2020 Campus Master Plan

THE UNIVERSITY OF ARIZONA

Research Space

February 24th , 2020

Introductions

Who is in the Room?

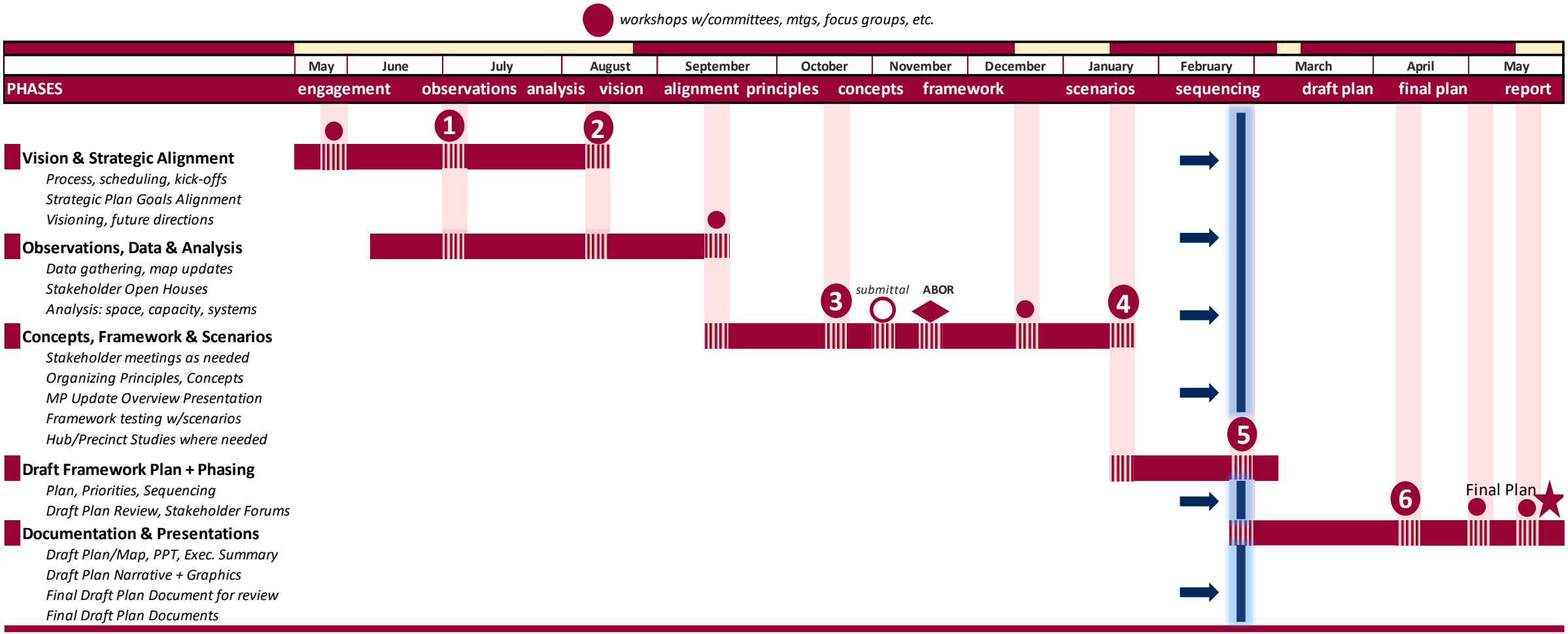
AYERS SAINT GROSS

THE UNIVERSITY OF ARIZONA

AGENDA

1. Kick-off Questions
2. Master Plan Structure: Strategic Asset Management
3. Enrollment Profile & Scenarios
4. Research Space
5. Exercise
6. Next Steps

2020 Campus Master Plan Schedule



Workshop 04 Recap

Meetings & Work Sessions:

- Operations Committee Meeting
- Focus Group Meetings:
  - Instructional
  - Research
  - Sustainability
  - Student Life

Operations Committee Exercise:

- Character Aspirations for the North-South Corridors

Sustainability Focus Group Exercise

- Past Achievements
- Current Initiatives
- Future Aspirations

Kick-off Questions

Kick-off Question #1:

How does UA showcase & communicate it's research mission today?

(internally & externally)

Kick-off Question #2:

How can UA share it's research successes better?

(internally & externally)

Kick-off Question #3:

How does "Sustainability" interconnect with Research at UA?

Strategic Asset Management

Master Plan Structure: Strategic Assets

MASTER PLAN ORGANIZATION:

STRATEGIC PLAN
ALIGNMENT

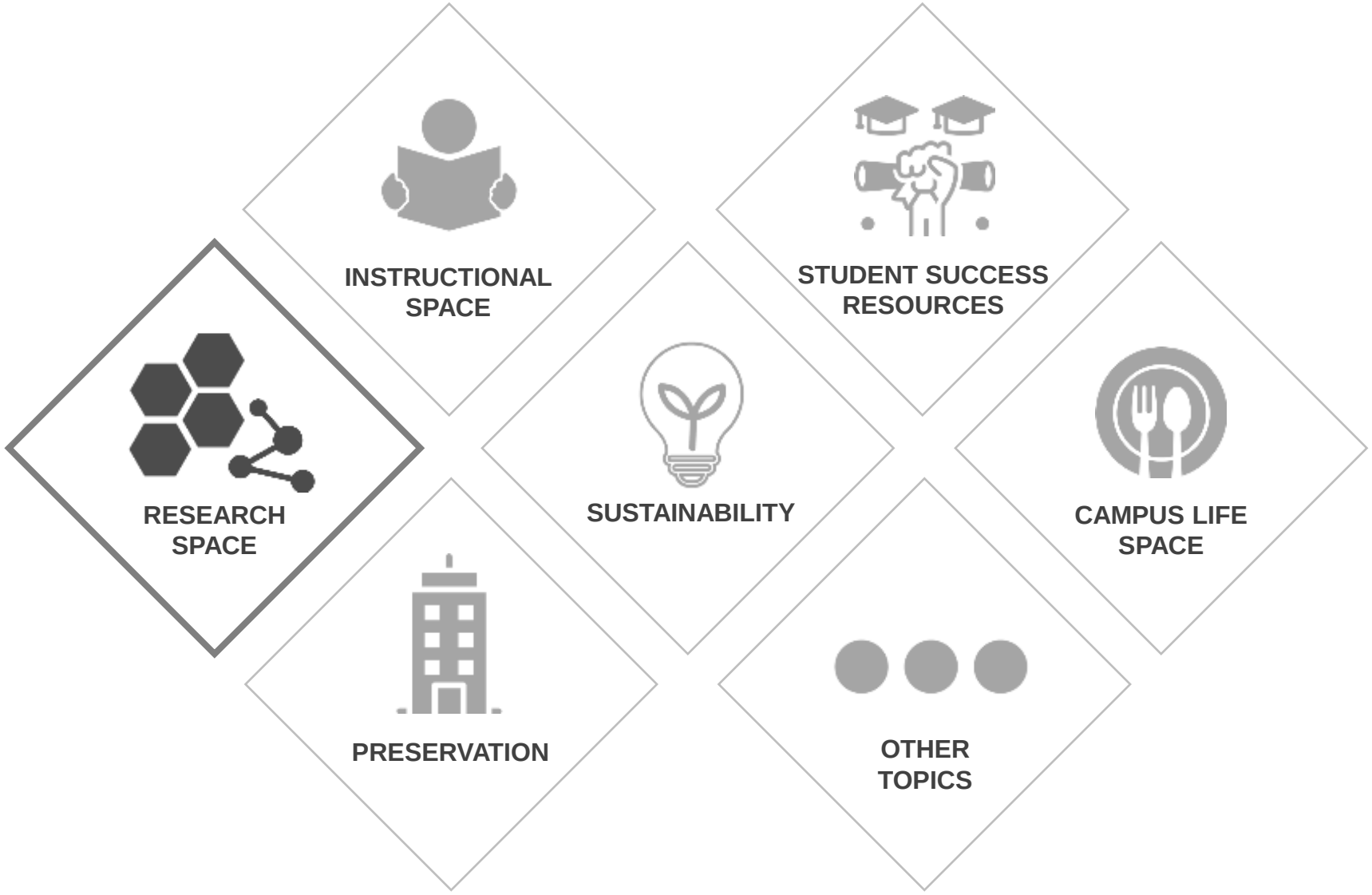
1 FRAMEWORK

2 **STRATEGIC ASSET MANAGEMENT**

3 INTEGRATED PLANNING PROJECTS

INTEGRATED WITH ALL 3

SUPPORTING TOPICS



Strategic Asset Management

This planning process has the unique perspective of looking across the University's space assets in typology classification as well as in the traditional campus context. The character, location and quantity of key strategic space types has emerged as a prime consideration for the Master Plan's analysis and is a long term subject of management for UArizona. The prime space types have been identified as Instructional, Research and Student Success.

Each typology requires current benchmarking, a projection of need into the future and a set of interim tactics for its respective management and development. Additionally, other factors effect the context and efficacy of these space types including enrollment profiles, building age, changes in program or curriculum delivery and market context.

