Budget Planning Council

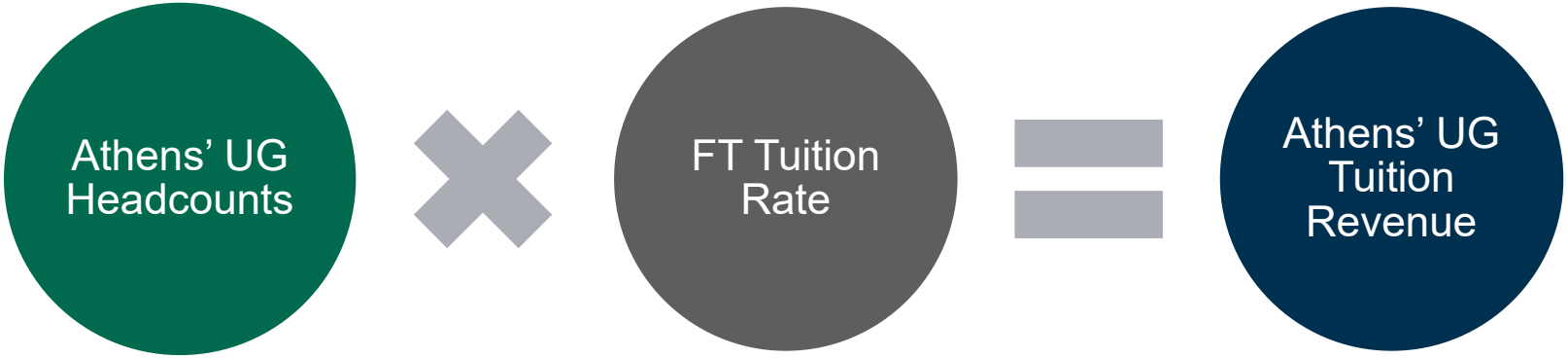
Central Revenue Models: Athens UG Tuition Model & SSI

December 1, 2022

Athens Main UG Tuition Model

- Methodology
- Data Sources: Historical Actuals & Projections
- Example of Student Cohort Trends
- Current Athens Main UG Tuition
- Drivers of Annual Change
  - Rate Increases
  - Incoming Cohort

FY22-27 Athens Tuition Model: Methodology



Factors to Consider:

- Student Headcounts, by Tuition Guarantee cohorts (Tracked: 6 YRS)
- Tuition Rates, by student cohort
- Not all students are full-time (Model Adjusts for FT/PT Factor)
- Summer Term: Less predictable

Athens Tuition Model: Components

- Incoming Students
  - New Freshman
  - Transfers
- Persistence Rates
  - How incoming students translate into continuing students
  - Fall to Spring and Year to Year
- Annual Total Enrollment by cohort based on persistence
- Cohort Tuition Rates – Existing and Future Assumptions

Athens UG Cohort Tuition Rates

Athens Undergraduate Fees (Per Semester - Full Time) Assumptions														
OHIO Guarantee Students	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Cohort Instruction	5.10%	1.70%	1.30%	1.30%	3.50%	0.00%	1.80%	4.00%	4.50%	4.50%	4.00%	4.00%	3.50%	3.50%
Cohort General Fee	5.10%	1.70%	1.30%	1.30%	3.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cohort Non-resident Surcharge	$ -	$ 250	$ -	$ -	$ 165	$ -	$ 88	$ 199	$ 233	$ 243	$ 226	$ 235	$ 214	$ 221
OHIO Guarantee Students	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Cohort Instruction	5,114	5,201	5,268	5,336	5,522	5,522	5,612	5,856	6,156	6,469	6,760	7,063	7,338	7,595
Cohort General Fee	660	671	680	688	712	712	712	712	712	712	712	712	712	712
Cohort Non-resident Surcharge	4,482	4,732	4,732	4,732	4,897	4,897	4,985	5,184	5,417	5,660	5,886	6,121	6,335	6,556
Career Fee					72	72	96	108	108	108	108	108	108	108

