

The Higher Education Budgeting Primer

Tarleton State University

Tye Minckler, Ed.D., CMA, CEFP

Lori Beaty, MBA, CPA

July 2017

Updated February 2018

This brief overview of the financial context surrounding public higher education is essential background for university faculty and leaders. Understanding the general ideas in this document, along with some specific information about Tarleton State University, will help the reader appreciate the larger challenge facing higher education today. In addition, the appendices will be especially helpful to those who are responsible for university budgets. There are other resources (some of which are listed at the end of the document) for those wanting to learn more, but this primer is kept intentionally short to aid in accessibility.

Funding sources

Most public universities have multiple sources of funding such as state appropriations, research grants, and local funds. Texas universities also have Higher Education Funds (HEF) or Permanent University Funds (PUF), which are endowments set up by the State to support annual capital needs. Each funding source is subject to specific rules on how it may be used, which in turn requires universities to utilize “fund accounting” to maintain separate accounts for each source and not mix sources.

- State appropriations are often referred to as Educational & General (E&G) funds. E&G funds come from the State of Texas either as funds appropriated by the legislature or as funds collected by the university on behalf of the State (e.g., statutory tuition—also known as dedicated tuition, laboratory fees, and revenue from state-funded programs). State funds are primarily used for salaries because the state pays ~75% of the benefits associated with those salaries.
- Local Funds are collected locally by the university. There are five primary types of local funds in order of least to most restricted:

- Interest/investment income – generated on reserves (that is, interest on savings and unrestricted endowments).
- USF (University Services Fee) – a general student fee for support of university operations.
- Designated funds – used for specific purposes defined by the Board of Regents. These funds primarily come from tuition and fees paid by students who attend Tarleton State University. They also include fees related to conferences and events. Expenditures must support the educational mission of the university.
- Auxiliary funds – from business enterprises that provide services to students, faculty, and staff (and external customers). These enterprises must be self-supporting. Examples include: Athletics, Dining Services, Recreational Sports, and Residence Halls. These units generate their own income to cover expenses related to the services they provide and may also provide additional funds for university operations (in the form of commission from dining services, or residual income from residence halls as debt is paid down). Any commission or residual income is unrestricted.
- Restricted funds – set up for specific purposes as defined by donors or agencies outside of the university. Examples include Contracts & Grants, Gifts, Scholarships, and Restricted Endowments. Expenditures must comply with the intent of the donor or other outside agency as defined in the original agreement.

Universities also receive federal funds on behalf of students who obtain federal financial aid to pay tuition.

Funding trends

Of increasing concern to students, families, and legislators is the rapid increase in tuition over the past decades. The graph from dshort.com (Figure 1) has been referenced by many to point out the problem with tuition growth.

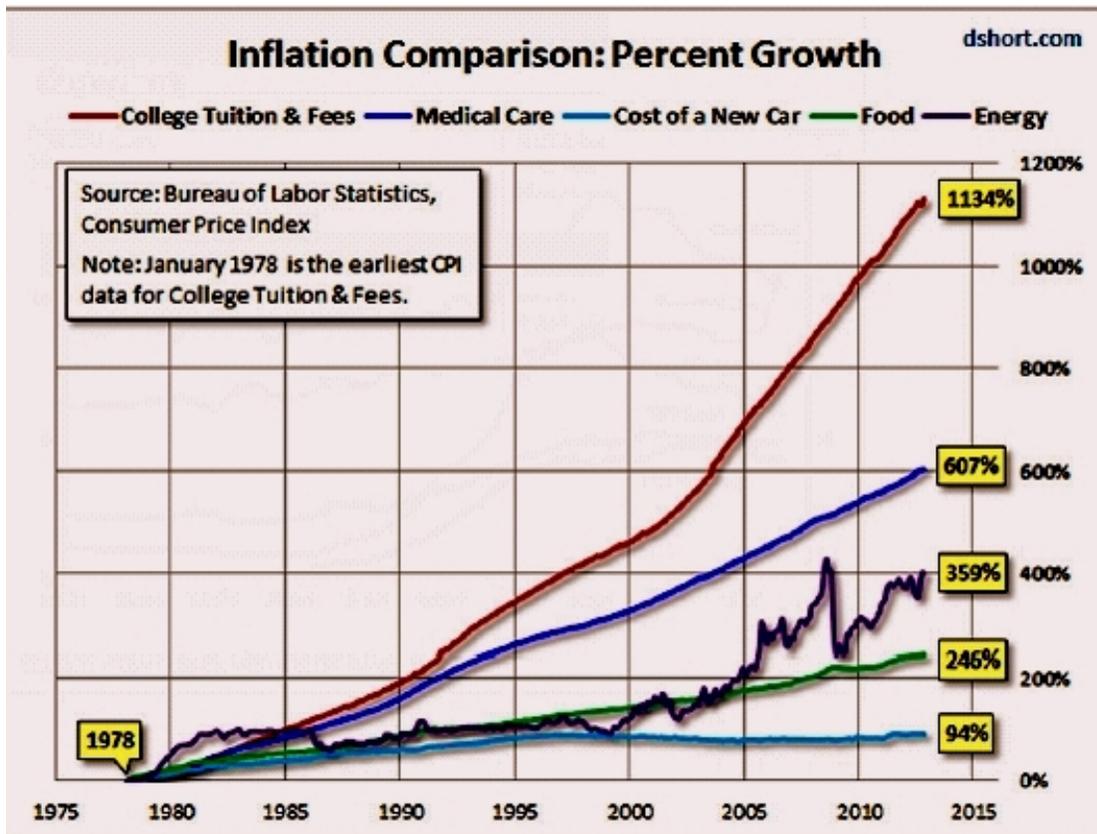


Figure 1. Inflation Comparison.

However, contrary to popular myth, the rapid increase in tuition over the past decades has not been due to out-of-control university costs or administrative bloat. Studies of higher education costs have demonstrated that administrator salaries are not the problem. Nor are faculty salary increases driving the tuition increases (Desrochers & Kirshstein, 2014). Though the full explanation of tuition increases is complex, a primary driver is the decrease in state appropriation support.

