### Key Points

- By conducting an environmental analysis, a college can identify goals to pursue by evaluating where performance improvement and adaptation to changing conditions may be necessary.

- This best practice recommends that when conducting a financial analysis, a college should review its current revenue and expenditure structure and long-term financial position. The analysis of current revenue and expenses includes identifying basic composition of revenues, cost per credit hour across disciplines, operating and maintenance cost of capital assets, secondary indicators of financial health, and historical changes in its revenue base. When forecasting its revenue and expenditures, a college should first consult existing master plans and account for uncertainty. When performing the forecast, a college should use a quantitative model and document any assumptions made. A college should regularly check the forecasted figures against actual results and adjust the forecast method as needed.

- When reviewing student performance, a college should use cross-sectional analysis and longitudinal studies. Cross-sectional analysis examines data at a point in time, while longitudinal analysis examines student outcomes over time and is particularly useful for finding where students encounter difficulties and/or drop out.

- A college should review its internal capability with respect to key factors that support student achievement. This best practice recommends the analysis address issues related to human resource capacity, student needs and integrated support for student services, and acceleration of remedial students.

- The environmental analysis should also review external forces that have an important influence on a college’s budget, such as competition from other colleges, labor market demand, stakeholder perception, and state and federal legislation.

### Related Award Program Criteria

- **Criterion 1.B.1: Cost Structure Analysis.** The applicant submits an analysis of its cost structure as supplementary materials. In the award application, the applicant explains why it chose the particular analytical techniques it has employed and what insights it gained.

- **Criterion 1.B.2: Long-Range Financial Forecast (Mandatory).** Long-range revenue and expenditure forecasts are presented in the budget document along with discussion of implications for organizational performance.
Introduction

The budgeting and planning process must be informed by an analysis of forces and factors, internal and external to a college’s organization, that have implications for the college’s current and future performance. An analysis of the college’s environment makes at least two critical contributions to the budgeting and planning process. First, with respect to goal setting, the environmental analysis suggests where it may be necessary to improve performance and adapt to changing conditions. This analysis can be used to better inform the goal-setting process. Second, the environmental analysis can help the college identify root causes of challenges it faces to reaching those goals. A college should perform a root cause analysis of the challenges it faces in reaching its goals in order to learn the underlying cause of each challenge and to develop the most effective solutions. These two uses of the environmental analysis will ultimately allow the college to quantify the impact of internal and external forces in the form of budgetary allocations.

This best practice describes the recommended elements of a thorough analysis of the environment, including:

I. Financial analysis. This includes analyzing the college’s cost and revenue structure as well as making long-term forecasts.

II. Student performance. Understanding current levels of student performance is a critical prerequisite to setting performance goals.

III. Internal capabilities. An environmental analysis should examine the college’s internal capability with respect to key factors that support student achievement.

IV. External influences. A college must also be aware of forces emanating from outside its organization.
I. Financial Analysis

A financial analysis provides insight into the current and prospective future financial position of the college. This best practice identifies two essential components of a financial analysis: analysis of current revenue and expenditure structure and long-term forecasts.

Analysis of Current Revenue and Expenditure Structure

**Background.** Most fundamentally, a college must understand its basic revenue and expenditure structures. Analysis of revenues and expenditures can take on a number of different forms.

**Recommendation.** A college should conduct the following forms of revenue and expenditure analysis.

- **Basic composition.** For revenues, this includes identifying what portion of the budget is funded by state-shared revenues versus revenues that are generated locally, and how much of the budget is funded by grants and fees. For expenditures, a college needs to understand the cost and staffing for each of its subunits (e.g., campuses, departments, programs).

- **Cost per credit hour across disciplines.** Some classes cost more than others, which may have implications for the cost of expanding offerings or for how the tuition/fee structure is developed.

- **Full cost of capital assets.** A college needs to be aware of not only the potential long-range capital costs for new assets required by their operations (e.g., adding faculty may require more offices), but also the cost to operate these assets over their life cycle. For example, construction of a learning commons may entail material operating costs.

