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Preliminary Analysis – Affordability in MN

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Higher education is critical to economic prosperity. Occupational projections highlights the need for a diversity of skills and training in order to meet the state's workforce demand. Postsecondary certificates and degrees are central aspects of the state's education and training policy. Individuals with a college credential have higher earnings and lower levels of unemployment as compared to individuals with only a high school diploma. For those Minnesotans growing up in poverty, higher education provides a means of upward socioeconomic mobility. Sadly, Minnesota's educational attainment levels show profound gaps by race and family income.

As college costs continue to rise faster than family incomes, the state is in danger of pricing its most critical populations out of higher education. While Minnesota has invested in both institutional appropriations and need-based financial aid, families and students still must juggle work and family responsibilities in order to enroll in and complete college. Understanding the complexity of higher education financing and the relative affordability of college for its citizens will allow the state to craft policies seeking to maximize affordability for critical groups, thus ensuring access and completion for students.

The historic investments made by Minnesota in higher education require mindful maintenance. Student financial aid must be responsive to college costs and family income. Institutions require adequate appropriations to ensure moderate tuition levels and to provide resources to ensure satisfactory operations and student supports. The true measure of Minnesota's effectiveness at managing its investments are the outcomes of its students. Students must succeed in order for the state to recoup its investment. For students, college is never affordable unless they complete.

Purpose of this report

The purpose of this report is to outline a working definition of affordability to guide state higher education policy. Currently no agreed upon definition exists. Furthermore, the definition of affordability will differ between the perspective of a family and the perspective of the state. Families must make a much more nuanced decision about affordability, taking into account not only income and resources but also their needs, educational goals, and other obligations. For the state, affordability must be an objective measure allowing for policymakers to understand the level of resources required by the state, the federal government, the family, and the student to ensure financial access for all students from initial enrollment through to completion. In doing so, we must disaggregate affordability by family income, institution and system, family/student type, enrollment level, geography, and race.

This report will:

1. Define affordability,
2. Operationalize affordability measures,
3. Discuss the impact of post-college affordability metrics,
4. Layout a framework for ensuring maximum efficiency in state policy regarding affordability, and
5. Provide recommendations for state policymakers.

Defining Affordability

In order to begin, we offer a definition of affordability for families and for the state.

For families, affordability is a more subjective measure, as family needs vary. As such, affordability can be defined as the ability to purchase needed or appropriate education and still have sufficient income to enjoy at least the minimum consumption of other essential goods and services. Individual families determine minimum consumption.

For the state, affordability reflects the proportional investment by taxpayers as compared to student and families in order to achieve the desired behavior (e.g. college enrollment and completion), though the proportional investment may also reflect the results of policy which rations limited state resources. In this more objective vein, affordability is defined as the share of individuals who can afford to enroll by income. However enrolling in college does not equate to completing college, so states may want to weight affordability measures by the percent of students who complete their program in order to obtain a truer picture of effective affordability policies. This definition assumes that families and students are assigned reasonable contributions and that they have access to the appropriate resources from all sources to fund those contributions.

Both the family/student and the state affordability definitions allow policymakers to set benchmarks against which current policies can be measured. Should current policies fall below the benchmarks, then the benchmarks provide a goal for the state to work towards.

Why and how to set affordability goals?

Setting and using affordability goals provide a means for evaluating financial investments by the state that support enrollment, retention, and completion. This is especially critical, as affordability is key to educational attainment, especially for underrepresented students.

As such, affordability goals should also strive to adhere to a number of central tenets in order to be most effective:

1. Affordability should reflect cost-sharing principles.
2. Tuition and fees, and other educational costs should be predictable and transparent.
3. Students should be motivated to become well-informed about costs, resources and benefits.
4. Student financial aid should be simple, flexible and responsive.
5. Affordability should ensure families and students make reasonable contributions and adequate resources while also ensuring that students graduate with manageable debt.

These tenets ensure that the state's investment in affordability is maximized and effective.

Who is responsible for affordability?

Affordability is the responsibility of students, families, and, if necessary, taxpayers. Similar to the existing state financial aid framework, Design for Shared Responsibility, all parties have responsibility for the costs of higher education.

Minnesota formally adopted the Design for Shared Responsibility in 1983. The Design for Shared Responsibility is based on work of the Carnegie Commission and states that the price of attendance is to be split among students, families and taxpayers.

Under the Design for Shared Responsibility framework, the price of attendance is equal to tuition and fees plus living expenses. Minnesota uses the price of attendance as tuition and fees are not the only costs students and families face in paying for college. For many students, living costs exceed tuition and fees. Evidence demonstrates that students who lack sufficient financial resources are more likely to work more hours or forego key resources like textbooks, affecting their ability to succeed in school.[1] Students without access to sufficient financial resources might also make decisions that hurt them in the long run, such as taking on higher loan amounts or dropping out of school.[2] Therefore inclusion of living expenses provides a more realistic estimate of the costs that students and families are facing.

For Minnesota policy, the price of attendance is to be split among 3 payers:

1) Students,
2) Families, and
3) Taxpayers
    - Federal – Pell Grants
    - State – Minnesota State Grants

Assumed within the Design for Shared Responsibility are the follow tenets:

- Minnesota expects students to make a significant personal investment in their own postsecondary education up front.
- Minnesota expects families to invest in their students' postsecondary education based on their ability-to-pay.
- Minnesota taxpayers invest in students by leveraging federal Pell Grants to combine with Minnesota State Grants to help cover the price for families whose ability to pay does not provide full coverage of the remaining costs.

Missing from the original Design for Shared Responsibility are institutions. Institutions play a critical role in providing students with information about costs and resources. Institutions also maintain the central support services and programs needed to ensure students persist in and complete college.

The Design for Shared Responsibility is only effective when

1) The contributions expected of students and families are reasonable,
2) Adequate investments are made by the state to ensure that state financial aid recognizes the actual cost of college, and

[1] The Institute for College Access and Success and California Community Colleges Student Financial Aid Administrators Association. 2012. "Making Loans Work: How Community Colleges Support Responsible Student Borrowing." http://projectonstudentdebt.org/files/pub/Making_Loans_Work.pdf.

[2] Broton, Katharine, and Sara Goldrick-Rab. 2013. Housing Instability among College Students. Madison, WI: University of Wisconsin—Madison, Wisconsin Center for the Advancement of Postsecondary Education. http://strategylabs.luminafoundation.org/wp-content/uploads/2013/10/Sara-Goldrick-Rab-Housing-Policy-FINAL-copy.pdf.

3) Students and families are not subject to additional financial expectations from a failure to recognize actual costs.

The reasonableness of expectations of students and families serve as the basis for operationalizing affordability.

Operationalizing Affordability

Operationalizing affordability means to define specific measures of affordability for students, families, and the state. In order to establish metrics of affordability, it is important to define the cost of attendance for postsecondary education. For the purposes of this report, cost of attendance is defined as the sum of tuition and fees for 15 credits per term at a public institution plus a reasonable amount for living expenses.

Tuition and Fees

Tuition is defined as average tuition charged to the student for full-time enrollment per term, assuming 2 semester terms or 3 quarter terms per academic year. As tuition charged by program at an institution may vary, the average tuition across programs is used. Fees are defined in Minnesota Statute as only those fees that are mandatory and charged to full-time resident students attending the institution. Fees do not include charges for tools, equipment, computers, or other similar materials where the student retains ownership. Fees include charges for these materials if the institution retains ownership. Fees do not include optional or punitive fees. Full-time is also defined in Minnesota law under Minnesota Statute 136A.101 Subd. 7, as enrollment in 15 credits or more per term.

Table 1. Tuition and Fees Charged for Full-Time Enrollment, 2018-2019

Sector	Lowest Tuition and Fees Charged - Institution	Lowest Tuition and Fees Charged - Amount	Highest Tuition and Fees Charged - Institution	Highest Tuition and Fees Charged - Amount
Minnesota State Colleges	Lake Superior College	$5,041	Normandale Community College	$5,789
Minnesota State Universities	Metropolitan State University	$7,879	Winona State University	$9,426
University of Minnesota	University of Minnesota, Crookston	$11,822	University of Minnesota, Twin Cities	$14,760
Private Colleges – 2-Year Programs	Leech Lake Tribal College	$5,040	Dunwoody College of Technology	$19,870
Private Colleges – 4-Year Programs	Martin Luther College	$15,410	Carleton College	$54,759

Living Expenses

Living costs are the costs accrued to students beyond tuition and fees when attending college. Within a traditional financial aid model, living expenses include books and supplies, room and board/housing and meals, transportation, and personal costs. These costs are generalized and may vary as compared to the actual buying preferences of the student. Within existing state policy, living and miscellaneous expenses are set to reflect a frugal living standard. Minnesota Statutes 136A.121 sets the living and miscellaneous expenses equal to 101% of federal poverty guidelines for a single person for a nine-month academic year.