State appropriations for higher education per full-time student equivalent (FTSE) have been decreasing across the country (SHEEO, 2016):

- Almost 1% per year nationally over the past 25 years
- 2.4% decrease nationally, from 2010 to 2015
- 20% decrease in Texas, 2010 to 2015 (see Figure 2, SHEEO (2016))

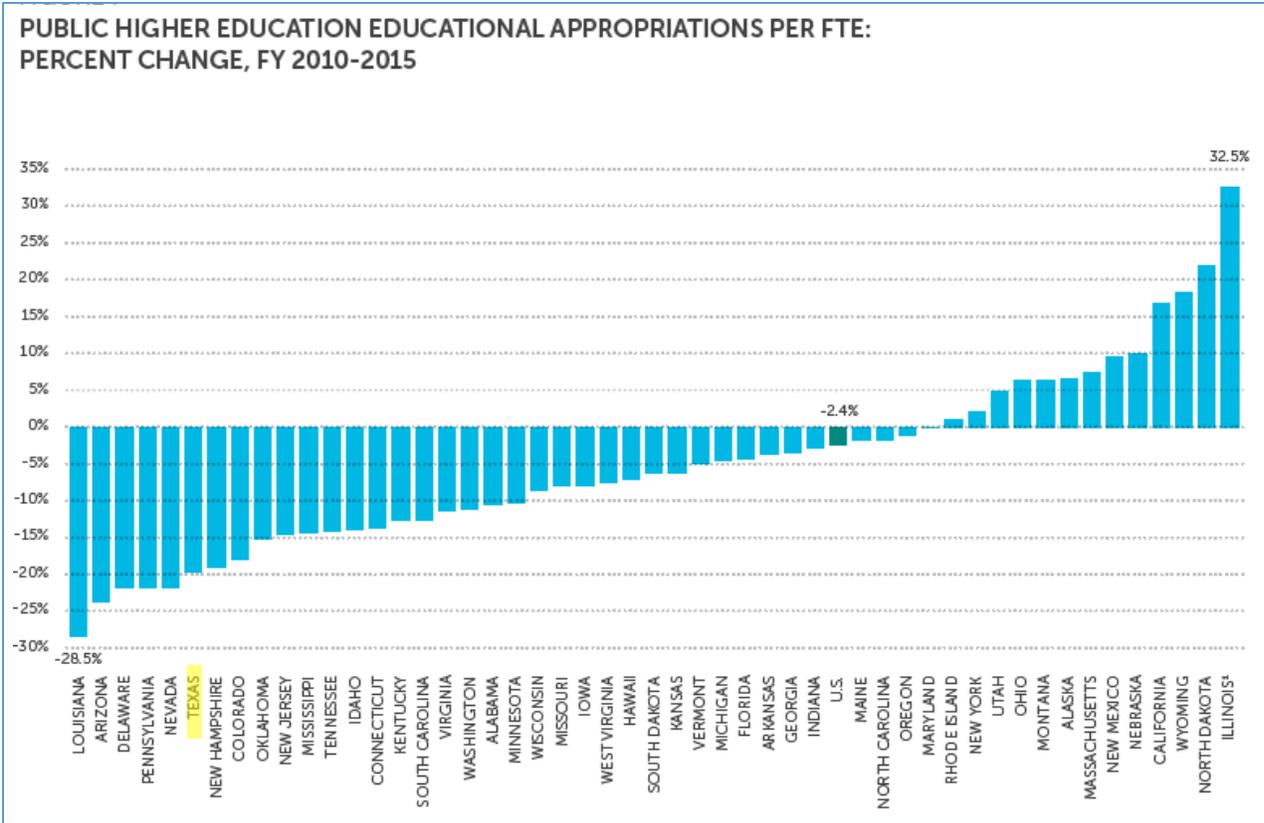


Figure 2. Public Higher Education Educational Appropriations per Full-Time Student Equivalent.

In any given year and for any given state, education appropriations have varied significantly. However, the long-term trend is clear: state support has declined over the past decades and has caused most public universities to increase tuition to make up the difference. Nationally, public universities now receive almost half of education revenue from tuition, up from 25% in 1990 (SHEEO, 2016), as shown in Figure 3.