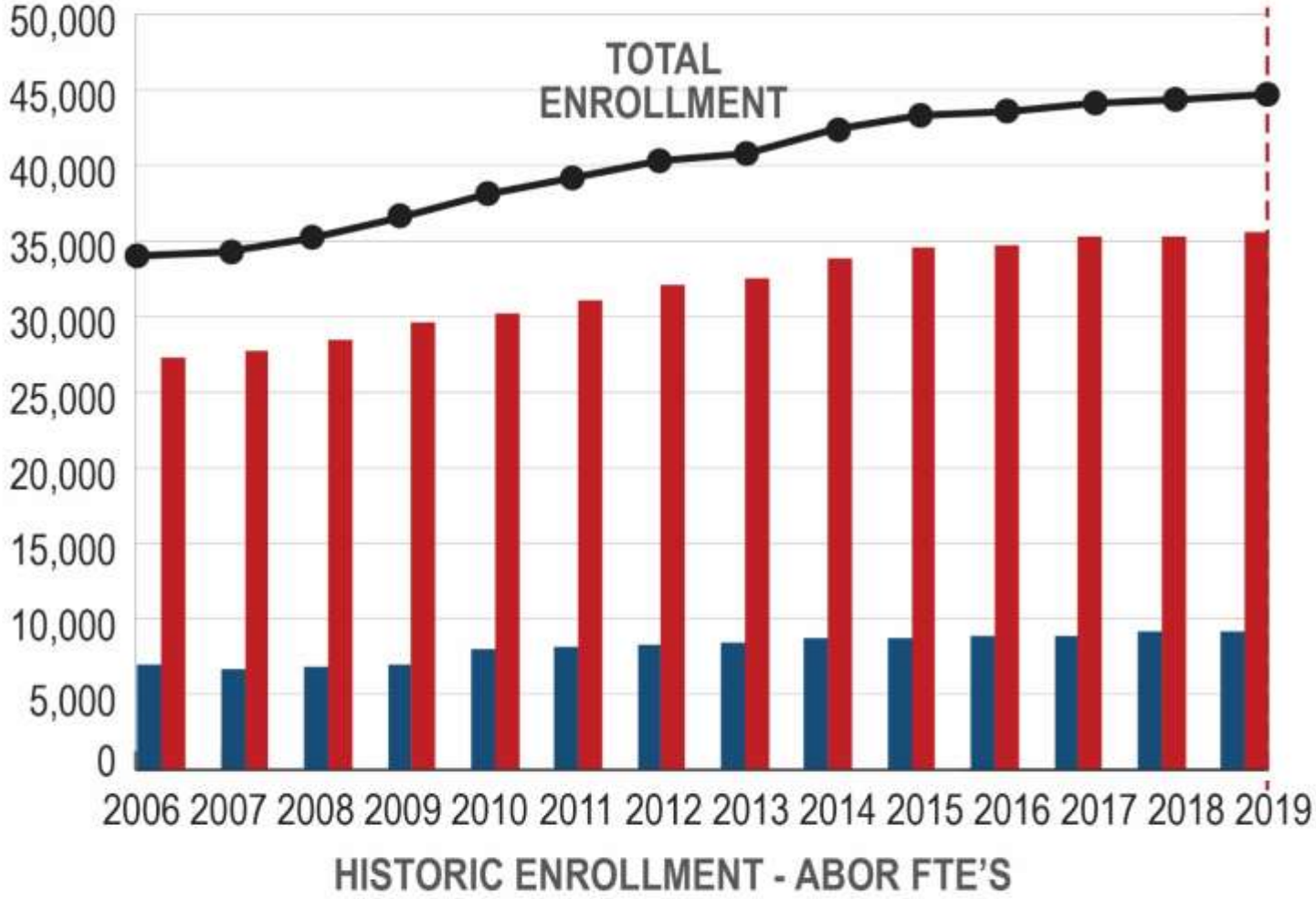
Our process aligns these resources with input from the Strategic Planning group as well the broader input of the Master Plan participants.

What we want from you today:

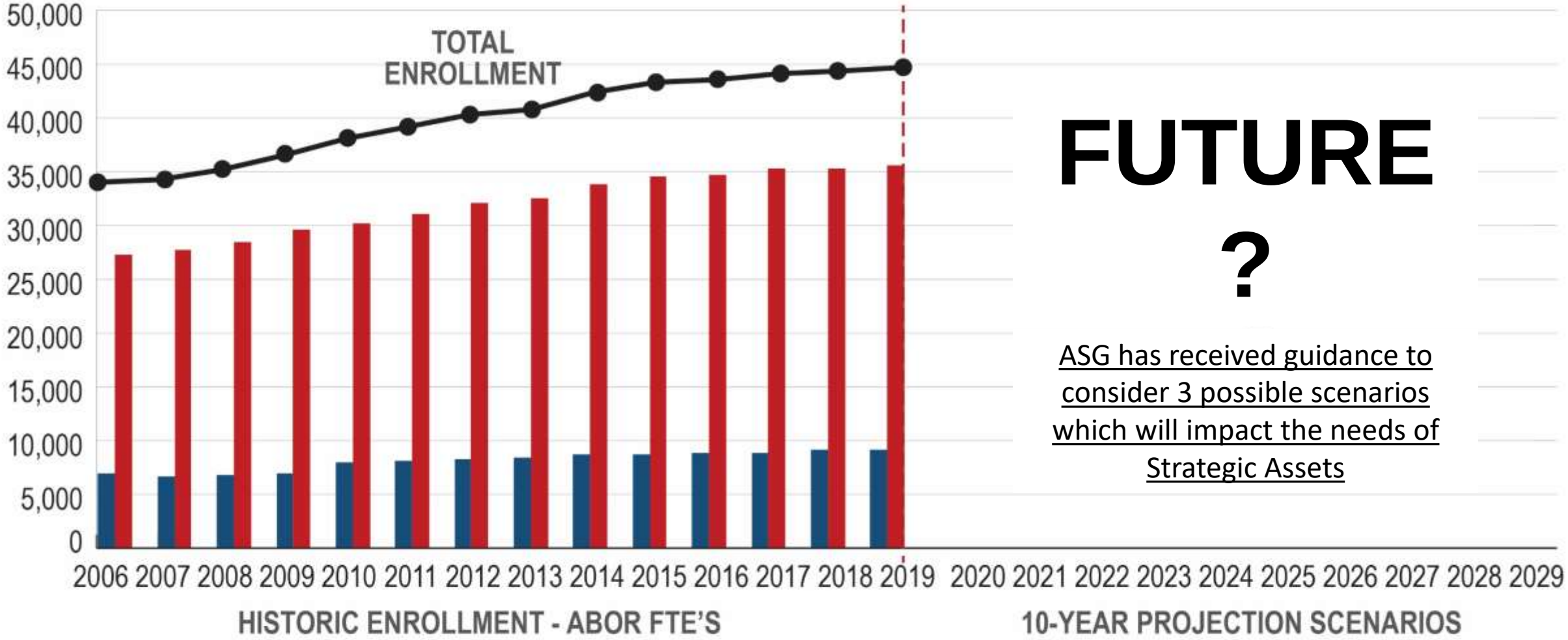
1. Confirm that we have appropriately interpreted your feedback to-date
2. Expansion and further detailing of initial Master Plan recommendations related to Research Space & Resources
3. Identification of any additional recommendations or parameters related to Research Space & Resources