Table 2. Comparisons of Living Expenses 2018-2019

Sector	Books and Supplies	Room and Board	Transportation	Personal / Miscellaneous Expenses	Total Cost of Attendance		101% Federal Poverty Guidelines	Difference
Minnesota State Colleges (NCC)	$1,000	$8,260	$2,928	$4,634	$16,822		$9,196	$7,626
Minnesota State Universities (WSU)	$900	$8,730	$2,000	$760	$12,390		$9,196	$3,194
University of Minnesota (TC)	$1,000	$9,910	$228	$2,000	$13,138		$9,196	$3,942
Private Colleges – 2-Year Programs (DW)	$1,011	$7,450	$450	$2,000	$10,911		$9,196	$1,715
Private Colleges – 4-Year Programs (CAR)	$1,706	$14,085	$150	$0	$15,941		$9,196	$6,745
Bureau of Labor Statistics, Consumer Expenditure Survey	$1,116	$10,829	$1,367	$266	$13,577		$9,196	$4,381

Measuring affordability

As described earlier, for students and families, affordability can be defined as the ability to purchase appropriate education and still have sufficient income to enjoy at least a minimum consumption of other essential goods and services. Affordability for students and families can be measured at three points of time: entry into higher education, across the student's lifetime, and during repayment after exit. At time of entry into higher education is the most direct measure by which to assess affordability (Affordability at Entry). The second time point, across the student's lifetime, attempts to assess affordability as a means of measuring return on investment to the student. The third measure, during repayment after exit, measures loan repayment burden compared to income after dropout or graduation for those students choosing to borrow for college. This report focuses on the first measure, affordability at entry, as the primary analysis but will address measures of return on investment and loan repayment in a later section.

Affordability at Entry

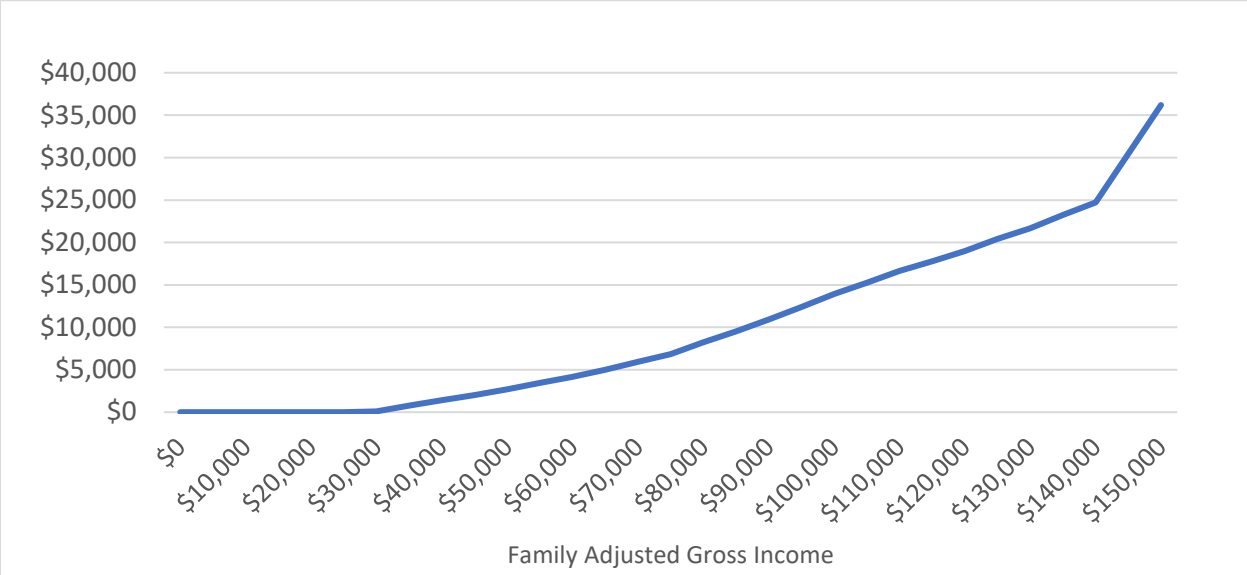
Affordability at Entry is measured as the ability of families and students to access/utilize available resources to "purchase" their education at entry or first year of college. Affordability at entry is measured by comparing the cost of attendance less grants and scholarships to family resources. Basic resources available to families and students include current family income, family assets, income from student work, and federal student loans. First, we assume that the combination of resources will equal the cost of attendance less grants and scholarships. State policy under the Design for Shared Responsibility also assumes that families will contribute a reasonable percentage of current income and assets. Similarly, students are assumed to contribute a reasonable percentage of income (work).

To evaluate affordability at entry, let's start with the second assumption – is the percentage of income and assets required from families and students reasonable?

Current Contributions Required of Families of Dependent Students

Using data from State Grant applications in 2017-2018, we can derive the percentage of family adjusted gross income that families are currently expected to contribute towards the cost of college. Minnesota does not expect families to contribute the full Expected Family Contribution from the FAFSA, but rather calculates the contribution from the family by applying a percentage reduction to the Parent Contribution (or Expected Family Contribution, if an independent student). As shown in Figure 1, the contribution required from families of dependent students ranges from $0 (0% of family adjusted gross income) for families with an adjusted gross income less than $5,000 to $27,800 (18.6% of family adjusted gross income) for families with an adjusted gross income of $150,000. Similarly, the contribution required from independent students with children ranges from $0 (0%) to $9,200 (8.5%) and from independent students without children ranges from $0 (0%) to $8,500 (12%). This will be referred to in analysis below as the "Current Model".

Figure 1. Current Contribution from Families



Contributions Compared to Income after Family Expenses

This percentage doesn't tell us if the contribution is reasonable. Reasonableness would be determined be comparing the family's minimal standard of living to family income and calculating the remaining available income that the family could contribute to college. So what is the minimal standard of living required for families in Minnesota?

Modest, yet Adequate, Family Standard of Living

One option would be to calculate how much a family would need in order to pay for housing, transportation, child care, food, etc. The Economic Policy Institute's Family Budget provides such an analysis. They publish Family Budget Fact Sheets measuring the income a family needs in order to attain a modest, yet adequate, standard of living for every county in the nation. For example, a two-parent, two-child family in Washington County, Minnesota would need $8,993 per month ($107,911 per year) to secure a modest, yet adequate, standard of living. Washington County has the highest cost of living in the state of Minnesota according to the EPI calculator. The monthly amount includes the following costs:

- Housing: $1,326 per month • $15,915/year

- Food: $756 per month • $9,077/year
- Child care: $2,060 per month • $24,717/year; Monthly costs range from $1,206 for a single-child family to $2,322 for a family with four kids.
- Transportation: $1,270 per month • $15,245/year
- Health care: $1,248 per month • $14,982/year
- Other necessities: $840 per month • $10,082/year
- Taxes: $1,491 per month • $17,894/year

By comparison the same family living in Roseau County would require $6,403 per month ($76,831 per year) due to substantially lower housing and child care costs. Roseau County has the lowest cost of living in Minnesota per the EPI calculator. The monthly/annual amount includes:

- Housing: $697 per month • $8,364/year
- Food: $741 per month • $8,895/year
- Child care: $893 per month • $10,713/year; Monthly costs range from $535 for a single-child family to $1,003 for a family with four kids.
- Transportation: $1,262 per month • $15,143/year
- Health care: $1,400 per month • $16,796/year
- Other necessities: $580 per month • $6,963/year
- Taxes: $830 per month • $9,958/year

Rock County represents the median cost of living in Minnesota. For a two-parent, two-child family in Rock County, it costs $6,811 per month ($81,729 per year) to secure a modest, yet adequate, standard of living. The monthly/annual amount includes:

- Housing: $697 per month • $8,364/year
- Food: $726 per month • $8,712/year
- Child care: $914 per month • $10,968/year
- Monthly costs range from $547 for a single-child family to $1,027 for a family with four kids.
- Transportation: $1,246 per month • $14,954/year
- Health care: $1,725 per month • $20,699/year
- Other necessities: $574 per month • $6,889/year
- Taxes: $928 per month • $11,141/year

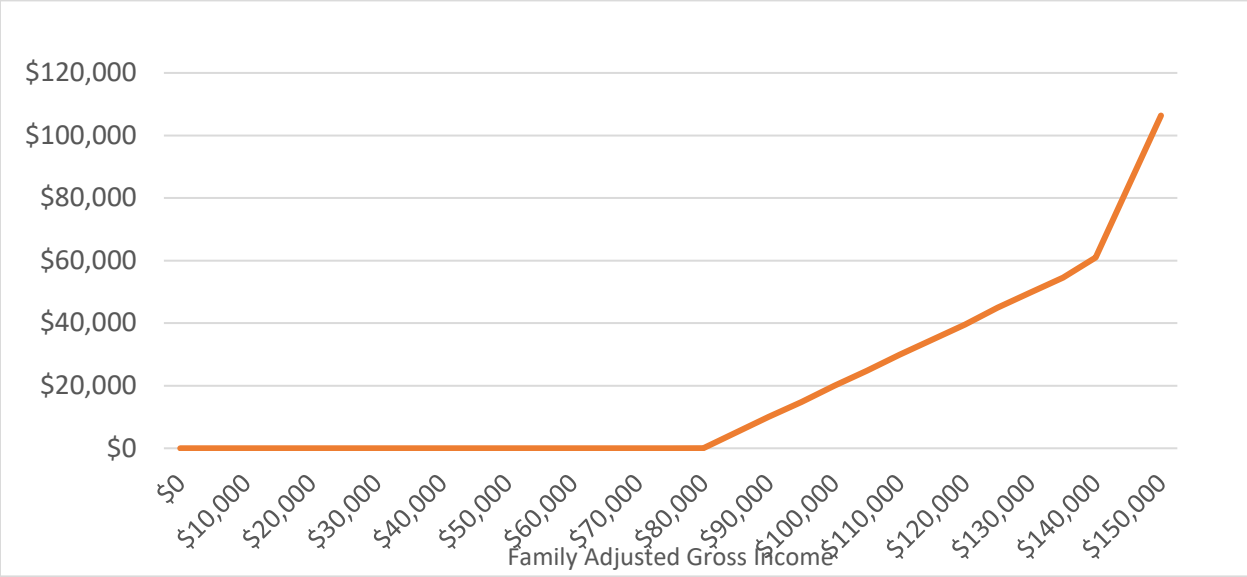
The Economic Policy Institute calculates monthly and annual costs for ten family types ranging from one single adult to a two-parent family with two children. For Rock County, the cost of living for the ten family types are:

- 1 person: $2,923
- 1 parent, 1 child: $4,561
- 1 parent, 2 children: $5,772
- 1 parent, 3 children: $7,321
- 1 parent, 4 children: $8,026
- Couple: $4,129
- 2 parents, 1 child: $5,752
- 2 parents, 2 children: $6,810
- 2 parents, 3 children: $8,120
- 2 parents, 4 children: $8,793

Using the EPI Budget for Rock County as a proxy for the state median cost of living, we can calculate the income remaining after monthly costs are paid. Using state grant applicant data for 2017-2018, we subtracted the annual cost of living from family adjusted gross income. As shown in Figure 2, Minnesota families with incomes less than $80,000 have no income remaining after modest living costs are taken into account. Starting at $85,000 AGI, income remaining increases steadily. This would indicate that only families with incomes above $85,000 have available income to contribute towards college. This is the

average across all ten family types and results may vary for an individual family. This version of the available income will be referenced as the “Family Budget Model”.

