024	88,634,596	26%

5-Year Payout Ratio





Expendable Resources to Debt

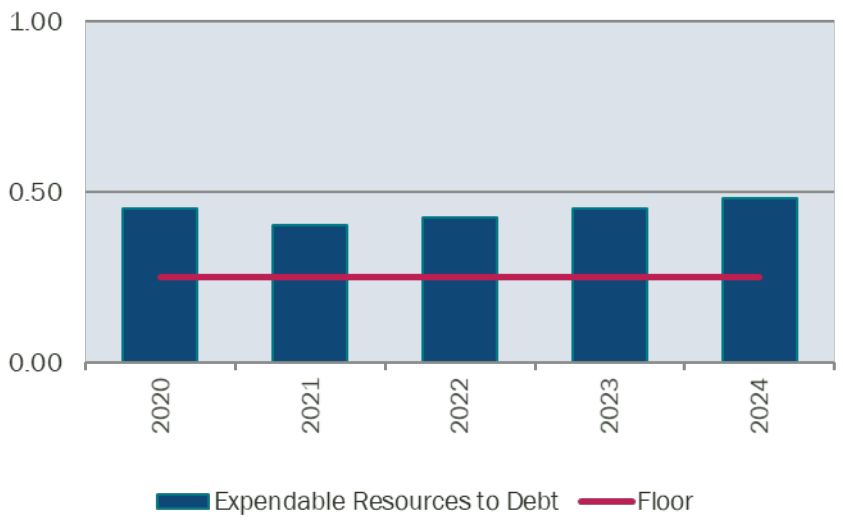
- **What does it measure?** The number of times WSSU's liquid and expendable net position covers its aggregate debt.
- **How is it calculated?** The sum of (1) Adjusted Unrestricted Net Position and (2) Restricted Expendable Net Position divided by aggregate debt

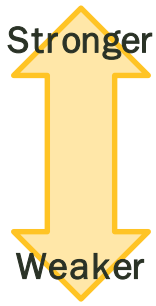
- Floor Ratio: Not less than 0.25x
- Projected 2020 Ratio: 0.45x
- Lowest Study Period Ratio: 0.40x (2021)

Expendable Resources to Debt

1	2	3	4	5	6	7
Expendable Resources to Debt						
Fiscal Year	Expendable Resources	Growth	Existing Balance	Proposed Balance	Existing Debt	Existing & Proposed Debt
2020	39,837,842	1.70%	88,375,000	-	0.45	0.45
2021	40,515,085	1.70%	85,155,000	15,000,000	0.48	0.40
2022	41,203,841	1.70%	81,815,000	14,691,295	0.50	0.43
2023	41,904,307	1.70%	78,300,000	14,372,928	0.54	0.45
2024	42,616,680	1.70%	74,590,000	14,044,596	0.57	0.48

Expendable Resources to Debt





Debt Service to Operating Expenses

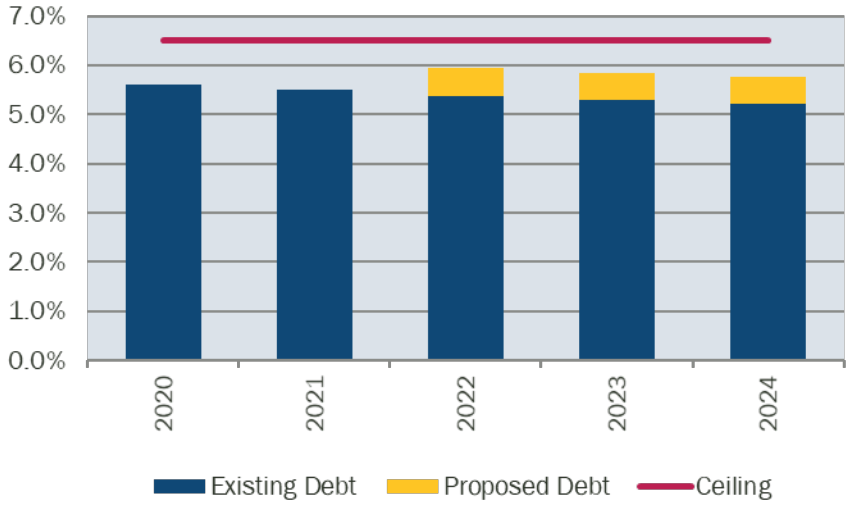
- **What does it measure?** WSSU's debt service burden as a percentage of its total expenses, which is used as the denominator because it is typically more stable than revenues.
- **How is it calculated?** Annual debt service divided by annual operating expenses (as adjusted to include interest expense of proposed debt)