- Top is the rate increases each year
- 2015 was the implementation of Guarantee – 5.1% includes rolling course fees into tuition.
- After 2019, stopped increasing the General fee to stop impact on Athens Graduate Students
- Non-Resident fee is sometimes increased
- Green are the increases started this year
- FY24-28 is the current planning assumption for modeling purposes. We won't know what legislative constraints will be until March.
- Bottom is how those rate increases show up in actual dollars.
- Career fee started in 2019 and is restricted to added Guarantee Plus services

Incoming Enrollment Assumption

Initial Cohort Assumption	Cohort 18-19	Cohort 19-20	Cohort 20-21	Cohort 21-22	Cohort 22-23 Budget	Cohort 22-23 Census	Cohort 23-24	Future Cohorts
Fall	2018	2019	2020	2021	2022	2022	2023	2023
New Freshman - Resident	3427	3199	2682	3055	3082	3908	3460	3460
New Freshman - Non-Resident	553	472	444	609	629	533	540	540
Total New Freshman	3980	3671	3126	3664	3711	4441	4000	4000
Transfers - Resident	388	286	288	256	280	259	270	270
Transfers - Non-Resident	57	60	37	53	45	51	55	55
Total Transfers	445	346	325	309	325	310	325	325
Total Cohort	4425	4017	3451	3973	4036	4751	4325	4325

- The 18-19 through 21-22 are actual enrollments. In the red box is the comparison of what we budgeted last April vs. what we actually enrolled this fall.
- The 23-24 cohort is currently modeled at 4000 freshman and the same for future years
- There are separate assumptions for Resident and Non-Resident since Non-Resident pay the additional fee
- Transfers will add to tuition and non-resident revenue but they will be in the system fewer years

Cohort Tuition Rates

Student Cohort	Fall	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cohort 15-16	2015	5,114	5,114	5,114	5,114	5,201	5,268	5,336	5,522	5,522
Cohort 16-17	2016		5,201	5,201	5,201	5,201	5,268	5,336	5,522	5,522
Cohort 17-18	2017			5,268	5,268	5,268	5,268	5,336	5,522	5,522
Cohort 18-19	2018				5,336	5,336	5,336	5,336	5,522	5,522
Cohort 19-20	2019					5,522	5,522	5,522	5,522	5,522
Cohort 20-21	2020						5,522	5,522	5,522	5,522
Cohort 21-22	2021							5,612	5,612	5,612
Cohort 22-23	2022								5,856	5,856
Cohort 23-24	2023									6,156