Figure 2. Available Income, Family Budget Model



Federal Poverty Guidelines

Another method of establishing reasonableness of contributions is to establish the income earned above the federal poverty guidelines. Federal poverty guidelines are established annually by the U.S. Department of Health and Human Services. The guidelines are a simplification of the poverty thresholds produced by the U.S. Census Bureau and used for administrative purposes, most notably determining financial eligibility for certain federal and state programs (e.g. food stamps, free and reduced price lunch in K-12). The guidelines set a minimal level of income needed to live in the United States by family size and geography. Depending on the federal program, the exact poverty level or a multiplier of the poverty level (e.g. 130%, 185%, 200%) may be used.

For this analysis, we examined income remaining above 100% of poverty guidelines (100% Poverty Model) and 200% of poverty guidelines (200% Poverty Model). In contrast to the Family Budget Model discussed above, available income, under the 100% Poverty Model, starts at an income of approximately $25,000 and rises steadily, as shown in Figure 3. Under the 200% Poverty Model, available income starts at $50,000 and rises, as shown in Figure 3. The first dollar of a family’s contribution under the Current Model starts at $30,000 family adjusted gross income. The calculation of available income using the Family Budget Model does not require a contribution from families unless they have an adjusted gross income higher than $85,000.

Both the 100% Poverty Model and the 200% Poverty Model have steeper lines in Figure 4 as compared to the Current Model, indicating that under the Current Model, a smaller proportion of each new dollar earned is expected to be contributed towards college costs. Under the Family Budget Model, the available income line has a steeper slope as well, indicating that families with incomes greater than $95,000 would contribute more than under the Current Model.

Figure 3. Available Income, Poverty Model

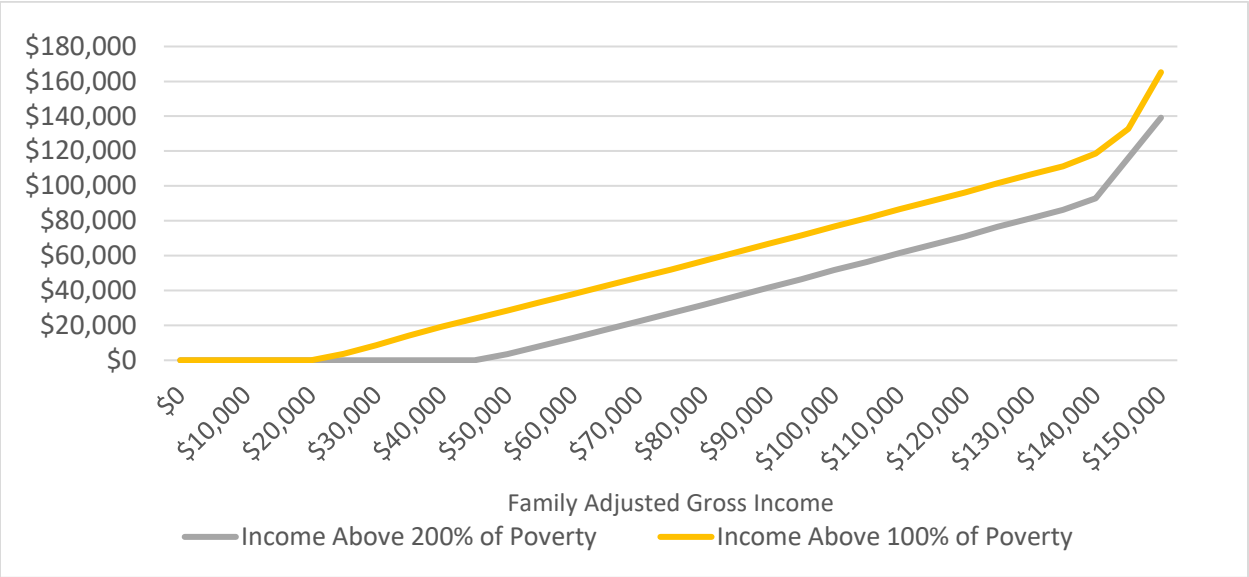
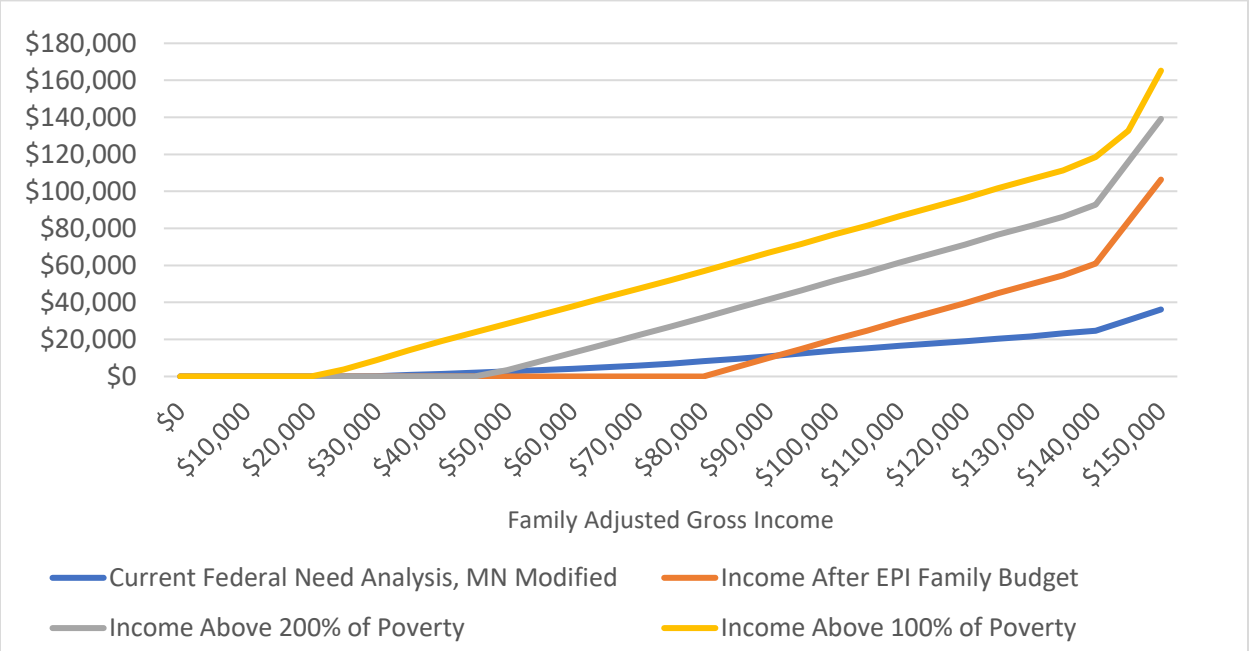


Figure 4. Available Income, All Definitions



At what income should the first dollar be contributed by families?

One of the key questions is at what income should families contribute their first dollar towards the cost of college. Currently average family contributions start at $35,000. However, families between $35,000 and $50,000 earn less than 200% of poverty. Also families between $35,000 and $85,000 do not earn enough to afford costs beyond a modest, yet adequate, standard of living. Thus Minnesota families earning between $35,000 and $85,000 may not have adequate resources to contribute to the cost of college. So state policy should pay close attention to the behavior of students and families in this income range.

It is also important to remember that state policy requires a contribution from both the family and the student. So families who are assessed a $0 contribution are not receiving a "free ride" but rather may still need to support the student in fulfilling his or her assigned student responsibility.

What percent of available income should be used?

Financial aid models don't assume that 100% of available income should be used for college costs. There are varying policies and recommendations.

- Federal needs analysis requires 47% of available income be contributed toward college costs. As Minnesota modifies the resulting Parent Contribution in state law, the comparable percentage after modification would be 39.5% under the Current Model.
- Lumina Foundation, in its 2017 report[3] "Benchmark for College Affordability" offered an alternative percentage. The report suggested that individuals and families making more than 200 percent of the poverty guideline can afford to save up to 10 percent of their income every year for 10 years.
- Under the Lumina Foundation analysis, if a family chooses not to save, this would be the equivalent of paying 25 percent of available income for each of the four years of college.

We can compare current contributions of families to a set of proposed contributions at 10%, 25% and 39.5% of available income.

Table 3 shows the available income for selected income ranges per the four models discussed above. State policy would not want families with incomes between $35,000-$85,000 contributing more than what is currently required. Therefore, the available income using the 100% of Poverty Model or 200% of Poverty Model would be eliminated from consideration.