Enrollment Profiles & Scenarios

HISTORIC ENROLLMENT PROFILES



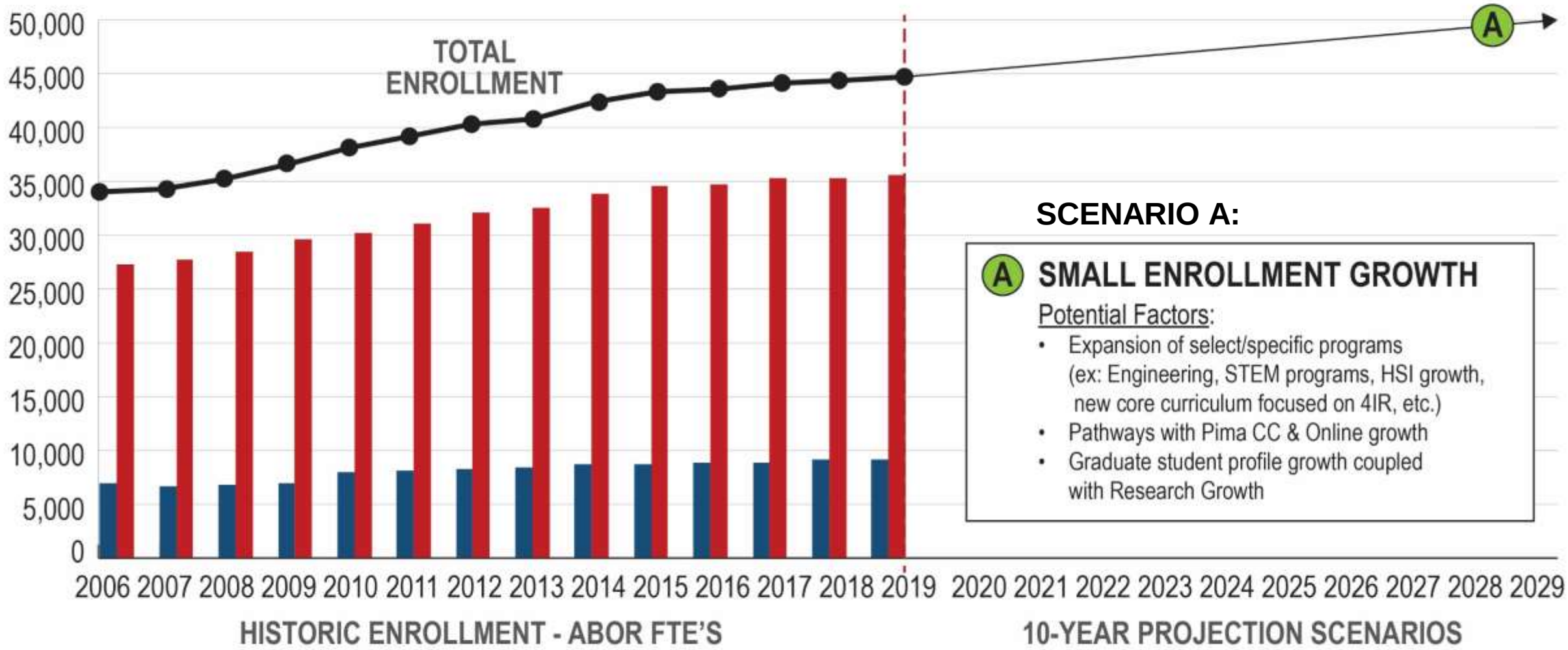
MASTER PLAN ENROLLMENT PROFILES



FUTURE ?

ASG has received guidance to consider 3 possible scenarios which will impact the needs of Strategic Assets