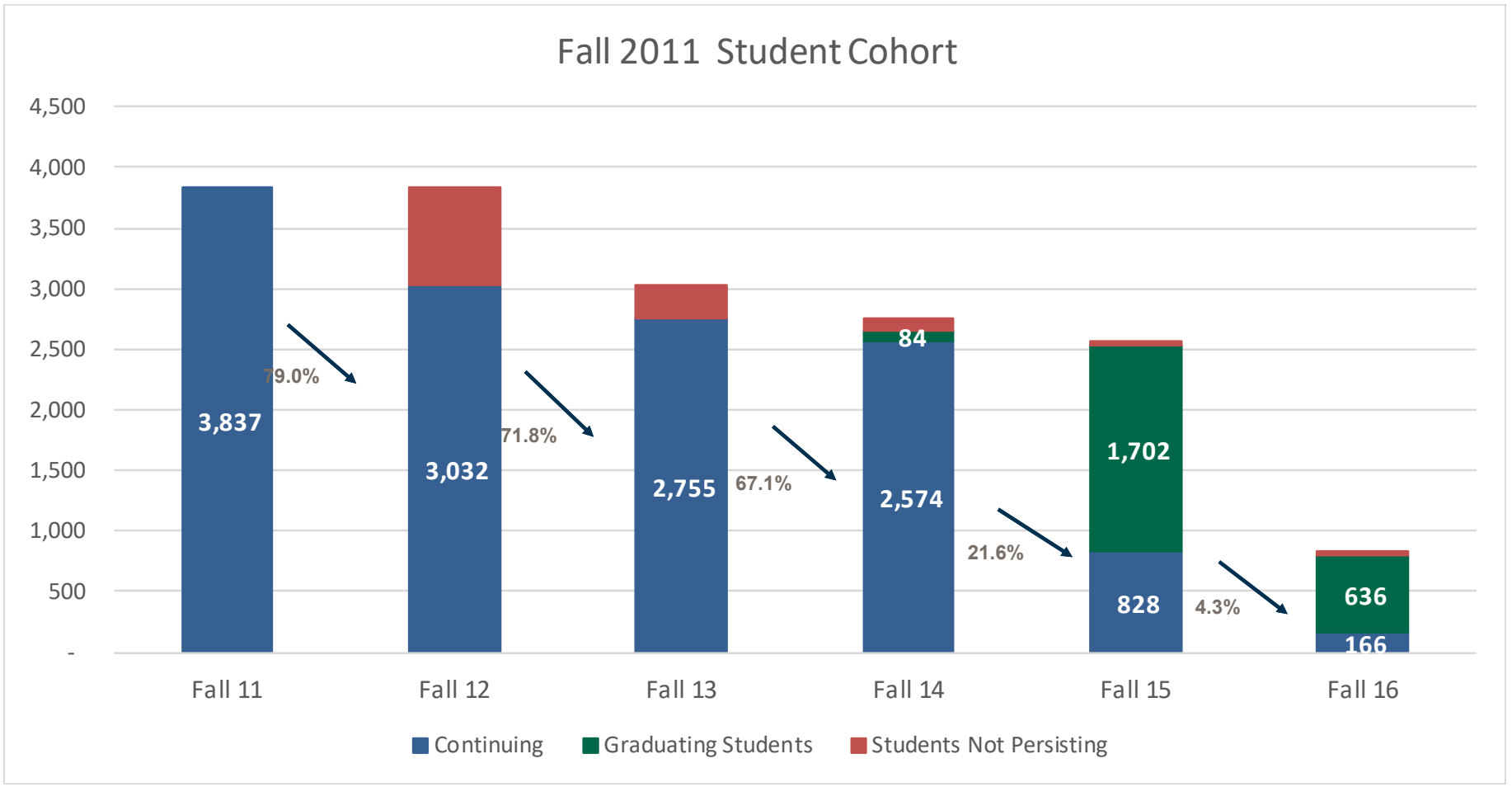
- To calculate revenue, we will need to determine the number of students that came in each year (cohort) and apply the different tuition rates they will pay
- Some student stay more that four years, which is past their guarantee. After the fourth year (green) students move up the rate for the incoming cohort for that year and keep moving up each year.
- Rates for 2019 and 2020 are the same because we had a 0% increase for the 2020 class

Cohort Persistence Patterns

				Fall	Fall	Fall	Fall	Fall	Fall	Spring	Spring	Spring	Spring	Spring	Spring
	Student Type	Residency	Fall Cohort	1	2	3	4	5	6	1	2	3	4	5	6
Cohort 15-16	First-Time	Resident	2015	100.0%	81.1%	75.2%	69.2%	18.3%	4.4%	93.6%	78.0%	73.5%	65.3%	12.5%	3.2%
Cohort 16-17	First-Time	Resident	2016	100.0%	80.1%	72.9%	66.4%	18.5%	3.4%	93.0%	76.8%	70.8%	62.4%	12.0%	2.3%
Cohort 17-18	First-Time	Resident	2017	100.0%	81.7%	75.1%	69.0%	17.1%	3.5%	92.6%	78.2%	73.4%	63.5%	11.8%	2.7%
Cohort 18-19	First-Time	Resident	2018	100.0%	81.1%	73.6%	68.0%	18.3%	3.8%	91.7%	76.3%	71.6%	62.2%	12.1%	2.3%
Cohort 19-20	First-Time	Resident	2019	100.0%	80.8%	75.4%	67.9%	17.6%	3.8%	92.3%	76.9%	72.2%	62.7%	12.3%	2.3%
Cohort 20-21	First-Time	Resident	2020	100.0%	80.8%	72.0%	68.0%	16.8%	3.5%	90.3%	75.6%	72.4%	62.9%	11.6%	2.5%
Cohort 21-22	First-Time	Resident	2021	100.0%	78.9%	75.3%	68.8%	17.1%	3.7%	91.1%	76.2%	73.4%	63.8%	12.2%	2.4%
Cohort 22-23	First-Time	Resident	2022	100.0%	82.5%	76.8%	70.0%	16.6%	3.4%	91.2%	79.2%	74.7%	64.7%	11.5%	2.2%
Cohort 23-24	First-Time	Resident	2023	100.0%	80.7%	74.7%	68.9%	16.8%	3.5%	90.9%	77.0%	73.5%	63.8%	11.8%	2.4%