Table 3. Total Annual Available Income, Parents of Dependent Students

Income	Current Model	100% of Poverty Model	200% of Poverty Model	Family Budget Model
Less Than $ 5,000	$0	$0	$0	$0
$25,000 to $29,999	$0	$3,708	$0	$0
$50,000 to $54,999	$6,845	$28,530	$3,430	$0
$75,000 to $79,999	$17,324	$52,031	$26,931	$0
$100,000 to $104,999	$35,273	$76,801	$51,701	$19,993
$125,000 to $129,999	$51,670	$101,612	$76,512	$44,898
$150,000 or More	$91,624	$165,234	$139,166	$106,375

39.5% Contribution Rate

Per the Current Model, 39.5% of available income should be contributed towards the cost of college as shown in Table 3. Families at $50,000 income would be asked to contribute approximately $2,700 annually or $300 per month for each of the 9 months a student is enrolled. In comparison, using the Family Budget Model, no contribution is required. Under current policy, families at $75,000 income are asked to contribute more than $6,800 annually or $760 per month for each of the 9 months a student is enrolled. Again, no contribution would be required at this income level per the Family Budget Model. By comparison, families earning $100,000 would be asked to contribute approximately $14,000 ($1,548 per

[3] https://www.luminafoundation.org/resources/the-rule-of-10

month enrolled) under the Current Model and approximately $8,000 ($877 per month enrolled) under the Family Budget Model.

25% Contribution Rate

A rate of 39.5 percent may be too high. If using the rate of contribution proposed in the Lumina Foundation report and assuming no savings for college, then 25% of available income should be contributed towards the cost of college as shown in Table 4. If we apply a 25% contribution rate to the Current Model, families at $50,000 income would be asked to contribute approximately $1,700 annually or $190 per month for each of the 9 months a student is enrolled. In comparison, using the Family Budget Model, no contribution is required. Comparatively, families at $75,000 income are asked to contribute more than $4,300 annually or $481 for each of the 9 months a student is enrolled, under the Current Model. Again, no contribution is required under the family Budget Model. By comparison, families earning $100,000 would be asked to contribute approximately $8,800 ($980 per month enrolled) under the Current Model and approximately $5,000 ($555 per month enrolled) under the Family Budget Model.

Table 4. Contributions Required assuming Varying Rates of Available Income Contributed

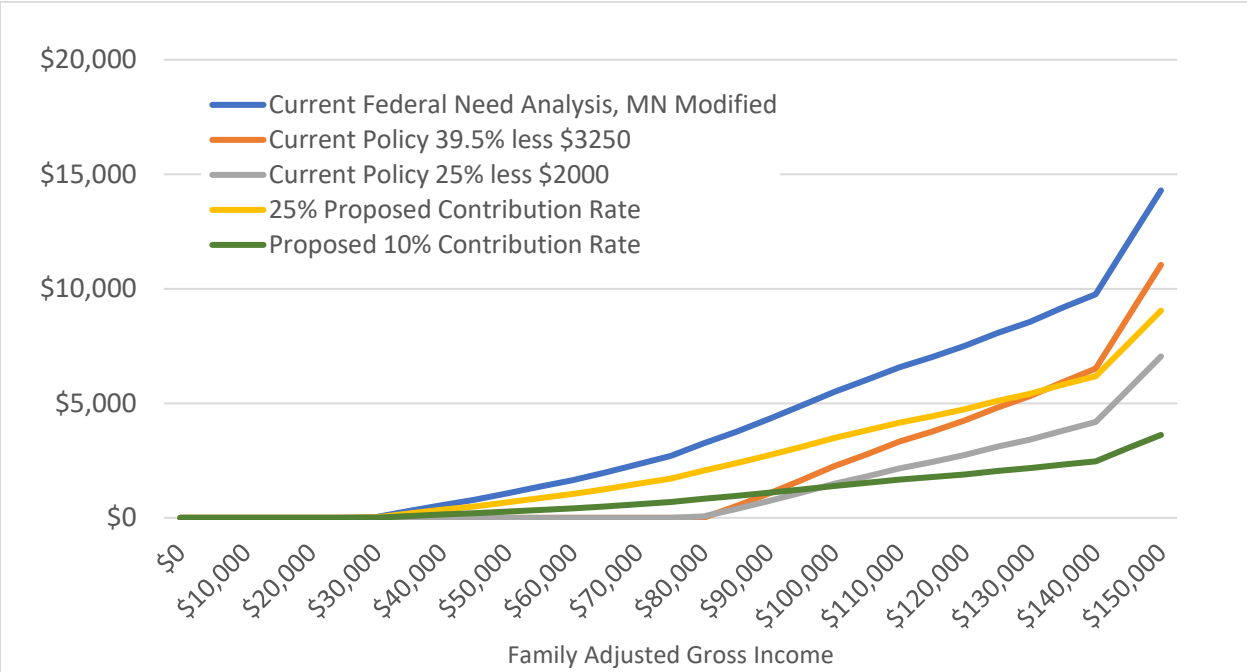
Parents of Dependent Students

Income	Current Model * 39.5%	Family Budget Model * 39.5%	Current Model * 25%	Family Budget Model * 25%	Current Model * 10%	Family Budget Model * 10%
Less Than $ 5,000	$0	$0	$0	$0	$0	$0
$25,000 to $29,999	$0	$0	$0	$0	$0	$0
$50,000 to $54,999	$2,704	$0	$1,711	$0	$685	$0
$75,000 to $79,999	$6,843	$0	$4,331	$0	$1,732	$0
$100,000 to $104,999	$13,933	$7,897	$8,818	$4,998	$3,527	$1,999
$125,000 to $129,999	$20,409	$17,735	$12,917	$11,224	$5,167	$4,490
$150,000 or More	$36,191	$42,018	$22,906	$26,594	$9,162	$10,638

10% Contribution Rate

A rate of 25 percent may also be too high. If using the rate of contribution proposed in the Lumina Foundation report and assuming a family saves for college over a ten year period, then 10% of available income should be contributed towards the cost of college as shown in Table 4. Under the Current Model with a 10% contribution rate, families at $50,000 income are asked to contribute approximately $685 annually or $76 per month for each of the 9 months a student is enrolled. In comparison, using the Family Budget Model, no contribution is required. Families at $75,000 income are asked to contribute approximately $1,700 annually or $192 per month for each of the 9 months a student is enrolled, under the Current Model. Again, no contribution is required per the Family Budget Model. By comparison, families earning $100,000 would be asked to contribute approximately $3,500 ($392 per month enrolled) under the Current Model and approximately $2,000 ($222 per month enrolled) under the Family Budget Model. The contributions required when using a 10 percent contribution rate are very low compared to the 39.5 percent rate.

Figure 5. Comparisons of Proposed Contributions



Findings

This analysis highlights two findings for consideration.

a. Lowering the rate from 39.5% (Figure 5, blue line) to 25% (Figure 5, yellow line) will reduce the contributions required from Minnesota families. Amending the AFR modifier in state law from 0.84 to 0.53 would result in a 25% contribution rate (47% Federal contribution * 0.84 = 39.5% MN Contribution; 47% Federal contribution * 0.53 = 25% MN Contribution). Changing the AFR modifier in state law does not resolve concerns that families with incomes $35,000 to $85,000 have $0 available income (Family Budget Model) to contribute towards the cost of college.

b. To achieve a reduction in family contribution targeted at families with incomes $35,000 to $85,000, state policy could move the income point at which the first dollar of contribution is required. As shown in Figure 5 below, state policy could achieve targeted reductions by:
    - Subtracting $3,250 of the contribution required under the 39.5% rate (Figure 5, orange line), or
    - Subtracting $2,000 of the contribution required under the 25% rate (Figure 5, gray line).

In conclusion, state policy could adapt to reduce the contributions of Minnesota families if they are too burdensome. To address issues of income availability for college for families $35,000 to $85,000, maintaining the current rate of contribution at 39.5% but subtracting $3,250 would be a strong policy option to consider. If seeking to reduce contributions across incomes $35,000+, then lowering the current contribution rate to 25% of available income would be the policy option to consider.

Measures of Affordability at Entry for Students

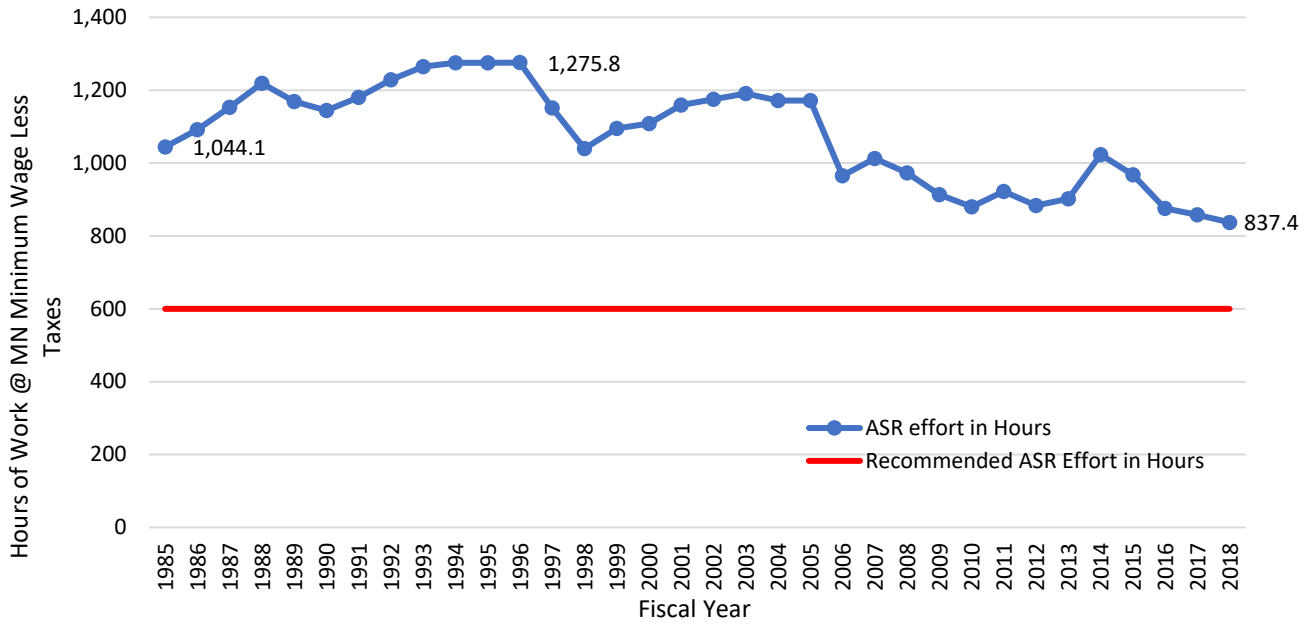
Minnesota expects students to make a significant personal investment in their own postsecondary education up front, called Assigned Student Responsibilities. Currently, students are expected to pay 50% of the price of attendance, representing equal responsibility for higher education by the student and the state. The 50% does not vary by family income, and, as the price of attendance increases by tuition and fees charged and enrollment level, the assigned student responsibility will increase. A student enrolling full-time will have a higher assigned student responsibility than a part-time student. A student enrolling at the University of Minnesota Twin Cities will have a higher assigned student responsibility than a student enrolling at Normandale Community College. This policy supports the assumption that as a student chooses higher priced educational options, they will pay a proportionally higher student responsibility.