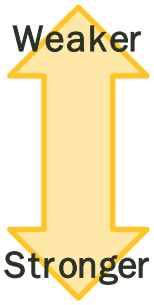
- Policy Ratio: Not to exceed 6.50%
- Projected 2020 Ratio: 5.60%
- Highest Study Period Ratio: 5.94% (2022)

Debt Service to Operating Expenses

1	2	3	4	5	6	7	8
Debt Service to Operating Expenses							
Fiscal Year	Operating Expenses	Growth	Existing Debt Service	Proposed Debt Service	Ratio - Existing	Ratio - Proposed	Ratio - Total
2020	134,320,503	1.70%	7,517,469	-	5.60%	n/a	5.60%
2021	136,603,951	1.70%	7,528,160	-	5.51%	n/a	5.51%
2022	139,395,719	1.70%	7,499,586	778,205	5.38%	0.56%	5.94%
2023	141,747,802	1.70%	7,506,986	778,205	5.30%	0.55%	5.85%
2024	144,139,732	1.70%	7,525,656	778,205	5.22%	0.54%	5.76%

Debt Service to Operating Expenses





5. Debt Capacity Calculation

Debt Capacity Calculation

- For the purposes of this Institution Report and the Study, WSSU's debt capacity is based on the amount of debt WSSU could issue during the Study Period (after taking into account any legislatively approved projects detailed in **Section 3** above) without exceeding its ceiling ratio for **debt to obligated resources**.
- As presented below, WSSU's 2021 debt capacity is the lowest in any single year during the Study Period.
- Based solely on the **debt to obligated resources** ratio, WSSU's current estimated debt capacity is **$17,903,372.** After taking into account any legislatively approved projects detailed in **Section 3** above, if WSSU issued no additional debt until the last year of the Study Period, then WSSU's debt capacity for 2024 is projected to increase to **$25,057,090.**

1	2	3	4
	Debt Capacity Calculation		
Fiscal Year	Debt to Obligated Resources (Current Ratio)	Debt to Obligated Resources (Ceiling)	Debt Capacity Calculation
2020	2.49	3.00	17,903,372
2021	2.78	3.00	7,930,105
2022	2.63	3.00	13,416,256
2023	2.49	3.00	19,118,307
2024	2.34	3.00	25,057,090

Limitations on Debt Capacity and Credit Rating Implications

- The debt capacity calculation shown above provides a general indication of WSSU's ability to absorb debt on its balance sheet during the Study Period and may help identify trends and issues over time.
- "**Debt capacity**" <u>does not</u> necessarily equate to "**debt affordability**," which takes into account a number of quantitative and qualitative factors, including project revenues and expenses, cost of funds and competing strategic priorities.
- Projecting the exact amount WSSU could issue during the Study Period without negatively impacting its credit rating is difficult for a number of reasons.
  - **<u>Use of Multiple Factors</u>**
    - Any single financial ratio makes up only a fraction of the "scorecard" used by rating agencies to guide their credit analysis.
    - Under Moody's approach, for example, the **financial leverage ratio** accounts for only **10%** of an issuer's overall score.
  - **<u>The State's Impact</u>**
    - In assessing each institution's credit rating, rating agencies also consider the State's credit rating and demographic trends, the health of its pension system, the level of support it has historically provided to the institution, and any legislation or policies affecting campus operations.

        - Historically, each institution's credit rating has been bolstered by the State's strong support and overall financial health. As a result, many institutions "underperform" relative to the national median ratios for their rating category.
        - If "debt capacity" were linked to those national median ratios, many institutions would have limited debt capacity for an extended period of time.
    - **Factor Interdependence**
        - The quantitative and qualitative factors interact with one another in ways that are difficult to predict.
        - For example, a university's "**strategic positioning**" score, which accounts for 10% of its overall score under Moody's criteria, could deteriorate if a university either (1) issued excessive debt or (2) failed to reinvest in its campus to address its deferred maintenance obligations.
    - **Distortions Across Rating Categories**
        - Because quantitative ratios account for only a portion of an issuer's final rating, the national median for any single ratio is not perfectly correlated to rating outcomes, meaning the median ratio for a lower rating category may be more stringent than the median ratio for a higher rating category. For the highest and lowest rating categories, the correlation between any single ratio and rating outcomes becomes even weaker.
        - Tying capacity directly to ratings may also distort strategic objectives. For example, an institution may be penalized for improving its rating, as it may suddenly lose all of its debt capacity because it must now comply with a much more stringent ratio.