- To determine revenue for each cohort, we need to predict how many of the incoming freshmen of a cohort continue each term.
- We have predictive modeling for how many students continue from Fall 1 to Spring 1 to Fall 2 to Spring 2 etc. These rates are different by cohort since the characteristics are different for each.
- This is tracked for 6 years since there is a small number (2-4%) that are here that long.
- The numbers for Cohort 22-23 are preliminary based on the initial characteristics at census
- The 2023-24 number are an average of the three cohorts above that row.
- These are the numbers for freshmen-resident students. There is a similar table for freshmen-non-resident, transfer-resident and transfer-non-resident students

Effect of Persistence and Graduation on Enrollment



Applying Persistence

Student Type	Residency	Fall Cohort	Fall 2022	Fall 2023	Fall 2024	Fall 2025	Fall 2026	Fall 2027	Fall 2028	Spring 2023	Spring 2024	Spring 2025	Spring 2026	Spring 2027	Spring 2028	Spring 2029
First-Time	Resident	2018	624	130	-	-	-	-	-	414	79	-	-	-	-	-
First-Time	Resident	2019	2,164	562	121	-	-	-	-	1,999	392	74	-	-	-	-
First-Time	Resident	2020	1,916	1,810	446	94	-	-	-	1,926	1,672	308	67	-	-	-
First-Time	Resident	2021	2,400	2,291	2,092	519	113	-	-	2,319	2,232	1,941	371	73	-	-
First-Time	Resident	2022	3,908	3,223	3,001	2,734	647	131	-	3,565	3,096	2,920	2,529	449	87	-
First-Time	Resident	2023	-	3,460	2,793	2,585	2,385	581	123	-	3,144	2,665	2,543	2,207	407	82
First-Time	Resident	2024	-	-	3,460	2,793	2,616	2,395	581	-	-	3,151	2,681	2,556	2,218	409
First-Time	Resident	2025	-	-	-	3,460	2,813	2,619	2,400	-	-	-	3,150	2,696	2,562	2,222
First-Time	Resident	2026	-	-	-	-	3,460	2,800	2,607	-	-	-	-	3,148	2,681	2,554
First-Time	Resident	2027	-	-	-	-	-	3,460	2,802	-	-	-	-	-	3,150	2,686
First-Time	Resident	2028	-	-	-	-	-	-	3,460	-	-	-	-	-	-	3,149
			11,136	11,476	11,913	12,185	12,034	11,986	11,973	10,317	10,615	11,059	11,341	11,129	11,105	11,102

- Once we have the incoming class size (actual and future projection), we can apply the persistence percentage assumptions to the number of incoming students to estimate how many students will be paying tuition each year.
- If you follow a cohort across you can see how the numbers shrink over each fall to spring and year to year transition. At the bottom is the total number of students that for year
- We then multiply the number of students in each cell by the tuition rate for that cohort in that year. This again is the data for just the resident freshman. A similar table is created for the other non-resident and transfer combinations

Total Enrollment

Athens Undergraduate Fall Headcount Projection							
Fall		**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Guarantee* Headcount	Resident	12,220	12,668	12,943	12,792	12,748	12,734
	Non-Resident	1,972	2,041	2,016	2,017	2,017	2,016
Non-Guarantee Headcount	Resident	810	839	857	847	845	844
	Non-Resident	61	63	63	63	63	63
Total Headcount (Fall)	Resident	13,030	13,507	13,800	13,639	13,593	13,578
	Non-Resident	2,033	2,104	2,079	2,080	2,080	2,079
	Total	**15,063**	**15,611**	**15,879**	**15,719**	**15,673**	**15,657**

- This is the total headcounts for the Fall terms for the future tuition revenue projection
- Note in the middle that there is also a projection for the small number of non-guarantee (mostly non-degree students) in the system. They have their own different non-guarantee tuition rate and their own persistence pattern.
- The revenue is not just driven by the size of a freshman class – the varying persistence rates for each cohort and each type of student (freshmen vs. transfer and resident vs. non-resident) have to be taken into account and influence the total number of students attending. The model takes into account how these numbers also vary fall to spring – this table just simplifies things by showing only fall which is traditionally how enrollment is reported.
- So be careful about assuming that a large freshman class instantly fixes a revenue challenge