Entry Affordability for students is measured by comparing the assigned student responsibility to student resources. Resources available to a student include savings, income from student work, federal student loans, and additional family resources. As with family contributions, it is important to assess if the percentage of resources required from students is reasonable.

Historical Trends in Work Expectations

Over time the number of hours of work at minimum wage less taxes needed to fully fund the Assigned Student Responsibility for a two-year student has declined, as shown in Figure 6. However, the current level of 837 hours is higher than the recommended level of work of 600 hours (12 hours per week, 50 weeks). For a 2-year student to be able to fully fund the ASR through 600 hours of work at minimum wage, Minnesota would need to reduce the ASR to 36%.

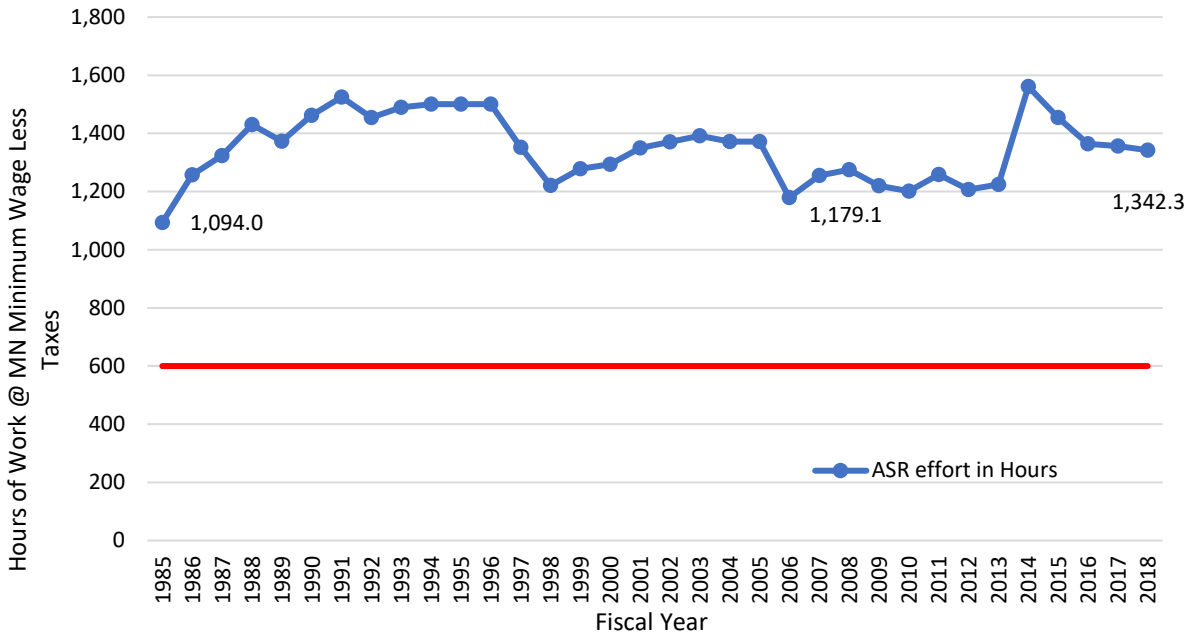
Figure 6. Hours Needed to Work to Cover the Assigned Student Responsibility for a 2-Year Student



The number of hours of work at minimum wage less taxes needed to fully fund the Assigned Student Responsibility for a four-year student has increased from just under 1,100 hours in 1985 to more than 1,300 hours in 2018, as shown in Figure 7. These levels are higher than the recommended level of work of 600 hours (12 hours per week, 50 weeks).

For a 4-year student to be able to fully fund the ASR through 600 hours of work at minimum wage, Minnesota would need to reduce the ASR to 22%.

Figure 7. Hours Needed to Work to Cover the Assigned Student Responsibility for a 4-Year Student



Current Contributions Required of Students

Using data on institution choices and enrollment level from State Grant applications in 2017-2018, we can derive the amount that students are currently expected to contribute towards the cost of college. This amount is referred to as the Assigned Student Responsibilities (ASR) in state law. While State Grant policy does require a contribution from students, it does not detail how students should pay for postsecondary education (e.g. work, loans, savings).

Table 5. Assigned Student Responsibilities (ASR) 2017-2018

System	Minimum ASR (3 credits, 1 semester)	Maximum ASR (15 credits, 2 semesters)
Minnesota State Colleges	$707	$7,462
Minnesota State Universities	$850	$9,257
University of Minnesota	$1,047	$11,812
Private 2-Year Programs	$707	$7,462
Private 4-Year Programs	$1,088	$11,812

Comparing Student Contributions to Available Resources

In order to assess the reasonableness of the Assigned Student Responsibilities, we can compare the maximum ASR by sector to several benchmarks:

- Hours worked at Minnesota work study wage rate less taxes
- Maximum first year federal student loan amount

- Hours worked at Minnesota minimum wage rate less taxes PLUS Maximum first year federal student loan amount

Hours Worked

The number of hours of employment needed to cover Assigned Student Responsibilities were calculated based on net earnings determined by wage and tax rates according to the following formulas:

- ASR = (Minnesota Wage Rate Large Employer * Hours Worked) – Taxes
- Taxes include Federal Income Tax Liability, Minnesota State Income Tax Liability, FICA (7.65%)

As shown in Table 6, a student would have to work between 850 and 1350 hours in a year at a wage rate of $9.65 per hour to cover the maximum assigned student responsibility. This level of work equates to 17 to 27 hours per week on average for 50 weeks per year.

This level of work exceeds the 10-15 hours per week recommended in research (cite). Students need to minimize hours worked in order to be effective students. Working more hours leads to increased dropout rates and longer time to completion.

Table 6.

Sector	Maximum ASR	Wage Rate	Total Hours	Average Hours Per Week	Total Wages	Less Taxes	Net Wages
Minnesota State Colleges	$7,462	$9.65	850	17	$8,203	$600	$7,603
Minnesota State Universities	$9,257	$9.65	1050	21	$10,133	$795	$9,338
University of Minnesota	$11,812	$9.65	1350	27	$13,028	$1,102	$11,926
Private 2-Year Programs	$7,462	$9.65	850	17	$8,203	$600	$7,603
Private 4-Year Programs	$11,812	$9.65	1350	27	$13,028	$1,102	$11,926

Hours Worked Plus Loans

A second option for benchmarking the assigned student responsibility would be to assume that students will borrow the maximum allowable federal student loan in the first year before working. As shown in Table 7, a student would have to work between 250 and 750 hours in a year at a wage rate of $9.65 per hour to cover the maximum assigned student responsibility in addition to borrowing the maximum federal student loan in the first year of college. This level of work equates to 5 to 15 hours per week on average for 50 weeks per year.

Table 7.

Sector	Maximum ASR	Maximum ASR - $5,500 Federal Student Loans	Wage Rate	Total Hours	Average Hours Per Week	Total Wages	Less Taxes	Net Wages
Minnesota State Colleges	$7,462	$1,962	$9.65	250	5	$2,413	$20	$2,393
Minnesota State Universities	$9,257	$3,757	$9.65	450	9	$4,343	$215	$4,128
University of Minnesota	$11,812	$6,312	$9.65	750	15	$7,238	$505	$6,733
Private 2-Year Programs	$7,462	$1,962	$9.65	250	5	$2,413	$20	$2,393
Private 4-Year Programs	$11,812	$6,312	$9.65	750	15	$7,238	$505	$6,733

10-15 Hours Worked Plus Minimal Loans

A third option for benchmarking the assigned student responsibility would be to assume that students will borrow the minimum federal student loan possible and work 10-15 hours per week. As shown in Table 8, a student would have to borrow between $2,900 and $5,100 per year in addition to working 10-15 hours per week at a wage rate of $9.65 per hour to cover the maximum assigned student responsibility.

Table 8.