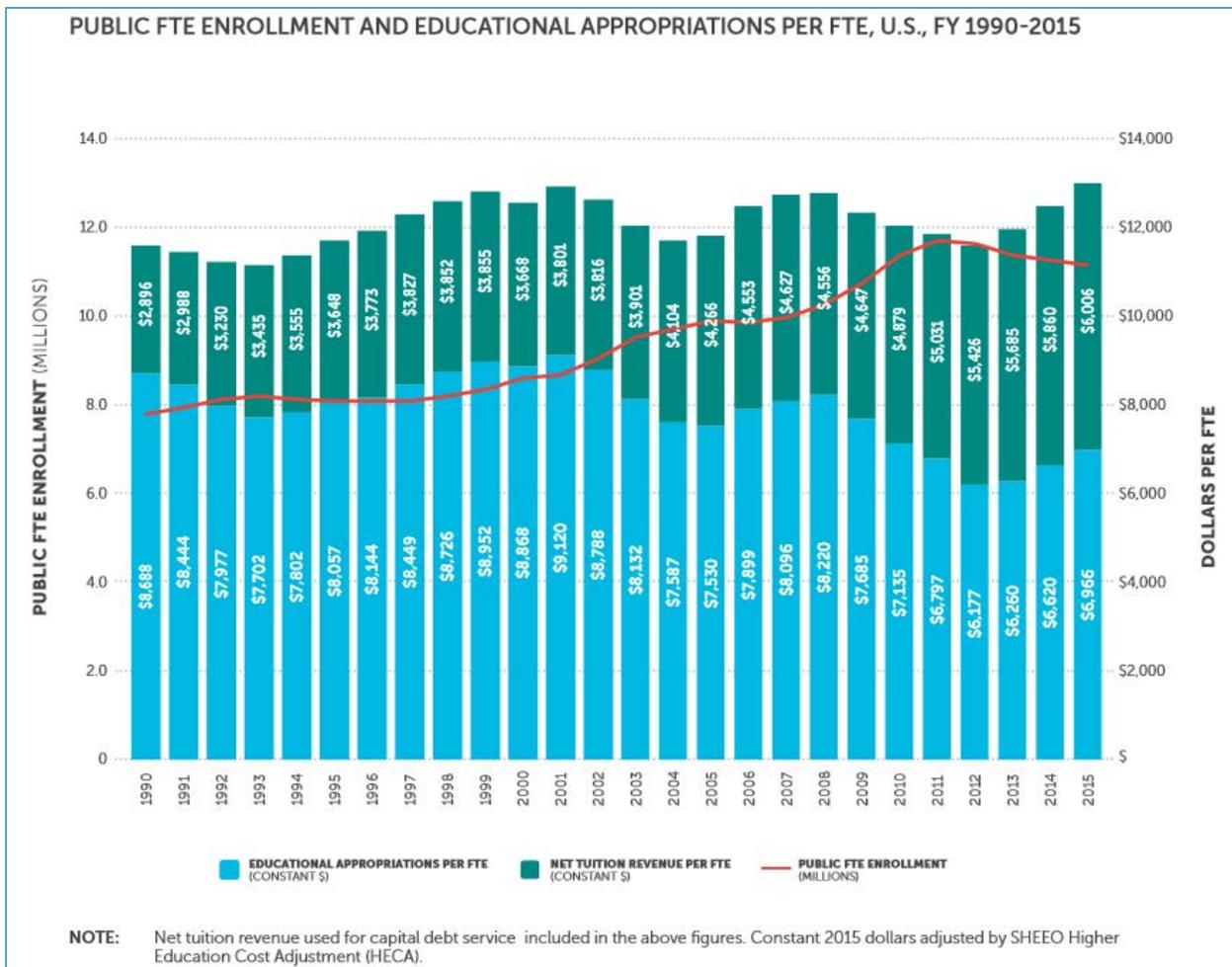


Figure 3. Public FTE Enrollment and Educational Appropriations per FTE.

Decreases in appropriations per student are driven by politics that favor lower taxes and smaller government, increasing statutory requirements (e.g. Medicaid, K-12), and large increases in the numbers of students being served over the past decades.

The shift in funding from state to student can result in very large tuition increases in order to cover all cost increases.

For example, if a state covered two-thirds of the total higher education cost and that support decreased one percent the next year, then the one-third (tuition) portion would need to increase two percent just to make up the difference, as the following pie charts in Figure 4 illustrate.

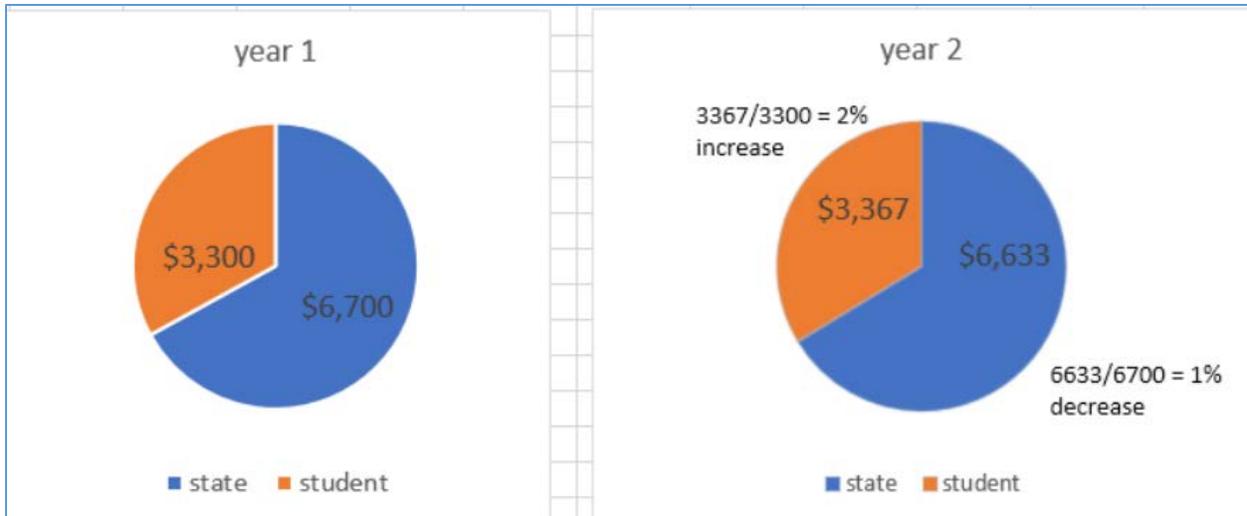


Figure 4. Depiction of tuition change given a 1% decrease in state support and \$10,000 in total cost.

In addition, costs increase with inflation, which impacts all businesses including universities. But again, if state support is not increasing, then the tuition portion will need to increase to cover all the inflated costs. Thus, the one-third tuition portion would need to increase three percent just to cover a one percent inflation rate over all costs. Combined with a one percent decrease in state support, the result is a tuition increase of five percent in one year—just to stay even.

Furthermore, there are real cost increases above inflation. The majority of university cost is in salaries and most university employees expect to enjoy real dollar salary increases as most of society does (due to labor productivity gains). If real dollar increases average one percent (the national average over the last decade), then again, the tuition portion needs to increase three percent to cover the state portion that is not increasing. Now the tuition increase is up eight percent in one year just to cover minimal inflation and salary increases.

Finally, there are real program cost increases. Universities are challenged to do more for society, to create better graduation results, to be many things to many people. It is therefore hard to cut university programs and costs. This is a common challenge for universities everywhere. A low one percent overall cost increase in

new or improved programs would result in another three percent increase in tuition. For example, \$1 million in new programs, services, support, etc. on a \$100 million-dollar budget would need to be covered by tuition, assuming no state support increase as in the example above. Since tuition represents one-third of university revenue in our example, or \$33 million, then a three percent tuition increase would be required to support the \$1 million in new programs ($\$33 \text{ million} \times 3\% = \1 million).

As becomes quickly apparent, very modest cost inflation, real salary gains, and program improvements or expansions can result in very large one-year tuition increases such as the 11 percent increase in the example above. If there are larger program improvements, inflationary pressures, or state decreases, the required tuition increase goes up dramatically.

This is in fact what has happened over the past decades across the country as states have continued to reduce appropriations per student. These tuition increases have in turn increased student debt, causing alarm among legislators, students, and trustees alike.

Tuition freeze

The concern about tuition increases and corresponding debt increases has resulted in freezing tuition rates at many state universities or limiting increases to the rate of inflation only. Given static or decreasing state support, capping tuition puts universities between the proverbial rock and hard place. Tuition cannot continue to increase as it has if we, as a society, want accessible higher education for most citizens. And yet, if revenue cannot be increased, then costs cannot be allowed to increase either.

For Tarleton State University, specifically, from 2010 to 2016, state appropriations (net of debt support) dropped from 41% of total support per student to 33% (in constant 2016 dollars). But as evident in Figure 5, that decrease in net appropriations was covered by increases in net tuition. Total net revenue per FTSE only increased by three percent over the six years.