- **Secondary indicators of financial health.** A college should also examine data outside of revenue and expenditure figures that indicate its financial position. Foremost, students drive demand for services from a college, so a college should understand the types of students it serves. For instance, some types of students may cost more to support that others (e.g., remedial vs. non-remedial) or may have different revenue implications (e.g., degree vs. non-degree).

- **Revenue base.** The college may examine historical changes in tuition rates compared to inflation and to changes in the college’s cost structure, for example. A college might also compare tuition with other educational alternatives available to students. A college with significant property tax funding should examine historical changes in rates and actual taxpayer bills, along with the tax burden posed by the college compared with the tax burden created by similar colleges.

Long-Term Forecasts

**Background.** A college should develop long-term projections (i.e., typically three to five years into the future) of revenues, expenditures, enrollment, and other factors. Long-term forecasts help a college think more strategically about its budgeting and planning.

**Recommendation.** A number of specific techniques can be used by a college to make long-term forecasts, but the following guidelines should be incorporated regardless of the forecasting technique used.

- **Use a quantitative model.** Quantitative models generally outperform expert judgment when it comes to forecasting. However, the quantitative model need not be complex to be useful — in fact, simpler models often perform just as well, if not better than complex ones, and are easier to maintain and to explain to an audience. The forecaster’s judgment still plays an essential role in forecasting, but should be judiciously applied.

- **Document assumptions.** The assumptions behind the forecast should be documented. This makes the forecasting process more transparent. It also provides an opportunity for learning as the forecasters can check the accuracy of their assumptions and adjust their approach to compensate for errors.

- **Examine existing master plans.** A college may have adopted master plans covering facilities, information technology, human resources, and other areas. These plans may suggest the need for certain expenditures and should be included in a college’s forecasts.

- **Account for uncertainty.** Forecasts are inherently uncertain and the degree of uncertainty typically increases the further the forecaster looks into the future. The degree of uncertainty can be reduced by using better forecasting techniques, but uncertainty can never be eliminated. Accordingly, forecasters must accept that uncertainty exists,
assess the level of uncertainty in the forecast, and effectively communicate it to others.  

- **Check and adjust the forecast.** Forecasts should be regularly checked against actual results and the forecast methodology adjusted to learn from experience. GFOA’s experience and research suggests that this is one of the most crucial yet seldom performed parts of the forecasting process.

### II. Student Performance

**Background.** A college should collect data and use it to evaluate and manage the services it provides. Cross-sectional analysis and longitudinal studies are the two primary ways to analyze student performance.

Cross-sectional analysis examines data at a point in time and has the advantage of being easy to conduct, while still yielding useful insights. For example, one college learned that students were postponing required math courses until the end of their course of study, some of which had to be taken sequentially. This resulted in delays in graduation that could have been avoided had the classes been taken earlier.

Longitudinal analysis examines student outcomes over time and is particularly useful for finding where students encounter difficulties and/or drop out. This is done by tracking entering students each year and their success in meeting key milestones on the way to a “terminal” accomplishment, such as completing a certificate or degree or transferring to a baccalaureate institution. Milestones are measurable educational achievements that include the conventional terminal accomplishments, but also intermediate outcomes, such as completing developmental education, passing college-level math and English, and persisting from term to term.

**Recommendation.** A college should use both cross-sectional and longitudinal analysis of student performance. The following additional considerations apply to analyzing student data.

- **Disaggregate.** For both cross-sectional and longitudinal analysis (but particularly longitudinal analysis), a college should consider disaggregating data in order to learn more about the performance of different segments of the student population. Key dimensions to disaggregate include age, race, gender, and income. Other dimensions may also be informative, such as full- versus part-time enrollment for students’ first term.

- **Use existing practices as a starting point.** A college should consider using existing measurement requirements or practices as a starting point for student achievement analysis. These requirements can establish a foundation for what is to be assessed and how it is to be measured. Measurement requirements or practices may also make it possible for a college to compare its student achievement to similar colleges elsewhere. Relative performance data help guide the process of establishing goals.