6. Debt Profile

WSSU's detailed debt profile, including a brief description of each financed project and the source of repayment for each outstanding debt obligation, is reflected in the table on the following page.

Summary of Debt Outstanding as of FYE June 30, 2019

Series	Description	Par Outstanding	Final Maturity	Use of Funds	Refunding	Source of Repayment
2006D	Certificate of Participation	2,105,000	5/25/2031	Bowman-Gray Fieldhouse		Student Debt Service Fee
Series 2008A	UNC System Pool Revenue Bonds	520,000	10/1/2020	Brown Hall Renovations		Housing Revenues
				Civitan Park Athletic Upgrade		Student Debt Service Fee
Series 2013	General Revenue Bonds	28,720,000	4/1/2043	Housing Renovations	2002	Housing Revenues
				Martin-Shexnider Residence Hall		Housing Revenues
				Wilson Hall	1998	Housing Revenues
				Student Success Center		Student Debt Service Fee
				North Campus Project		Student Debt Service Fee
				Donald Reaves Center		Student Debt Service Fee
Series 2014	Refunding LOBs	23,435,000	6/1/2036	Rams Commons	2004	Housing Revenues
				Hairston Gleason Residence Hall		Housing Revenues
Series 2016	Refunding LOBs	11,755,000	6/1/2036	Foundation Heights Residence Hall	2006	Housing Revenues
Series 2017	General Revenue Bonds	24,910,000	10/1/2046	Residence Hall - Freshman Living Learning		Housing Revenues
				Brown Hall Renovations	2008A	Housing Revenues
				Civitan Park Athletic Upgrade	2008A	Student Debt Service Fee
Total		91,445,000				

Approved by the UNC Board of Governors on May 20, 2020

7. Credit Profile

The following page provides a snapshot of WSSU's current credit ratings, along with (1) a summary of various credit factors identified in WSSU's most recent rating report and (2) recommendations for maintaining and improving WSSU's credit ratings in the future.

Credit Profile of the University – (General Revenue)

Overview

- Moody's maintains an A3 rating on WSSU's general revenue bonds. The outlook is stable.
- Standard and Poor's downgraded WSSU's general revenue bonds to a BBB+ rating. The outlook is stable.

Moody's	S&P	Fitch
Aaa	AAA	AAA
Aa1	AA+	AA+
Aa2	AA	AA
Aa3	AA-	AA-
A1	A+	A+
A2	A	A
A3	A-	A-
Baa1	BBB+	BBB+
Baa2	BBB	BBB
Baa3	BBB-	BBB-

Non Investment Grade

Key Information Noted in Reports

Credit Strengths

- Healthy operating and capital support from State of North Carolina representing about 50% of total revenue which is strong relative to similarly rated peers
- Expected to maintain stable liquidity and sufficient excess cash flow
- Receives comprehensive oversight and regular monitoring of operations and liquidity from the System Office

Credit Challenges

- University maintains relatively thing cash flow margins and modest liquidity
- High geographic concentration, with over 90% of students in-state, creates exposure to shifting conditions within North Carolina
- Near break even operating performance provides narrow cushion to increasing debt service commitments

Recommendations & Observations

- Continue to develop and implement strategies and policies to meet WSSU's unique challenges, including strategies to stabilize and improve enrollment and revenue.

Approved by the UNC Board of Governors on May 20, 2020

8. Peer Comparison

Moody's Key Credit Ratios	Winston Salem State University	Peer Institutions FY2019				Moody's Public Higher Education Medians
Fiscal Year	2018	William Paterson University of New Jersey	Morgan State University	University of Louisville	University of Northern Colorado	
Most Senior Rating	A3	A2	A1	A3	A3	A3
Total Debt ($, in millions)	136	184	46	393	153	34
Total Cash & Investments ($, in millions)	80	106	138	803	170	52
Operating Revenue ($, in millions)	132	225	219	971	213	58
Operating Expenses ($, in millions)	129	232	223	1012	220	55
Market Performance Ratios						
Annual Change in Operating Revenue (%)	0.8%	6.8%	0.4%	-6.9%	3.9%	-2.4%
Operating Ratios						
Operating Cash Flow Margin (%)	9.7%	5.1%	8.6%	1.9%	7.3%	11.0%
Wealth & Liquidity Ratios						
Total Cash & Investments to Operating Expenses (x)	0.6	0.5	0.6	0.8	0.8	0.7
Total Debt to Operating Expenses (x)	1.1	0.8	0.2	0.4	0.7	0.6
Monthly Days Cash on Hand (x)	33	131	172	35	72	136
Leverage Ratios						
Total Cash & Investments to Total Debt (x)	0.6	0.6	3.0	2.0	1.1	1.5
Debt Service to Operating Expenses (%)	4.7%	6.1%	3.5%	3.5%	4.5%	5.1%
Total Debt-to-Cash Flow (x)	10.7	16.1	2.5	21.2	9.7	4.6