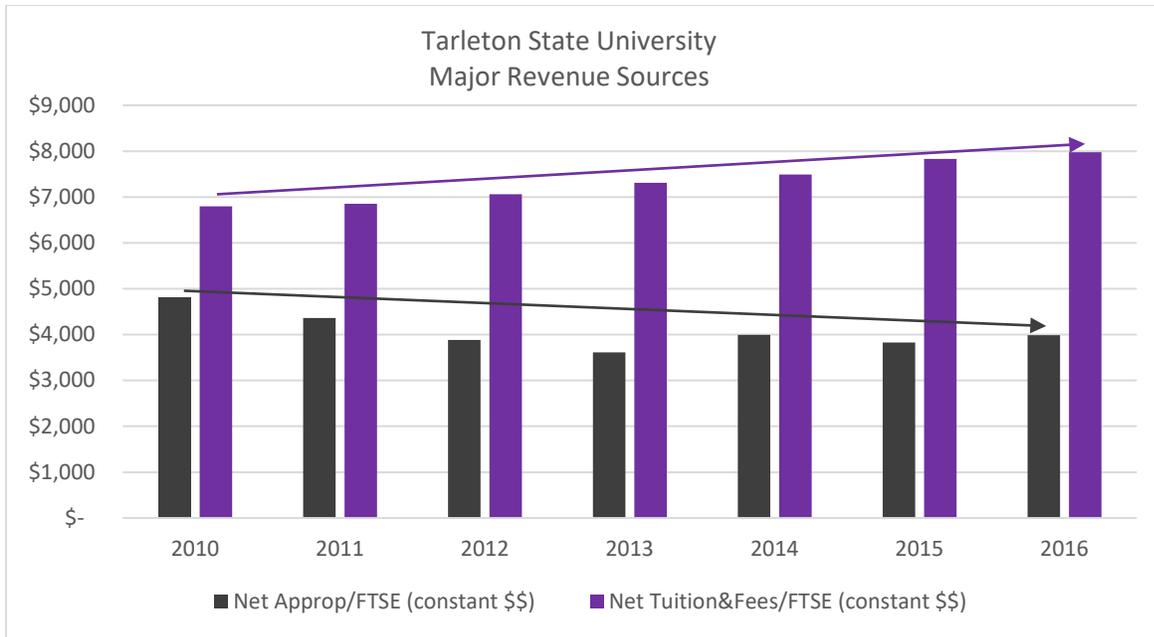


Figure 5. Net Appropriations and Net Tuition & Fees per FTSE, constant dollars. (Net of TRB funding and net of exemptions. Source: A&M System data file.)

Now, however, with tuition increases limited to the rate of inflation, Tarleton is facing real dollar decreases in total revenue per student.

Although Tarleton tuition is expected to increase by the inflation rate, that only applies to tuition, not to appropriations. The state appropriation may be increased to cover inflation, or not. It may be increased to cover growth in the number of students served in the state, or not. And it may be increased to cover merit (real dollar salary increases), or not. Given the long-term trends, the likely scenario is that the state appropriation to higher education will not be increased to cover all the above and is likely to continue to decrease.

The ultimate challenge

The overall cost per student at Tarleton is well within peer averages. That is, Tarleton does not have a “cost” problem, per se. In fact, overhead (institutional support) is low by national standards at \$1,215 per student compared to the national public university median of \$2,324 (NCES, 2014). Nonetheless, with

decreasing state support and limited ability to increase tuition and fees, balancing resource availability and resource demand is becoming a serious problem.

Tarleton is certainly not alone in this predicament. This challenge is shared by most public universities.

The ultimate crux of the challenge is that education does not have productivity gains in the way the rest of society does. The Tarleton student-faculty ratio was probably 20 to one 30 years ago, and the ratio is still about 20 to one today. Yet the rest of society has gained quite a bit more productivity per worker over the past 30 years, thanks to automation and computers.

Another way of stating this challenge is that education is caught in an analog mode (because learning doesn't occur faster and faster every year) whereas the rest of the world is moving at digital speed.

As Paul Krugman (1994) stated,

Productivity isn't everything, but in the long run it is almost everything. A country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker.

Universities have been able to make up for the lack of productivity gains and the decreases in appropriations in higher education in past decades by charging more tuition. Universities can no longer expect to do that.

The long-term solution is not clear, though the problem has been known for a long time. Baumol and Bowen famously captured the essence of this challenge in 1966 as it pertains to higher education by examining the idea of increased productivity in an orchestra (there is none). Their characterization of the problem is often referred to as "Baumol's cost disease." The solution to the cost disease will likely require federal and state cooperation to completely change the way public education is financed.

In the meantime, Tarleton administrators, managers, and faculty need to do everything possible to maintain quality while reducing costs. The SHEEO (2016) report concludes:

In the past decade, two recessions and the larger macroeconomic challenges facing the United States have created what some are calling the “new normal” for state funding for public higher education and other public services. In the new normal, retirement and health care costs simultaneously drive up the cost of higher education and compete with education for limited public resources. The new normal no longer expects to see the level of recovery of state support for higher education that occurred repeatedly in the last half of the 20th century. The new normal expects students and their families to continue to make increasingly greater financial sacrifices in order to complete the postsecondary education. ***The new normal expects schools and colleges to find ways of increasing productivity and to absorb ever larger budget cuts, while increasing degree production without compromising quality*** (emphasis added).

Tarleton opportunities

There are many actions to consider in response to the current challenge of declining state support and frozen tuition. Of course, one action might be to increase fundraising. Another is to continue to request more legislative support. Still another is to request permission to increase tuition and fees from the Board of Regents. These topline revenue solutions are not likely to return meaningful results soon, however.

In addition to working for more topline revenue, we can analyze the “contribution margin” of programs to shape course offerings based on a value-driven, evidence based matrix. The contribution margin (CM) is the funding available to support operations after direct costs. In other words, CM is the money generated by a given class or program less the cost of delivering that class or program. Some classes or programs generate more money based on the formula calculations provided by the Texas Higher Education Coordinating Board (THECB). The formula funding calculations (see Appendix 1) are based on average costs across the state. Of

course, if Tarleton costs are higher than average for a given program, then it may not make sense to expand that program even if there is more formula funding associated with it. Thus, the importance of understanding the actual CM for programs at Tarleton.