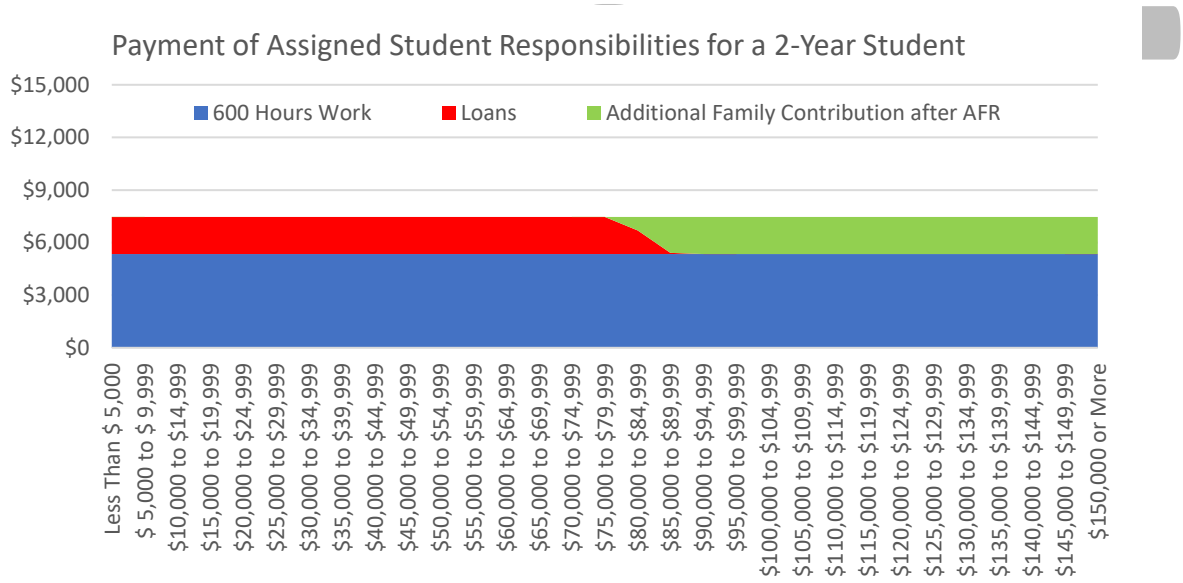
Sector	Maximum ASR	Federal Student Loan	Wage Rate	Total Hours	Average Hours Per Week	Gross Wages	Less Taxes	Net Wages
Minnesota State Colleges	$7,462	$2,902	$9.65	500	10	$4,825	$265	$4,560
Minnesota State Universities	$9,257	$4,697	$9.65	500	10	$4,825	$265	$4,560
University of Minnesota	$11,812	$5,080	$9.65	750	15	$7,238	$505	$6,733
Private 2-Year Programs	$7,462	$2,902	$9.65	500	10	$4,825	$265	$4,560
Private 4-Year Programs	$11,812	$5,080	$9.65	750	15	$7,238	$505	$6,733

Contributions Compared to Student Resources

2-Year Students

Using the assumption that 600 hours of work at minimum wage is a reasonable expectation of students, we can then calculate the additional borrowing required for students to fully meet the assigned student responsibility for students in a two-year program at the highest priced Minnesota State College. As discussed in the prior section, some families have available income above the level needed to meet the Assigned Family Responsibility, therefore the family may choose to contribute to funding the Assigned Student Responsibility. Under the Current Model at a 39.5% contribution rate, families from incomes above $85,000 meet this criteria. We apply the additional family resources against the loans to show that borrowing could be offset by contributions from the family. We show the combined contribution in figure x below. The primary finding is that students from families below $85,000 will need to borrow $2000 per year in order to meet the assigned student responsibility.

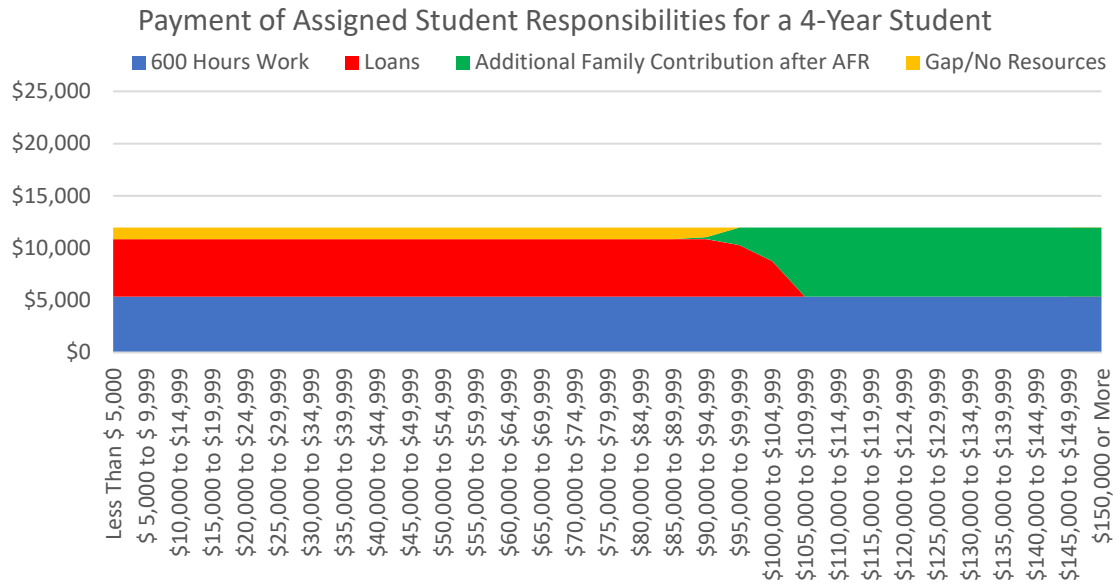
Figure 8.



4-Year Students

We repeated this calculation for the assigned student responsibility for students in a four-year program at the highest priced Minnesota public four-year university. The results differ from the two-year student outcomes. Students from families with incomes below $95,000 will not be able to fully meet the assigned student responsibility assuming 600 hours of work, $5,500 maximum federal student loan, and additional family contributions. We show the combined contribution in figure 9 below. The primary finding is that students from families below $95,000 will face a gap in resources of approximately $4,100 each year. To prevent gapping the assigned student responsibility would need to be reduced to 36%.

Figure 9.



Findings

The analysis of assigned student responsibilities in this section highlights two potential findings for consideration.

1. The primary finding is that lowering the ASR is needed in order to acknowledge that students from families with incomes below $95,000 cannot afford the ASR if attending a four-year college. These students will be forced to work more than 600 hours, borrow from non-federal or parent PLUS loans, choose to attend a lower priced institution, or to attend part-time.
2. The second finding is that there is no work only option for Minnesota students. The assigned student responsibility at its current level will require students at two-year colleges to borrow $2,100 per year or work more than 600 hours, or to attend part-time.

In conclusion, state policy could reduce the contributions of Minnesota students in order to ensure that students can use available resources to fully fund the price of attendance. At current funding levels, students will be forced to choose between working more and enrolling for fewer credits to delaying enrollment. Reducing the assigned student responsibility to 36% would resolve both of these issues.

Compare the family and student contributions to current college costs to determine if adequate resources exist

The overall effect of the reasonableness of the family and student contributions can be seen when combining analysis from the prior two sections.

When combined, we can see the income at which the families are most impacted. Among 2-year students, the gap between current AFR and recommended AFR occurs for families with incomes $30,000 to $90,000 as show below in figure 9 (full funding model) or figure 10 (gap by income). Among 4-year students, the AFR gap and the ASR gap combines to show inadequate funding for families with incomes between $0 and $105,000 as shown in Figure 11 (full funding model) or figure 12 (gap by income).

The gaps identified align with areas in which we may see increased borrowing by students and families, or may see more concern about the return on investment to a postsecondary credential.

The gaps combine to show the need to increase investment in State Grants for lower and middle-income families to ensure not only affordability but also postsecondary access and choice. Without re-investment, these students and families will need to find additional resources (e.g. non-federal loans, increased work) or make less expensive educational choices (e.g. two-year programs, less expensive programs, part-time enrollment).

Figure 9.

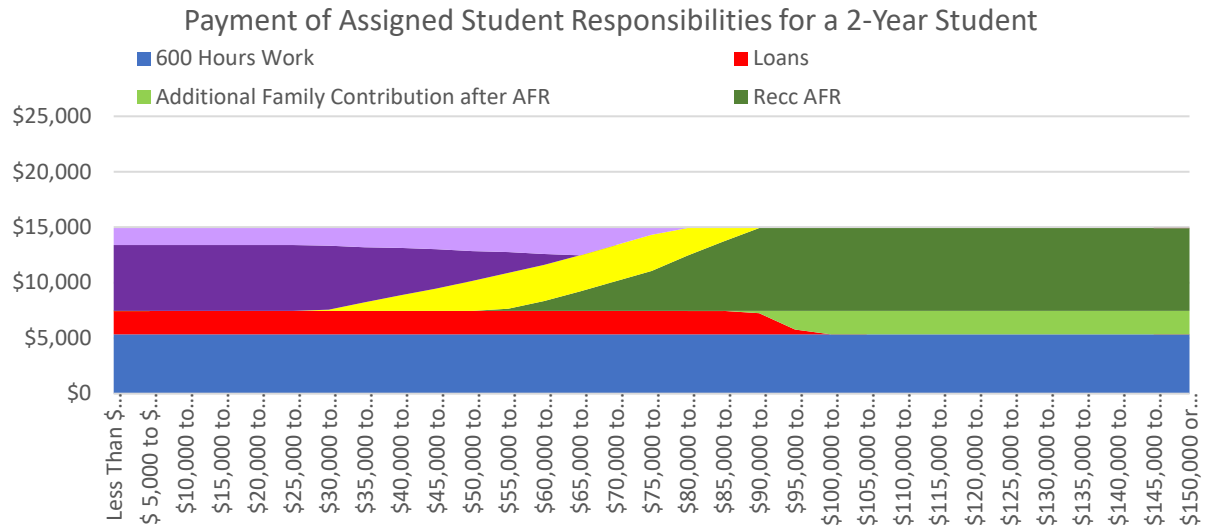


Figure 10.