Translating into Revenue

			Instructional	Instructional	Instructional	Instructional	Instructional	Instructional	Instructional
			Fall	Fall	Fall	Fall	Fall	Fall	Fall
Student Type	Residency	Fall Cohort	2022	2023	2024	2025	2026	2027	2028
First-Time	Resident	2018	$ 3,445,578	$ 717,829	$ -	$ -	$ -	$ -	$ -
First-Time	Resident	2019	$ 11,949,089	$ 3,103,229	$ 679,052	$ -	$ -	$ -	$ -
First-Time	Resident	2020	$ 10,579,692	$ 9,994,386	$ 2,502,952	$ 550,464	$ -	$ -	$ -
First-Time	Resident	2021	$ 13,468,800	$ 12,857,092	$ 11,740,304	$ 3,039,264	$ 695,628	$ -	$ -
First-Time	Resident	2022	$ 22,885,248	$ 18,873,888	$ 17,573,856	$ 16,010,304	$ 3,982,932	$ 847,439	$ -
First-Time	Resident	2023	$ -	$ 21,299,760	$ 17,193,708	$ 15,913,260	$ 14,682,060	$ 3,758,489	$ 831,480
First-Time	Resident	2024	$ -	$ -	$ 22,382,740	$ 18,067,917	$ 16,922,904	$ 15,493,255	$ 3,927,560
First-Time	Resident	2025	$ -	$ -	$ -	$ 23,389,600	$ 19,015,880	$ 17,704,440	$ 16,224,000
First-Time	Resident	2026	$ -	$ -	$ -	$ -	$ 24,437,980	$ 19,776,400	$ 18,413,241
First-Time	Resident	2027	$ -	$ -	$ -	$ -	$ -	$ 25,389,480	$ 20,561,076
First-Time	Resident	2028	$ -	$ -	$ -	$ -	$ -	$ -	$ 26,278,112
			63,013,105	66,846,184	72,072,612	76,970,809	79,737,384	82,969,503	86,235,469