- **Capture information across the college experience.** The measurements that a college tracks to analyze student performance should capture information across the range of the student body’s college experience, accommodating students’ different starting points and goals. Examples of such measures could include:
  - Developmental education progress (e.g., completion of college-level math or English/reading course; completion of developmental education).
  - Two-year metrics (e.g., retention; completion of target number of units).
  - Completion/transfer (e.g., percentage of students transferring to four-year institutions; percentage of students completing certificates; percentage of students completing associate degrees).
  - Six-year metrics (e.g., percentage of students who completed/transferred after six years; percentage who left with no award; percentage still enrolled).

- **Track other measures relevant to the college’s particular circumstances.** A college may track other measures that are relevant to its

---

**A Model Measurement System**

The American Association of Community Colleges offers a framework of measures that were developed by and for community colleges specifically. Information on the Voluntary Framework of Accountability, including technical guidance, can be found at the association’s website — http://vfa.aacc.nche.edu.
III. Internal Capabilities

Background. A college’s internal capabilities as an organization are one of the most important determinants of student success. A college should examine the facets of organizational capacity that have the biggest potential impact on student success and its budget.

Recommendation. A college should analyze its internal capabilities as related to the following issues:

- **Human resource capacity.** Staff members are a primary component of an effective college. However, many, if not most, positions may be part-time or adjunct, resulting in distinctive human capital development challenges. Accordingly, a college should analyze its human resource capacity so that it can direct investments in human capital wisely. For example, a college should examine the level of support for professional development, particularly that which helps part-time and adjunct professors become better teachers for academically unprepared students and/or those from minority populations. A college might also look at how teaching talent is aligned with student demand. For instance, how do course offerings and instructor skills match up with the courses students demand?

- **Student needs and integrated support for student services.** Community colleges are accessible institutions that must fit the needs and schedules of a wide variety of students. Consequently, challenges can arise when advising and supporting such a diverse audience. A college should examine how it provides integrated support for students so that it can develop and fund new or different support services as need arises. This might include, for example, the program of study structure. Degree, certificate, and transfer preparation programs should outline courses that students are expected to take, including: core elements, sequencing requirements, and where applicable, corresponding electives. A college should also analyze its non-academic support system, focusing on what students need to succeed and whether they are getting it. For example, students might require additional assistance with developing college success skills, clarifying personal goals, researching financial aid options, or obtaining social services.

IV. External Influencers

Background. Colleges are subject to a variety of outside forces that can have an important influence on the budget.

Recommendation. A college should consider at least the following three factors when assessing external influencers:

- **Labor market analysis.** Labor market analysis looks at potential employers’ demand for the skills that the college teaches — or could be teaching — its students. Labor market data can be used to decide which programs to offer and how many graduates the college should try to produce, assess the college’s success in helping students succeed in the labor market, help students make informed choices about which programs to enter based on the availability and compensation of employment, and advocate for the college by demonstrating positive employment outcomes for its graduates. More precise analysis can even identify the point at which students have taken a sufficient number of credits to make a material impact on their subsequent earnings in the labor force.

- **Gathering stakeholder perceptions.** A college should also gather more qualitative information on stakeholder perceptions. For example, a college should regularly conduct surveys and focus groups
with students, faculty, and staff to identify strengths and weaknesses in programs and services as well as opportunities for improvement. Discussions with employers can also be helpful for gaining a deeper understanding of how to match the college’s services with the labor market.

- **State and federal legislation.** Colleges are subject to state and federal legislation that impacts operations and as a precautionary measure, a college should take appropriate steps to become aware of new or changing legislation that could impact its budget.

### Endnotes

1. Simply looking at rates may provide a misleading view of the tax burden on the community if property values have been changing significantly.
3. See Spyros Makridakis and Michele Hibon, “The M-3 Competition: Results, Conclusions, and Implications,” *International Journal of Forecasting* 16 (2000) 451-476. The “M Competitions” were a series of three forecasting accuracy tests conducted over almost a 20-year period by Makridakis and various colleagues. The results have been widely studied, replicated, and cited.
5. Armstrong, *Principles of Forecasting*.
11. Leinbach and Jenkins, “Using Longitudinal Data to Increase Community College Student Success.”