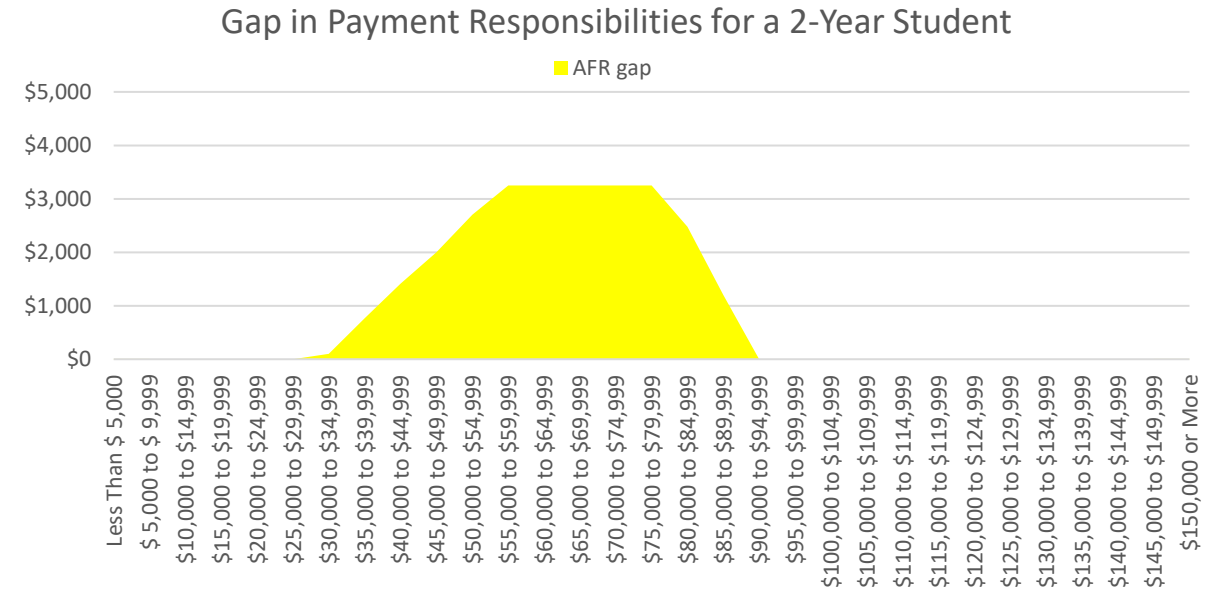


Figure 11.

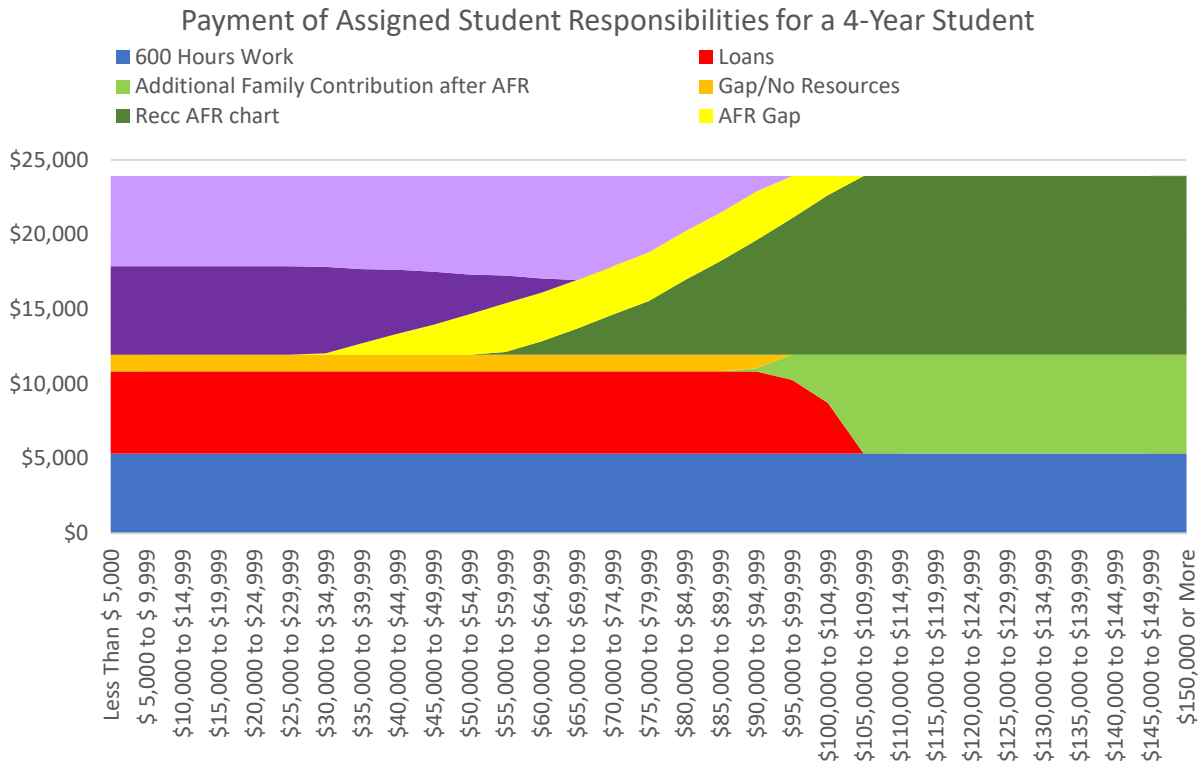
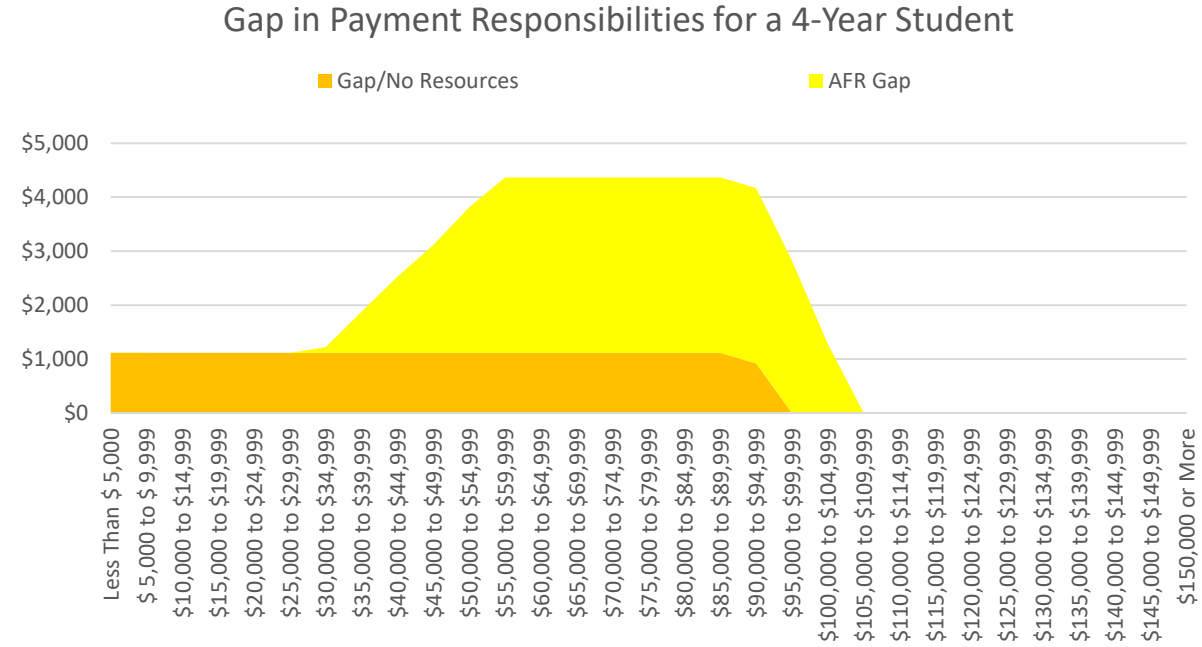


Figure 12.



Post-college affordability metrics

It is critical to understand that if affordability at entry is not considered reasonable by students and families, then they may face additional financial pressure during repayment or lower levels of return on their investment in higher education. Addressing affordability at entry robustly can serve to mitigate these post-college financial pressures.

Affordability over a Lifetime: Return on Investment

With the average cost of college exceeding $15,000 per year, prospective college students, parents and policymakers are all trying to better understand the value of college education, particularly as it applies to future decisions in the job market. The easiest way to measure return on investment of a college education is compare net earnings after college attributable to the education gained to the net cost of the education. For students, ideally the net earnings over the first 10 years after college would exceed the cost of college – a positive return on investment.

Analysis of census data on personal income by education level, shows a net gain in income of approximately $4,000 per year of college ($8,000 associate degree; $16,000 bachelor's degree). [Placeholder estimates from census data, update with latest data.] Similar patterns in earnings are seen among recent Minnesota college graduates with increases by education level widening when only full-time workers are analyzed.

Using the results of the prior section for students at a four-year college, families with an adjusted gross income of $50,000 contribute $2,704 and students contribute $11,963 for each year of college or $14,667. Assuming full-time enrollment, the cumulative contribution would be $14,667 * 4 or $58,688. Using the earnings premium determined from analysis of census data, this level of contribution would be recouped in 3.67 years. The return on investment is positive when using median debt and earnings data. However, there are career pathways that earn less than median earnings but typically incur similar costs (e.g. early childhood educators). These occupations may experience less positive returns on investments.