It is extremely important to consider the value of a program in any decision process, using something like the four-quadrant matrix, as shown in Figure 6.

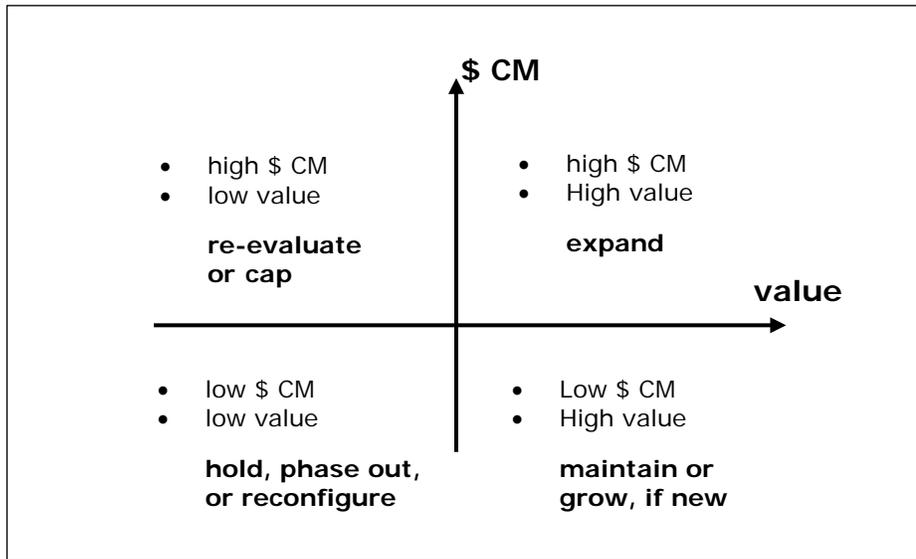


Figure 6. Program analysis matrix.

Value can be measured across a number of variables, such as the quality of program, the potential size, the impact on other programs, etc. Program reviews or prioritizations have been done by many universities across the country based on qualitative valuations to improve the focus of academic offerings (Dickeson, 2010).

A related analysis can be done regarding overhead and initiatives. Although there is no contribution margin (or revenue) associated with overhead, the same value-driven, evidence-based approach can be used to discuss services and strategic initiatives based on values and costs, as shown in Figure 7.

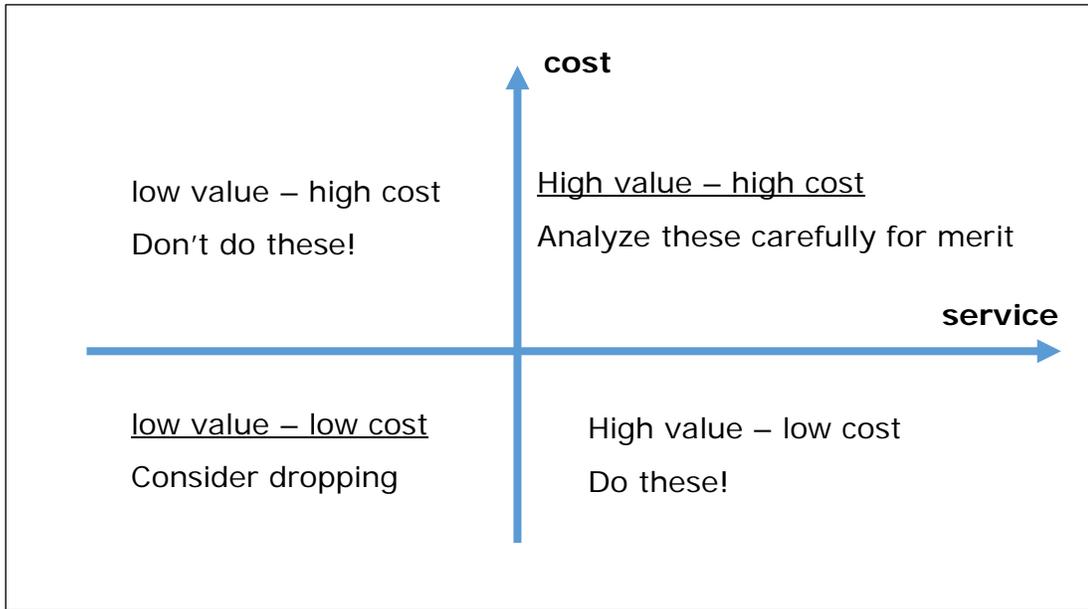


Figure 7. Service value and cost matrix.

All activity in the university should fall under either a program review or an overhead review.

Another possible action to consider is increasing productivity. This is not a long-term solution because we cannot expect to “scale” learning, as previously discussed. It is also a sensitive issue because it effectively means increasing the number of students per faculty and represents a risk to quality. However, many peers already have student-faculty ratios higher than Tarleton. A one percent increase in the student-faculty ratio effectively supports a one percent merit increase at Tarleton.

The current Tarleton challenge

For fiscal year 2019, based on four percent enrollment growth, no real dollar tuition and fee increase, and given the 85th Legislature’s support, we project that Tarleton will have a significantly lower revenue increase than what was available in FY18 unless additional funds can be made available through some mechanism as discussed above.

The FY18/19 incremental revenue and expenses are projected as follows:

FY18/19 (Incremental) Operating Budget Overview	FY18 Projected	FY19 Projected
Projected Incremental Revenue		
aux fee (reallocation)		500,000
credit card fee recapture (\$400K possible but not certain)		300,000
"pool" funds	Aquatics design; Turf field lighting, etc.	Aquatics
dining commissions	stadium/parking projects	stadium/parking projects
housing residual	1,143,333	100,000
parking residual	608,178	100,000
state reconsidering pro card rebate (possible \$100K)	-	-
appropriation	3,677,747	-
Savings from 90 day hiring freeze	250,000	(250,000)
Inflation adjustment (1%) No enrollment growth in 2018; 3% in 2019	500,000	2,000,000
	6,179,258	2,750,000
projected incremental costs		
2% merit (and benefits)	1,305,757	1,400,000
reserve for 2019 merit (one-time funds for 2018)	200,000	(200,000)
New division requests		
Academic Affairs	787,505	
Student Affairs	241,225	
Parking	-	
Advancement and F&A	107,175	
President's Office (Institutional Memberships)	25,000	
New Division	200,000	
Athletic Scholarship Increase (from Designated Tuition)	75,568	80,000
Engineering building operations	-	300,000
Bad Debt Increase	50,000	-
SSC Contract Increase	450,000	180,000
Workday Assessment from TAMUS	40,000	100,000
IT Contract and capability increases (2019 bandwidth)	110,000	120,000
unknown/contingency	250,000	150,000
special item coverage (farm, outreach, enhancement, MITC)	1,558,261	-
faculty promotions	155,670	160,000
disability services	150,000	-
debt service (estimated)	400,000	-
property risk fund (System assessment)	19,000	-
Residual (builds reserves for capital projects or emergencies)	54,097	514,097