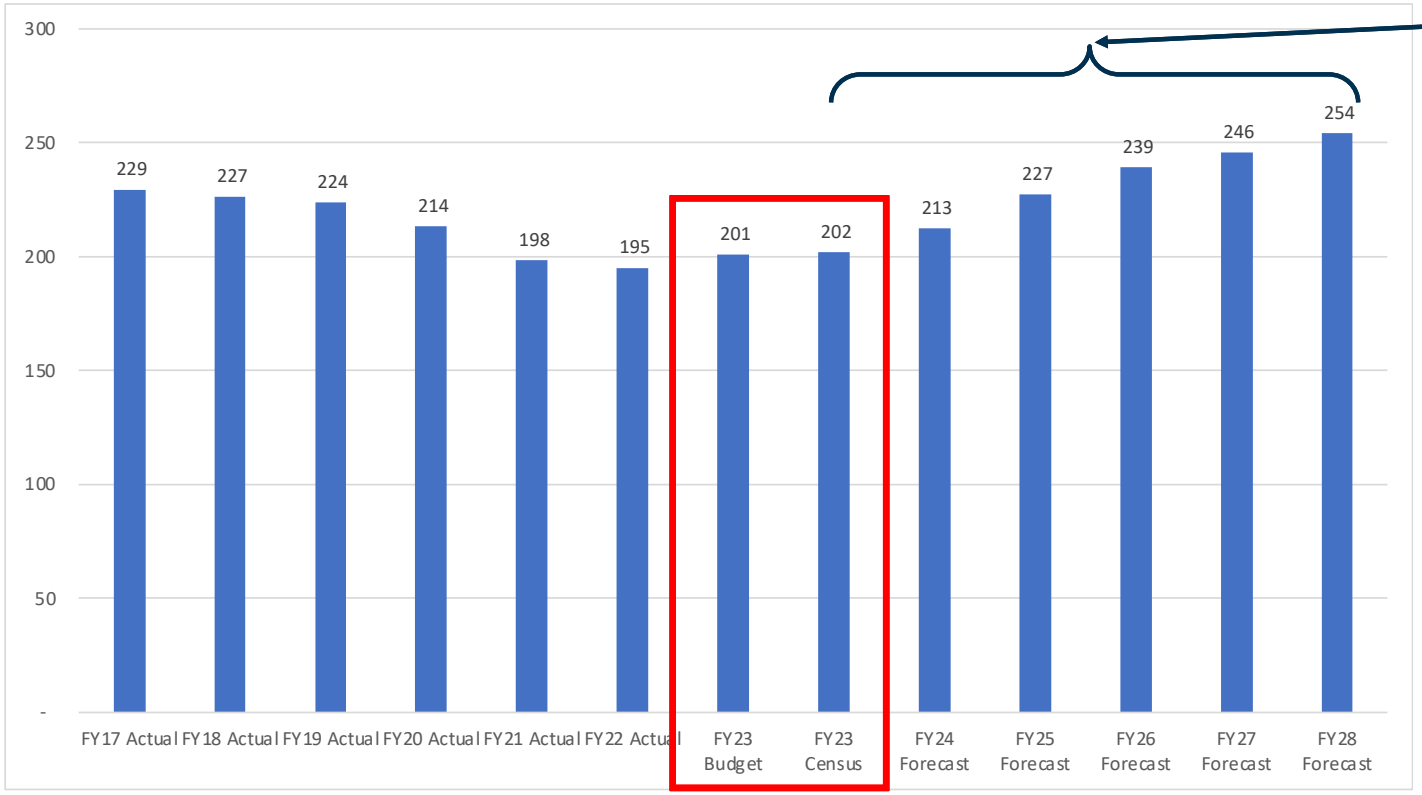
- Once you know the number of students for each cohort in a particular term, you can apply the tuition rate for that cohort for that year to come up with revenue
- Here you see the revenue for just Fall – Spring is also calculated to the right
- As before – these are the revenues for Freshmen Residents. Additional calculations are made for non-residents and both types of transfer students as well as non-guarantee students

Total Athens UG Revenue Projection

	FY23	FY24	FY25	FY26	FY27	FY28
Fall	$ 99,737,968	$ 105,213,997	$ 112,713,826	$ 118,798,566	$ 122,715,210	$ 127,174,480
Spring	$ 92,242,887	$ 97,343,444	$ 104,579,511	$ 110,459,708	$ 113,440,084	$ 117,665,628
Summer	$ 9,993,090	$ 9,952,138	$ 10,064,965	$ 10,046,479	$ 9,798,952	$ 9,442,686
Total	$ 201,973,945	$ 212,509,579	$ 227,358,302	$ 239,304,753	$ 245,954,247	$ 254,282,794

- This is the current revenue projection for the future.
- It is based on all the current assumptions
  - Incoming classes of 4325 (4000 freshmen)
  - Tuition increases of 4.5%, 4%, 4%, 3.5%, 3.5%
  - Three-year averages of persistence for the combinations of freshmen vs transfers and resident vs. non-resident
- Note that Summer is also included but it is estimated in a different way since there is no good persistence approach given that it is optional to attend. So we make some assumptions based on prior relationships between total class sizes and percent attending summer and look at the overall trend to make a reasoned but rough estimate.

Athens UG Revenue Projection



The growth in the next four years is driven by

The assumption that we can continue to bring in freshman classes of 4000 while we graduate the smaller classes over the past few year.