MASTER PLAN ENROLLMENT PROFILES



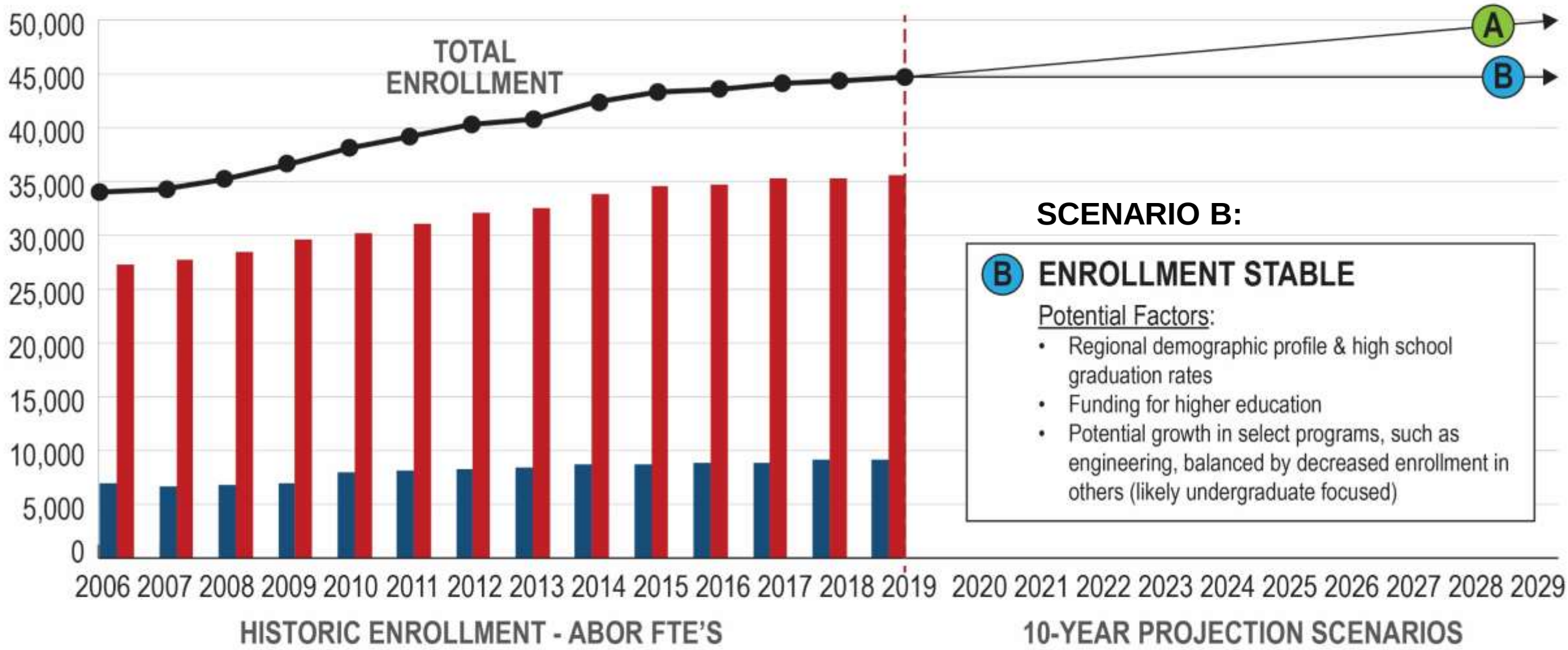
SCENARIO A:

A SMALL ENROLLMENT GROWTH

Potential Factors:

- Expansion of select/specific programs (ex: Engineering, STEM programs, HSI growth, new core curriculum focused on 4IR, etc.)
- Pathways with Pima CC & Online growth
- Graduate student profile growth coupled with Research Growth

MASTER PLAN ENROLLMENT PROFILES



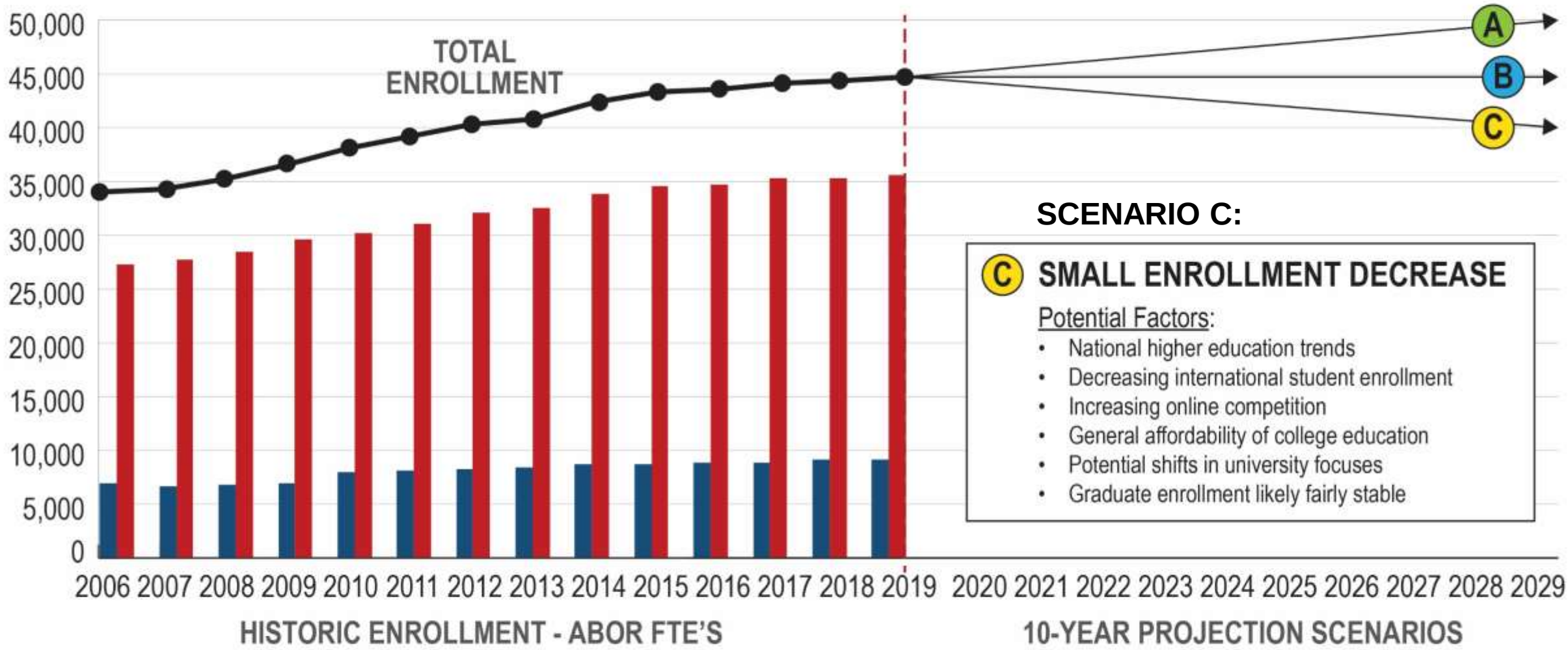
SCENARIO B:

B ENROLLMENT STABLE

Potential Factors:

- Regional demographic profile & high school graduation rates
- Funding for higher education
- Potential growth in select programs, such as engineering, balanced by decreased enrollment in others (likely undergraduate focused)

MASTER PLAN ENROLLMENT PROFILES



SCENARIO C:

C SMALL ENROLLMENT DECREASE

Potential Factors:

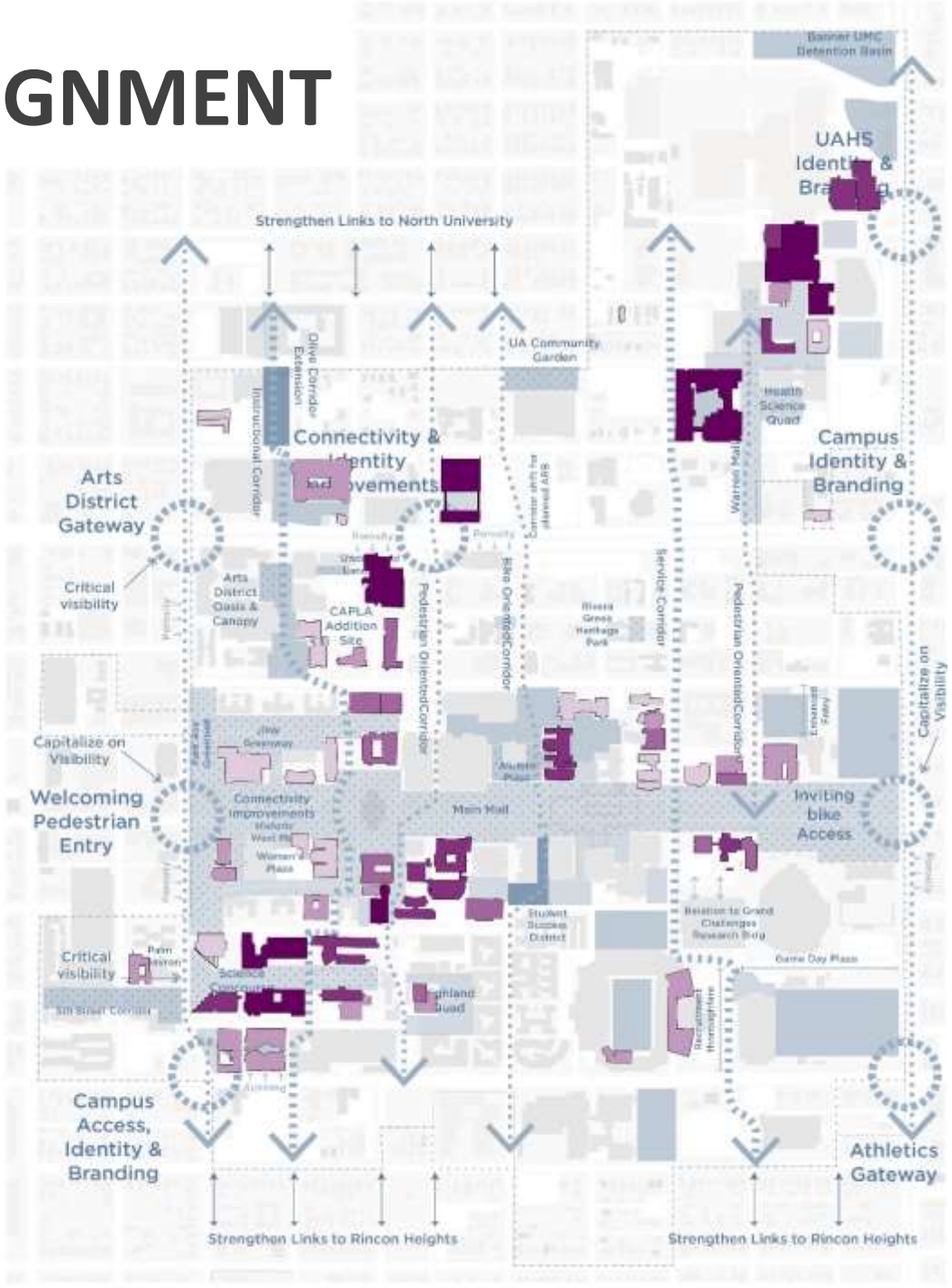
- National higher education trends
- Decreasing international student enrollment
- Increasing online competition
- General affordability of college education
- Potential shifts in university focuses
- Graduate enrollment likely fairly stable