The residual income is required to support building capital maintenance and renovations under the capital plan. Just as a car needs new parts periodically to keep functioning, buildings need new fans, motors, servers, and other equipment to keep inside air at comfortable temperatures, etc. If buildings are not maintained, the repair cost will be more expensive in the long run and functional disruptions are more likely. And of course, at some point all buildings require a major renovation to continue to support programmatic needs. The residual income supplements the Permanent University Funding received from the A&M System for the same purpose.

Appendix 1: Higher education management accounting 101

Higher education finance can seem complex given the variety of funding sources and the various restrictions on those sources. But there are two core concepts every budget manager needs to understand: revenue per student and cost per student.

Revenue per student is primarily based on the state appropriation per student and the tuition and fees per student, as discussed above. The state appropriations in Texas are largely based on a sophisticated “formula” that may also appear complex but can be summarized as an allocation system based on the percentage of the various types of semester credit hours (SCH) taught at each institution. The value of the various types of SCH is based on the actual average SCH cost for each type of education program across the state.

The formula funding also includes reimbursement for utilities, building operations based on square footage, and for smaller institutions, a small “teaching supplement.” In addition, state appropriations include “special item” funding outside of the formula to support specific legislative initiatives at a given institution.

But the primary source of state higher education funding is through the formula, which is primarily driven by the SCH taught, as adjusted by the average cost of those SCH. The money available to allocate through the formula is determined every two years through the legislative process. That is, the state can “fully fund” the formula by adding money to the previous biennium’s commitment to support growth in the number of students in the state, inflation, and the real cost increase of programs, as described above. Or the state can provide less than full funding to the formula, which means that the effective revenue per student from appropriations decreases, as discussed above.

The important number to focus on is the revenue per student. If a given institution’s enrollment growth is less than the state average growth, and assuming the formula is fully funded, then the institution will receive less total funding but the funding per student will remain constant. If institutional growth is greater than the state average growth, and assuming no change in the type of programs taught,

then the institution will receive more total funding, but the funding per student will still remain the same. One might assume that the latter outcome is better for the institution. However, it is impossible to tell if the outcome is better without understanding the second core concept, cost per student.

The cost per student is not a constant. The cost per student varies at each institution depending on the cost of the various SCH taught at that institution and that cost can change each year depending on how many new faculty and staff are hired and how effectively the institution is managed. If an institution grows enrollment faster than the state average but also hires a great many more faculty and staff to serve those additional students, then the cost per student can increase. Indeed, if the revenue increase per student is zero and the cost per student increases enough, then the institution can, in fact, lose money serving those additional students. The marginal cost increase can exceed the marginal revenue increase through the addition of new software or other program costs as well.

The likelihood of a marginal loss increases when the state appropriation per student is decreasing.

The cost per student is composed of two major types of costs: direct (or variable) costs and indirect (or fixed) costs. The direct costs vary directly with revenue, or SCH, production, represented by faculty salaries and departmental expenses. The indirect, or fixed costs, do not vary depending on the number of students enrolled and are typically referred to as overhead. Overhead is not actually ever permanently fixed but rather varies much more slowly. For example, the senior administrative ranks will not need to grow if a 10,000-student university is adding 500 students, but will most certainly need to grow as the university becomes a 15,000-student university.

The revenue per student and the cost per student are the two core concepts to understand when managing enrollment, course offerings, and all support functions at any university.

Appendix 2: Higher education financial statements for non-financial managers

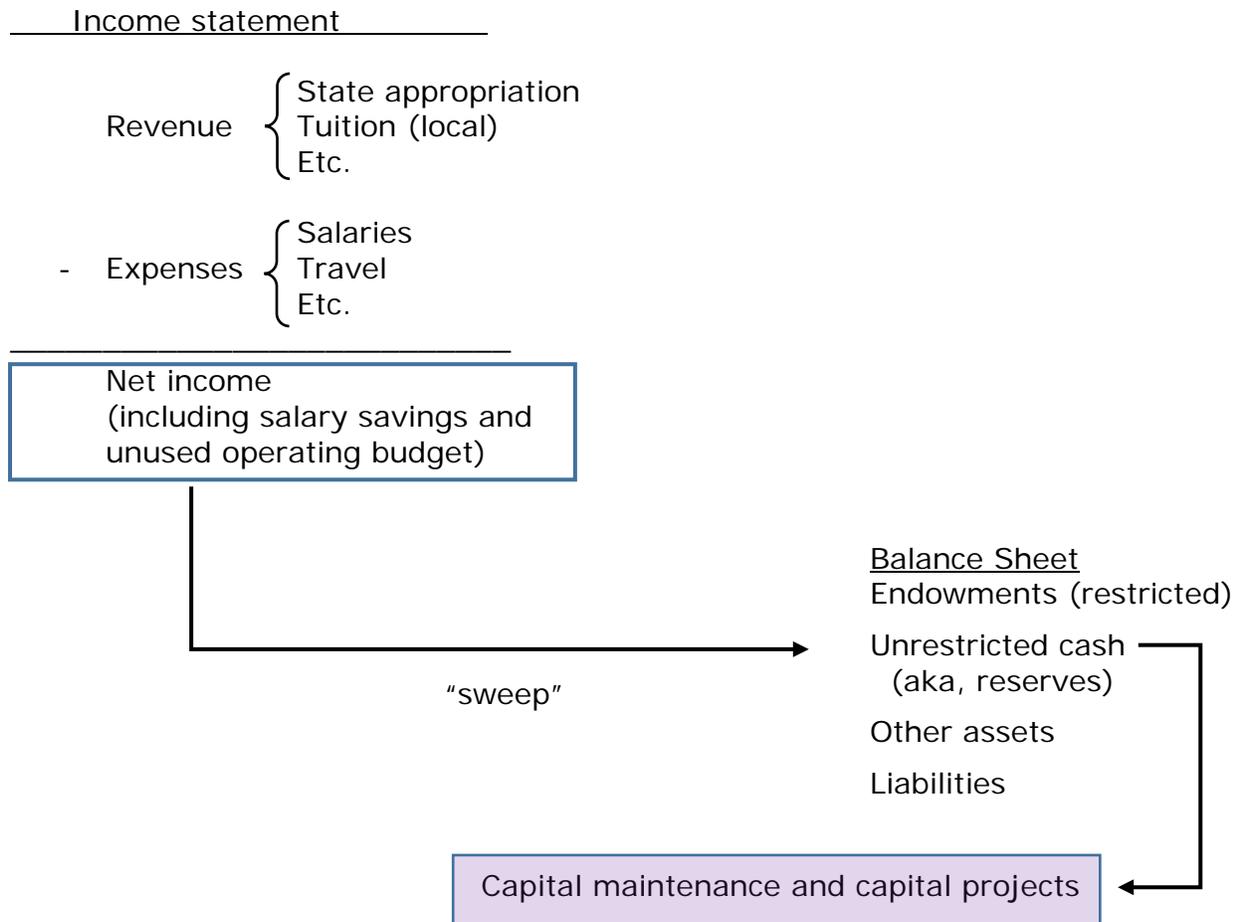
There are two very important financial statements that all managers should be familiar with: the income statement (or Statement of Revenues, Expenses, and Changes in Net Position) and the balance sheet (or Statement of Net Position). These statements, along with others, are published annually as the Annual Financial Report (AFR) to document the results of the fiscal year. This is a standard practice for all universities and businesses.