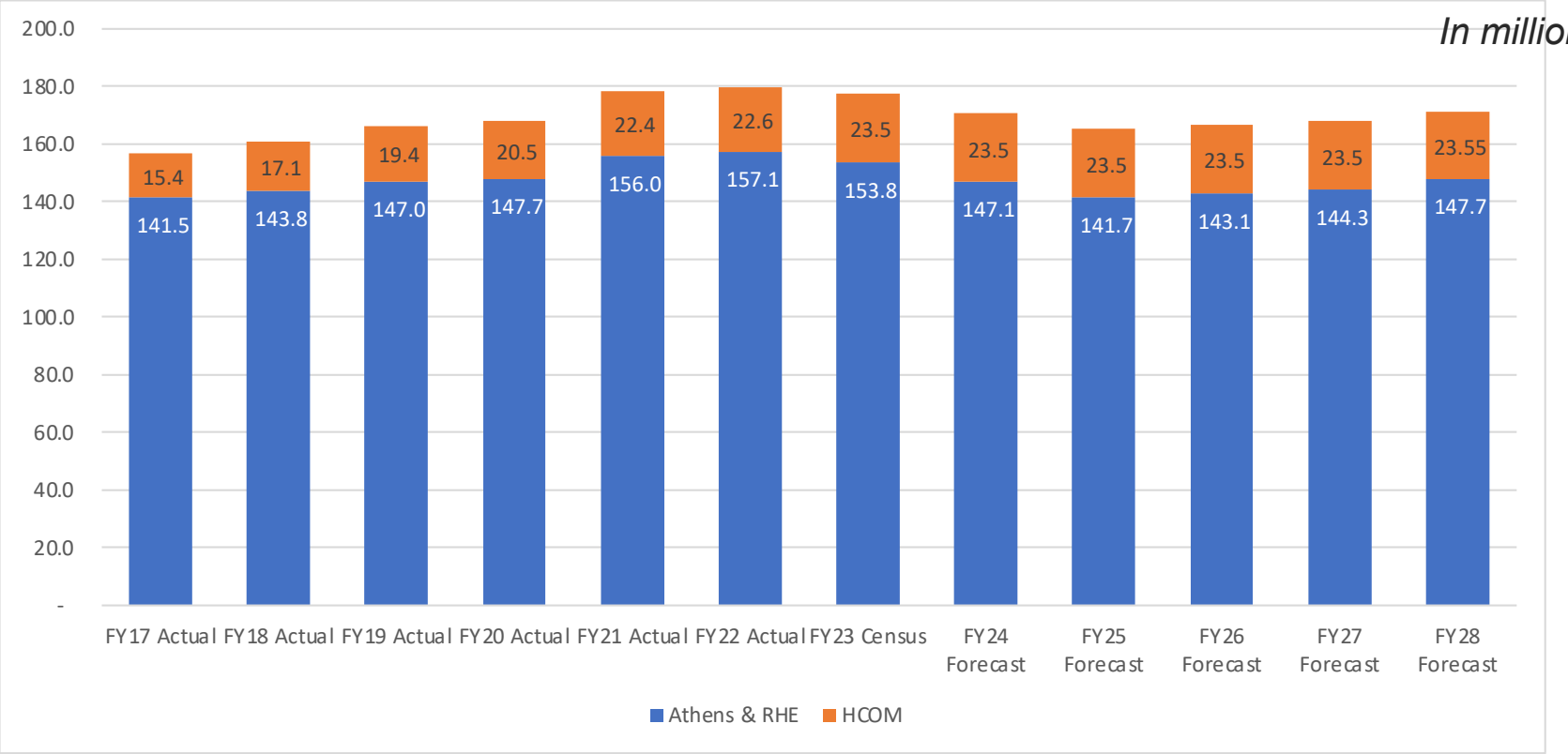
And that inflation will allow for tuition increases that compound year over year

The red box compares the FY23 budget to the census with the larger freshman class – you can see that one good freshman class does not add much – you need to repeat that to see the benefit

Athens Subsidy Projection Model

- Similar to tuition, we do make a projection for future subsidy.
- This is much more complicated and difficult to predict accurately
- We take the enrollment assumptions and get a year-to-year change and apply that to credit hour production and degree credits
  - Assumes more students = more credit hours and eventually degrees
  - Assumes what those students will take is similar to what they take now
  - Assumes current completion rates will continue
  - Uses college assumptions about master's enrollments
  - Assumes flat Doctoral activity
- We make assumptions about how much the state will put into the SSI appropriation in future years
- This gives us potential SSI if we assume our share of the appropriation will remain the same relative to what the other 12 institutions will do – so does not account for the interactions across institutions.

Subsidy Projection



The growth in SSI through this year is mostly a result of our high enrollment in 2016 given the built-in delay for completions and especially degrees. Our decline over the past several years starts showing up in the near future, and our forecasted rebound won't start showing up for several years