MASTER PLAN ENROLLMENT PROFILES

	Enrollment Profile	Graduate Enrollment	Undergraduate Enrollment	Total Enrollment	What This Means?
EXISTING (FALL 2019 ABOR FTE)	**EXISTING PROFILE (FALL 2019)**	9,094	35,620	44,714	
10-YEAR PROJECTION SCENARIOS (2029-2030)	**A SMALL ENROLLMENT GROWTH** Potential Factors: • Expansion of select/specific programs (ex: STEM programs, HSI/border, etc.) • Pathways with Pima CC & Online growth • Graduate student profile growth coupled with Research Growth	9,500 - 10,500	36,500 - 39,500	46,000 - 50,000	Strategic program growth (new & existing)
	B ENROLLMENT STABLE Potential Factors: • Regional demographic profile & high school graduation rates • Funding for higher education • Potential growth in select programs balanced by decreased enrollment in others	8,500 - 9,500	34,500 - 36,500	43,000 - 46,000	Enrollment shifts will take place to align with priorities, but net count will remain stable
	C SMALL ENROLLMENT DECREASE Potential Factors: • National higher education trends • Decreasing international student enrollment • Increasing online competition • General affordability of college education • Potential shifts in university focuses	8,000 - 9,000	31,500 - 34,500	39,000 - 43,000	Overall enrollment figures return to ~2010 levels, but graduate FTE grows as a % of total

Research Space

FRAMEWORK ALIGNMENT



- Research Space
- N/S Connections
- Key Open Spaces
- Gateways

RESEARCH SPACE

Workshop 04 Focus Group Notes (What we heard):

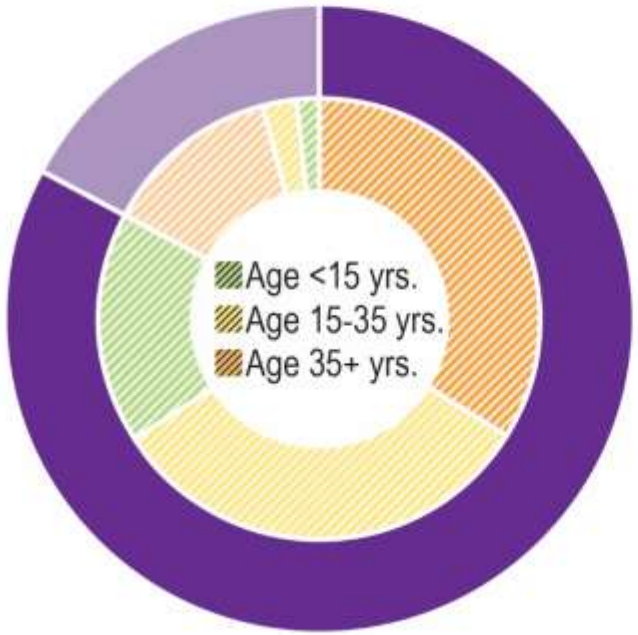
- UA through master plan needs to be able to answer “3 Flags”
    - If we get a $100m program with 150 new faculty, where do we put it? New building? Lease space / at Bridges? What are our options?
    - Innovation space in every building - takes many different forms
    - If ARB + Grand Challenges are successful and create demand/yearning for more similar space, how do we do that?
- Computational research space/facilities are critical to UA’s future
    - Physical infrastructure (server) spaces & cloud spaces - different, both needed
- Specialty facilities/research also in future
- UA’s model will not be a standardized “1 PI + 6 GA” type model
- 120 SF offices for PI’s is too big - old school thinking
- UA hopes to focus on larger awards in the future
- Currently experiencing significant research expenditure growth
- Growth programs/opportunities identified in Strategic Plan plus others not included
- Would like greater centralized control of space - reclaim as renovations take place
- Advance shared core model, innovation space, collaboration space, mixed-use buildings

RESEARCH SPACE

Strategic Plan Extracts:

- Grand Challenges & the 4IR - space, earth, health, intelligent systems, data/computing
- Research enablers - graduate stipends, admin support, centers, collaboration redefined
- Develop support systems and programs to advance graduate student recruitment, experience, and success