The income statement shows the results of operations for the year and is separated into operating revenues, operating expenses, non-operating revenues and expenses, and other revenues and transfers. The state appropriations are considered “non-operating” by accounting practice. The key number is the net income before other revenues and transfers. This number indicates whether the institution is performing according to plan and creating a healthy residual income to cushion against economic surprises or sudden enrollment changes. A healthy residual income also adds to the savings account of the institution, which brings us to the balance sheet.

The balance sheet is similar to an individual’s statement of net worth. It includes the value of everything owned and all liabilities—the cash on hand, investments, the money that is due from others, the value of buildings, the value of gifts, etc. Money from the balance sheet available to spend on capital projects and capital maintenance is called unrestricted reserves. These funds cannot be spent on operations unless it is an emergency because to do so causes an operating loss. If money is spent from reserves (or savings), it must be for one-time expenses and, as best practice, should only be spent on improving long-term assets or decreasing long-term liabilities.

Appendix 3: Salary Savings Cash Flow Explained

“Salary savings” are those funds not spent in a given month due to a vacancy. Hiring an adjunct or a visiting professor to fill a vacant position is not a use of salary savings but rather a use of budgeted funds. The simplified graphic below depicts how salary savings, along with all other unspent funds, flow to the university savings account (aka “reserves,” as shown on the balance sheet) for use in capital projects or capital maintenance (that is, significant one-time expenses).



Salary savings *could be* used by departments for one-time expenses during the year. However, if we used that approach, we would need to budget a larger net income (to fund capital maintenance and create the appropriate university contingency), and thus decrease departmental budgets upfront. Since salary savings are variable each year, and the capital budget can be flexed to deal with that variability, Tarleton provides departments with known budgets rather than have them depend on salary savings for one-time expenses. It is also considered a bad practice to use salary dollars for anything other than salaries since it can result in twisted incentives (to not replace a position, for example, in order to buy new furniture).

Appendix 4: Strategic Planning

Strategy has not been an essential component of higher education management, unlike in the commercial sector, because institutions have rarely had the opportunity to go after “new markets” or invest in major new “product offerings.” Public higher education institutions typically have “strategic” plans but they are more akin to wish lists or expanded vision statements driven mostly by accreditation requirements.

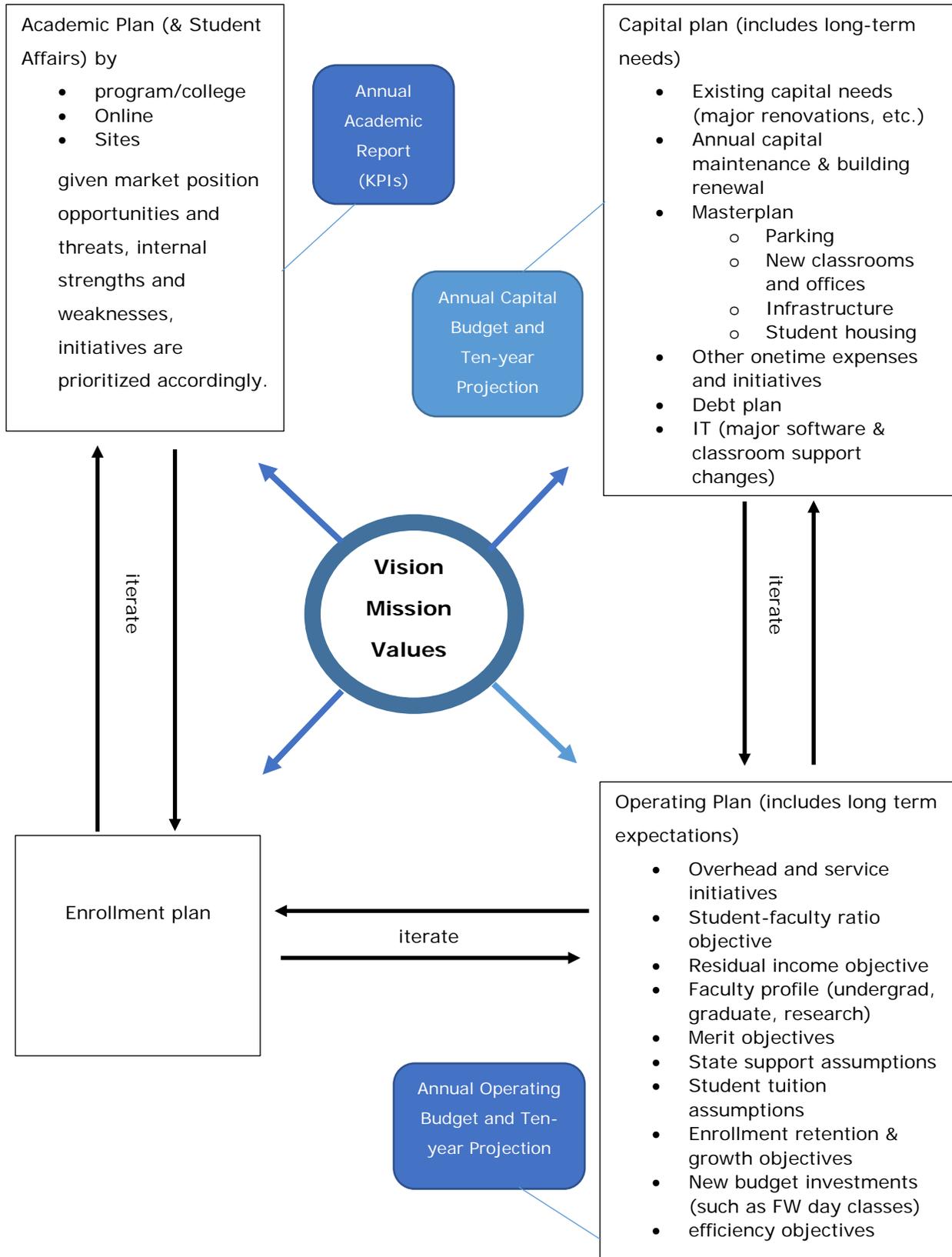
This is not to say that the typical “strategic” plan is the wrong approach. For many institutions, the unifying vision and the list of vague but desirable outcomes is surely helpful and enough. A justification is needed to employ the resources necessary to create a true strategic plan. Such a plan becomes very important when there are many good ideas (i.e. initiatives) to pursue and growth in multiple markets is desired. It becomes critical when initiatives and growth are stacked against declining state support.