Approved by the UNC Board of Governors on May 20, 2020

Debt Management Policies

WSSU's current debt policy is attached.

WINSTON-SALEM
STATE UNIVERSITY

DEBT CAPACITY POLICY

I. SUMMARY

Debt financing, especially tax-exempt debt, provides a low cost source of capital for the Winston-Salem State University (University) to fund capital investments to achieve its mission and strategic objectives. Indeed, as the economic landscape continues to evolve and change, the use of debt will become an increasingly important tool that enables the University to move its strategy forward. In this environment, appropriate financial leverage plays a key role and is considered a long-term component of the University's balance sheet. Given that the University has limited debt repayment resources, the allocation of and management of debt is a limited resource. The guidelines provided in this document are the framework by which decisions will be made regarding the issuance of debt to finance particular capital improvements.

II. AUTHORITY

North Carolina General Statutes Chapter J 160 Article 3 authorize the Board of Governors of the University of North Carolina (the Board) to issue special obligation bonds for improvements to the facilities of the University of North Carolina System.

Prior to a bond issue, the Board designates the capital improvements financed as "special obligation bond projects" and the University's Board of Trustees approves the issuance of special obligation bonds for those projects.

The State Energy Conservation Finance Act. Article 8 of Chapter 142 of the North Carolina General Statutes authorizes the Board to solicit and through G.S. 143-64.J 7A. finance guaranteed energy conservation measures. These financing agreements must have the approval of the Office of State Budget and Management, the State Treasurer, and Counsel of State prior to closing.

III. CRITERIA

The University's debt capacity is a limited resource. Only projects that relate to the mission of the University, directly or indirectly, will be considered for debt financing. In general, projects that will be approved are broader in scope than college, or unit-based projects. However, certain mission-critical school-based projects can also receive approval.

State funding and philanthropy are expected to remain major sources of financing for the University's capital projects. In assessing the possible use of debt, all other financing and revenue sources will be considered. State appropriations and bonds, philanthropy, project-generating revenues, research facilities and administration cost reimbursement, expendable reserves, and

other sources are expected to finance a portion of the cost of a project. Debt is to be used conservatively and strategically.

Projects financed through a bonding program will have received approval through the NC State Legislature annual non-appropriated capital improvements bill and will have been designated as "special obligation projects" by the North Carolina Board of Governors. Energy conservation measures will have received state agency approval as required.

A project that has a related revenue stream (self-liquidating project) will receive priority consideration. For these projects, the use of debt must be supported by an achievable financial plan that includes servicing the debt, including interest expense, financing related infrastructure and utilities, meeting any new or increased operating costs (including security applications), and providing for appropriate replacement and renovation costs. Energy conservation measures must show that savings will be adequate to service the debt and an annual monitoring costs. Other projects funded by budgetary savings, gifts, and grants will be considered on a case by case basis. Any projects that will require gift financing, or include a gift financing component, must be jointly approved by the Vice Chancellor for University Advancement and the Vice Chancellor for Finance and Administration before approaching any prospective donors about gifts to the project. In all cases, institutional strategy and not donor capacity must drive the decision to build a project.

IV. MAINTENANCE OF CREDIT RATING

Maintaining a high credit rating will permit the University to continue to issue debt and finance capital projects at favorable interest rates while meeting its strategic objectives. While the University's decision to issue additional debt will be primarily focused on the strategic importance of the new capital improvements, the potential impact of a change in credit rating will also be reviewed. The University recognizes that external economic, natural, or other events may from time to time affect the creditworthiness of its debt. Nevertheless, the University is committed to ensuring that actions within its control are prudent. Management will provide the rating agencies with full and timely access to required information. The University currently receives credit ratings from Standard and Poor's Financial Services and Moody's Investor Services.