Policy options for addressing issues of return on investment include program specific grants or scholarships which decrease educational costs on the front end.

Affordability of Repayment: Cumulative Debt Burden

Depending on the award types and amounts of their loans, graduates may have several repayment options. Several factors determine their repayment amount, including:

- Total amount borrowed
- Interest rate(s)
- Interest accruing while in school or deferment
- Loan forgiveness options
- Loan term(s)
- Graduates' income

Potential repayment options for graduates include:

- Standard repayment plan: monthly payments made for up to 10 years.
- Graduated repayment: monthly payments made for up to 10 years (payments start low and increase every two years).
- Pay as you earn: monthly payments are limited to 10% of current discretionary income.
- Income-based repayment: monthly payments are generally equal to 15% of current discretionary income (10% if one is borrowing federal loans for the first time).
- Income-contingent repayment: monthly payments are the lesser of what one would pay on a 12-year standard repayment plan adjusted based on current income, or 20% of current discretionary income.

Using the annual median wage ($35,529) for a bachelor's degree holder two years after graduating during the 2013-14 academic year, the following repayment plans are available assuming the borrower owes $25,969 in loans (the state average cumulative median). The estimates are based on a 6.8 percent interest rate for federal unsubsidized loans. Using loan estimates for all repayment options, graduates' loan payments equal 8%-24% of annual gross earnings under a graduated repayment plan and 10%-14% under a standard or income-based repayment plan as shown in Table 9.

Policy options for addressing issues of repayment affordability include program or occupation specific loan repayment assistance or income-based repayment options which decrease the percentage of income required for payments.

Table 9. Loan Repayment Options for Minnesota Bachelor's Degree Graduates (Annual Earnings $35,529)

Repayment Plan	Original Borrowed Amount	Interest Paid	Total Repayment Amount	Repayment Term (In Months)	Gross Monthly Payment	Gross Percent of Monthly Income
Standard	$25,969	$9,921	$35,890	120	$299	14%
Graduated	$25,969	$12,651	$38,620	120	$173-$518	8%-24%
Revised Pay As You Earn	Does Not Qualify					
Pay As You Earn	Does Not Qualify					
Income-Based Repayment	$25,969	$12,225	$38,194	137	$218-$299	10%-14%
Income-Contingent Repayment	Does Not Qualify					

Source: U.S. Department of Education https://studentloans.gov/myDirectLoan/repaymentEstimator.action

Ensuring the maximum efficiency in state policy

A number of state policy considerations should be taken into account in order to achieve maximum effectiveness when addressing issues of affordability.

- Comprehensiveness of eligibility – Effective policy should maximize the percent of targeted students eligible including adult learners and part time students.
- Application processes – Application forms and processes should be simple/understandable and not pose barriers to targeted students or their families.
- Tuition policies - Financial aid policy must take into consideration tuition rates. Ensuring alignment between tuition and financial aid policies is crucial to maintaining affordability.
- Maintenance of Effort – State investments need to be sustained over time and must ensure that funding keeps up with actual college costs.
- Student choice/market forces – Student choice encourages healthy competition between public and private institutions and applies market pressure to incent institutions to ensure students succeed.
- Institutional responsibility for cost effectiveness and productivity – Institutions are critical players in student success and affordability. Institution cost savings/cost effectiveness form the basis of higher education spending. However, a balance must be achieve in order to ensure that cost savings to not undermine student success.
- Investments in educational innovations to increase cost effectiveness and productivity – State policy should encourage institutions to innovate to increase cost effectiveness but not punish them by reducing funding when they do so.

Conclusion

In order for Minnesota to address issues of affordability, the following findings should be considered.

1. **Clear articulation of state and family responsibilities / transparency and predictability**
    - Tuition fee increases are predictable and stable for students, while continuing to deliver high quality post-secondary education.
    - Increase simplicity and transparency for students and families
        - Enhance access to student financial assistance through simplified, user-friendly materials, technology, policies and programs.
        - Work with federal and institutional counterparts to reduce complexity of student financial assistance.
        - Continue to develop materials and system changes to enhance simplicity for students.
        - Enhance responsiveness to emerging needs of students.
        - Increased equity.

2. **Policy changes to family and student contributions**

Findings – Assigned Family Responsibility

This analysis highlights two potential policy findings.

- Lowering the rate from 39.5% (Figure 5, blue line) to 25% (Figure 5, yellow line) will reduce the contributions required from Minnesota families. Amending the AFR modifier in state law from 0.84 to 0.53 would result in a 25% contribution rate (47% Federal contribution * 0.84 = 39.5% MN Contribution; 47% Federal contribution * 0.53 = 25% MN Contribution). Changing the AFR modifier in state law does not resolve concerns that families with incomes $35,000 to $85,000 who have $0 available income (Family Budget Model) to contribute towards the cost of college.

- To achieve a reduction in family contribution targeted at families with incomes $35,000 to $85,000, state policy could move the income point at which the first dollar of contribution is required. As shown in Figure 5 below, state policy could achieve targeted reductions by:
    - Subtracting $3,250 of the contribution required under the 39.5% rate (Figure 5, orange line), or
    - Subtracting $2,000 of the contribution required under the 25% rate (Figure 5, gray line).

In conclusion, state policy could reduce the contributions of Minnesota families if they are too burdensome. To address issues of income availability for college for families $35,000 to $85,000, maintaining the current rate of contribution at 39.5% but subtracting $3,250 would be a strong policy option to consider. If seeking to reduce contributions across incomes $35,000+, then lowering the current contribution rate to 25% of available income would be the policy option to consider.

Findings – Assigned Student Responsibility

The analysis of assigned student responsibilities in this section highlights two potential policy findings.

- The primary finding would be that lowering the ASR is needed in order to acknowledge that students from families with incomes below $95,000 cannot afford the ASR if attending a four-year college. These students will be forced to work more than 600 hours, borrow from non-federal or parent PLUS loans, choose to attend a lower priced institution, or to attend part-time.
- The second finding is that there is no work only option for Minnesota students attending full-time at two-year programs. The assigned student responsibility at its current level will require student to borrow $2,100 per year or work more than 600 hours, or to attend part-time.

In conclusion, state policy could reduce the contributions of Minnesota students in order to ensure that students can use available resources to fully fund the price of attendance. At current funding levels, students will be forced to choose between working more and enrolling for fewer credits to delaying enrollment. Reducing the assigned student responsibility to 36% would resolve both of these issues.

3. Focus on student outcomes

The true measure of Minnesota's effectiveness at managing its investments are the outcomes of its students. Students must succeed in order for the state to recoup its investment. For students, college is never affordable unless they complete.

However enrolling in college does not equate to completing college, so states may want to weight affordability measures at the institution level by the percent of students who complete their program in order to obtain a truer picture of effective affordability policies. Add more about institutional accountability here and how to track it here.

Institutions play a critical role in providing students with information about costs and resources. Institutions also maintain the central support services and programs needed to ensure students persist in and complete college. Add need to better understand the practices implemented at institutions here.

APPENDIX A. A BETTER FRAMEWORK FOR MEASURING AFFORDABILITY – STUDENT/FAMILY AFFORDABILITY

	Affordability		
	Define affordability: the ability to purchase needed/appropriate education and still have sufficient income to enjoy at least the minimum consumption of other essential goods and services.		
Category	**Entry Affordability**	**Overall Income Affordability**	**Post-College Repayment Affordability**
Description	*Borrowers can qualify for adequate financial resources to access to education; meet basic financial requirements for initial enrollment;*	*Ratio of net educational price to future income*	*Measure of debt payments to post-college income, payment burden*
Student / Family Affordability	**Entry Affordability:** Main Question - Can the student access adequate financial resources to pay for the first year of educational costs? • What percent of current family income is required to cover net price? To cover the assigned family responsibility? • What level of cash, work and borrowing is required by the student to cover the student share?	**Lifetime affordability: Return on Investment** Is the cumulative net price less than net increase in wages post-college (positive return on investment)?	**Cumulative Debt benchmarks[4]:** • Life cycle model (consumption / permanent income) • 8% rule • Over-indebtedness (debt-service ratios: spending more than 25 percent of gross income on credit commitments; and spending more than 50 percent of gross income on credit commitments and household commitments)
Individual Metrics	**EA1: AFR** **EA2: STUDENT SHARE as measured by HOURS at MINIMUM WAGE** **EA3: STUDENT SHARE less Annual Federal Loan as measured by HOURS at MINIMUM WAGE**	**ROI1: (Income Gain * Years) less (Net Price * Program Time)**	**CD1: Cumulative Debt Payments as a percent of gross income**
State Affordability	**Education Affordability Curve** (affordability risk curve) – • Is the percent of income required across all family incomes reasonable? • Is the level of cash, work and borrowing required for all students reasonable?	**ROI Index:** • Across incomes and programs, is the cumulative net price less than net increase in wages post-college?	**Over-indebtedness index:** • What percent of graduates have debt levels that meet the threshold? o Threshold = 8% of gross income
State Metrics	**EA4: NET PRICE MINUS AFR MINUS ASR by Family Status Across Incomes**	**ROI2: (Income Gain * Years) less (Net Price * Program Time) Across Incomes and Programs**	**CD2: Cumulative Debt Payments as a percent of Median Annual Wages Across Programs**
Notes:	Weight by % of students who actually complete their education		

[4] https://research.collegeboard.org/sites/default/files/publications/2012/9/researchinreview-2006-12-benchmarks-manageable-student-debt.pdf

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