A true strategic plan is about long-term (strategic) aims tied to financial results. It is about looking ahead ten years and allocating resources, both capital and operating, in a methodical way to achieve the desired long-term results; it is as much about what is not going to get done as what is going to get done. Choices must be made about what not to do so that the priority results can be achieved.

The key is to have the strategy linked to financial budget projections so that initiatives are appropriately supported. To develop a sustainable budget projection requires iterating between the elements of the strategic plan to balance resources, both capital and operating, against the opportunities. A graphic representation of the strategic plan elements and the iterative connections is presented below. Of course, the entire plan is grounded in the institutional vision, mission, and values.

For Tarleton, the creation of a Fort Worth campus is a perfect example of the need for a true strategic plan.

Strategic Plan elements



Appendix 5: Tarleton Account Structure

Type of Funds		Account Range	Uses	Year-End Process
State Funds		100000-199999	State funds are primarily used for salaries because the state pays ~75% of the benefits for those salaries. State funds should be used as little as possible for operating expenses.	Unencumbered funds are swept. Remaining appropriated funds are returned to the state. Unused funds from other state sources are held in state treasury reserve.
Type of Funds		Account Range	Uses	Year-End Process
Designated Funds	Designated Tuition	200000-200999	Designated Tuition revenue funds activities related to the core educational mission of the university.	Unencumbered funds are swept to college or institutional reserves.
	University Service Fee	201000-201999	University Service Fee revenue funds support activities related to the core educational mission of the university (i.e.-Library, Information Technology, Registrar's Office, etc.).	Unencumbered funds are swept to college or institutional reserves.
	Online Program Fees	202000-202999	Online program fees were approved to financially assist academic departments offering online programs, the Center for Instructional Innovation (CII), and other university offices and departments that incur costs associated with online degree programs. Online program fees were approved to collapse into USF and program differentials beginning with fiscal year 2017 and will be phased out by 2021.	Unencumbered funds are swept to college or institutional reserves.
	Other Designated	203000-204999	This group of accounts includes things such as application fees, unrestricted gifts, interest revenue, etc. Expenses are typically related to the source of revenue and must support the educational mission of the university.	Budget balance available rolls to new fiscal year.

	Summer Camps	205000-205999	Summer camp revenue is used to pay expenses related to summer camp activities held on campus.	Budget balance available rolls to new fiscal year.
	Study Away	206000-206999	This fee revenue is used to pay expenses related to off-campus educational activities (i.e. - study abroad, study away).	Budget balance available rolls to new fiscal year.
	Educational Services	207000-207999	This group of accounts is used to record revenue and expense related to educational activities that are self-supporting (i.e. - continuing education, fine arts programs, career service events, etc.).	Budget balance available rolls to new fiscal year.
	Indirect Cost Recovery	208000-208999	This group of accounts is used to record allocations of indirect cost revenue generated by grants/contracts. Expenses must support the function of the original agreement.	Budget balance available rolls to new fiscal year.
	Differential Tuition	228000-228999	Each college charges a tuition differential that can be used to fund activities related to the core educational mission of that particular college.	Unencumbered funds are swept to college reserves.
Type of Funds		Account Range	Uses	Year-End Process
Auxiliary Funds		300000-399999	These units generate their own income to cover expenses related to the services they provide.	Unencumbered funds are swept to institutional reserves.
Type of Funds		Account Range	Uses	Year-End Process
Restricted Funds	Grants/Contracts	400000-499999	Grant/contract revenue is received from external agencies in exchange for agreed upon deliverables. Expenses must be spent in accordance with an agreed upon budget, provided as part of the contract.	Budget balance available rolls to new fiscal year unless otherwise instructed by the granting agency.
	Restricted Gifts	500000-599999	Restricted gifts are provided by external parties with the understanding they will be used for a specific purpose.	Budget balance available rolls to new fiscal year.

	Scholarships	600000-699999	Scholarship accounts can be funded by restricted gift revenue or by interest revenue from endowments. Expenses must comply with the donor's original intent.	Budget balance available rolls to new fiscal year.
	Loans/Endowments	700000-799999	Loan funds are held and used for specific loan programs. Endowment funds are held for investment, as designated by the donor, with interest generated used to fund scholarships or other university operations. No expenses occur in this account group.	Budget balance available rolls to new fiscal year.
Type of Funds		Account Range	Uses	Year-End Process
Plant Funds		800000-899999	Plant funds are those designated to be invested in the university's physical plant. The most common expenses found here are for construction projects or land acquisition.	Budget balance available rolls to new fiscal year until the project is complete and funds are reverted to the original source.
Type of Funds		Account Range	Uses	Year-End Process
Agency Funds		900000-999999	Agency funds are those held on behalf of other organizations, such as student groups.	Budget balance available rolls to new fiscal year.

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