V. METHODS OF SALE

The standard methods of sale are competitive, negotiated and private placement. University management will evaluate each method of sale and determine the best type for each bond issue.

VI. FINANCING TEAM PROFESSIONALS

Selection of financing team professionals will be accomplished based on guidance from UNC General Administration, Bond Counsel, Financial Advisor (if needed) and Underwriter pool will be selected using appropriate contractual processes.

VII. REFUNDING

Refunding and/or restructuring opportunities will be evaluated on a regular basis. Costs incurred by the refunding activity will be taken into consideration with a target of 3% present value savings. The University will also consider refinancing for other strategic reasons including the elimination of certain limitations, covenants, payment obligations or reserve requirements that reduce flexibility.

VIII. ARBITRAGE

The University will comply with federal arbitrage requirements on invested tax-exempt bond proceeds, causing arbitrage rebate calculations to be performed annually and rebate payments to be remitted to the IRS periodically as required. The University currently uses Bingham Arbitrage Rebate Services (third party) to compute any arbitrage liability.

IX. TYPES OF INSTRUMENTS

Tax-exempt debt - The University recognizes the benefits associated with tax- exempt debt, and therefore will manage the tax-exempt portfolio to maximize the use of tax-exempt debt subject to changing conditions and changes in tax law.

Construction Bridge Loans – Due to timing, the need to begin a project and receipt bond proceeds does not always coincide. Therefore, there may be a need for temporary financing (normally a note payable) until the bond proceeds are received. The University will solicit bids from financial institutions and will accept the bid that offers the lowest costs (interest, fees, etc.) that also provides the most flexibility in repayment.

X. MATURITY AND DEBT SERVICE

The useful life of the capital project financed will be taken into consideration when determining the length of financing. No capital project will be financed for more than 120% of its useful life. Call features should be structured to provide the highest degree of flexibility relative to cost. Structure of debt service will take into consideration existing debt and future capital plans. In addition, the University's amortization of debt service may be spread along the full yield curve depending on market conditions.

XI. DISCLOSURES AND COMPLIANCE

Annually, the University will review compliance with covenants and requirements under outstanding bond indentures. The University will continue to meet its ongoing disclosure requirements in accordance with SEC rule 15c2-12. The University will submit financial reports, statistical data, and any other material events as required under outstanding bond indentures. The University will comply with arbitrage requirements on invested bond funds. The University will comply with Internal Revenue Service rules related to private use and use of proceeds on tax-exempt debt.

XII. USE OF BENCHMARKS AND DEBT RATIOS

The Current Operations and Capital Improvements Appropriations Act of 2015, which was signed into law on September 18, 2015 added a new Article 5 to Chapter 116D of the General Statutes of North Carolina (the "Act"), requiring the University to provide to the UNC Board of Governors with an annual report on its current and anticipated debt levels. The Act expressly requires the University to report on two ratios – **debt to obligated resources** and a **five-year payout ratio.** The UNC Board of Governors has also required the University to provide two supplementary ratios to measure the University's debt burden – **expendable resources to debt** and **debt service to operating expenses**. In setting its target, the University considered a number of quantitative and qualitative factors, including comparisons to its designated peer institutions, its strategic initiatives, its historical results, its average age of plant and its recent and projected growth.

The **debt to obligated resources** compares outstanding debt to the funds legally available to service its debt. This provides a general indication of the University's ability to repay debt from wealth that can be accessed over time. This ratio is tied to the statutory framework for University debt. *The target ratio for the University is 2.0 with a ceiling of 3.0.*

The **five-year payout** measures the percentage of University debt to be retired within the subsequent five year period. This ratio indicates how rapidly the University's debt is amortizing and how much additional debt capacity may be created in the near term. *The target ratio for the University is 15% with a floor of 10.0%.*

The **debt service to operations** measures debt service burden as a percentage of University total operating expenses. This ratio indicates the University's operating flexibility to finance existing requirements and new initiatives. Expenses are used rather than revenues because expenses tend to be more stable year-over-year. *The target ratio for the University is 6.5%.*

The **expendable resources to debt** measures the number of times the University's liquid and expendable net assets covers its aggregate debt. This ratio provides a general indication of the University's ability to repay debt from wealth that can be accessed over time. *The target ratio for the University is 0.25.*

Effective Date: This policy becomes effective upon adoption by the Board of Trustees.

Adopted: December 9, 2016

William U. Harris
Chairman, Board of Trustees
Winston-Salem State University

Scott F. Wierman
Secretary, Board of Trustees
Winston-Salem State University