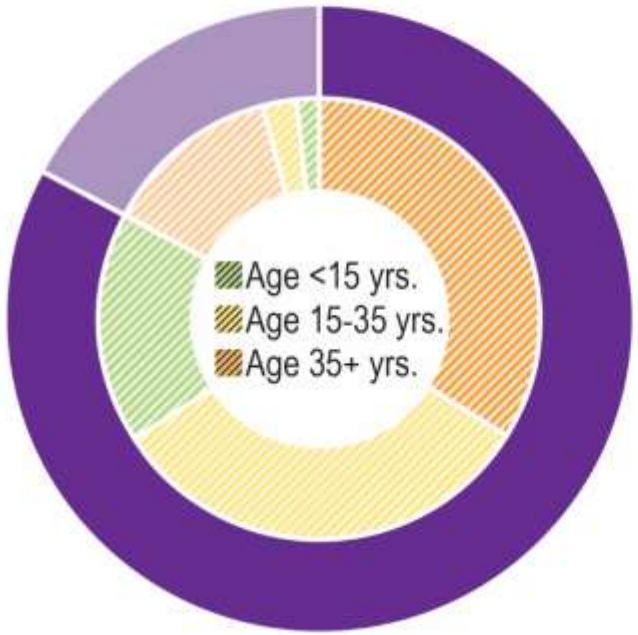
RESEARCH SPACE



EXISTING
1,148,000 SF

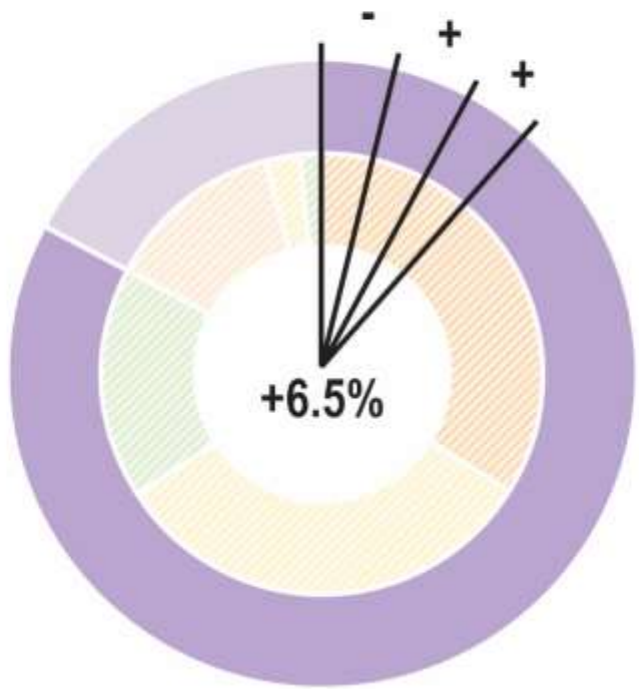
Space Type	D-C
"Top 28" Research Bldgs.	955,500 sf
All other Research Bldgs.	192,500 sf

RESEARCH SPACE



EXISTING
1,148,000 SF

Space Type	D-C
"Top 28" Research Bldgs.	955,500 sf
All other Research Bldgs.	192,500 sf

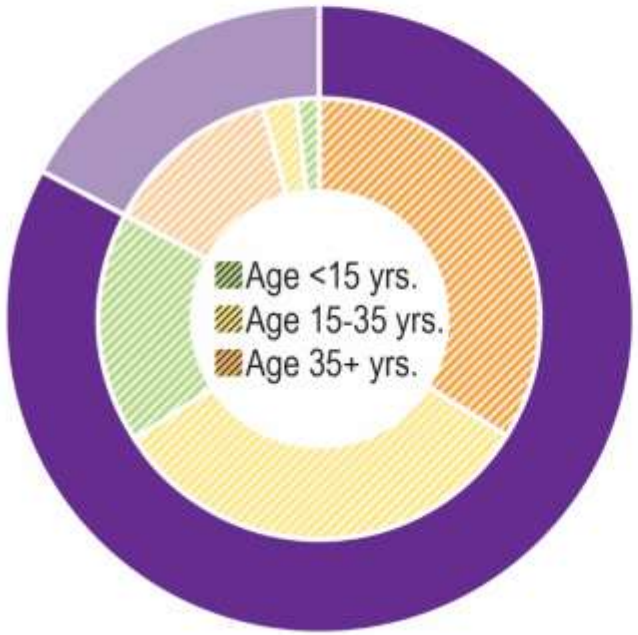


PLANNED
1,227,500 SF

Under development projects that may impact

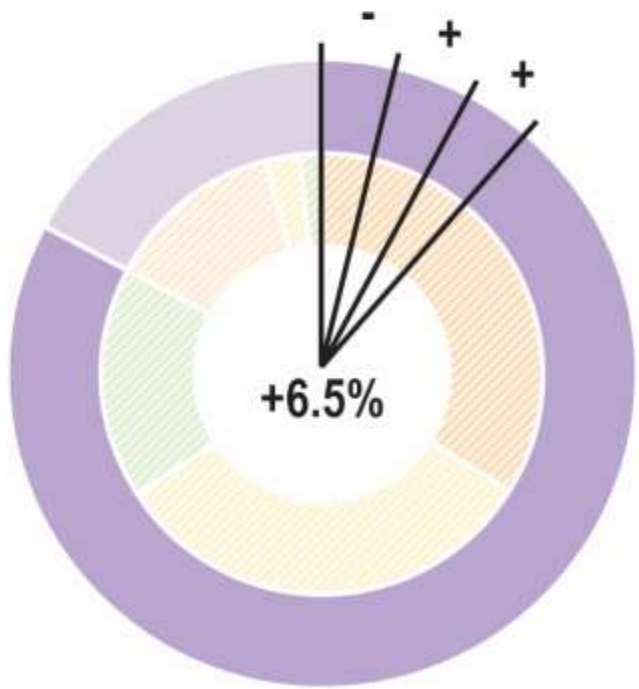
- Chemistry Renovations **(-29,000 SF)**
- Grand Challenges Building **(+63,000 SF)**
- Center for Integrative Medicine **(+1,500 SF)**
- Applied Research Building **(+44,000 SF)**

RESEARCH SPACE



EXISTING
1,148,000 SF

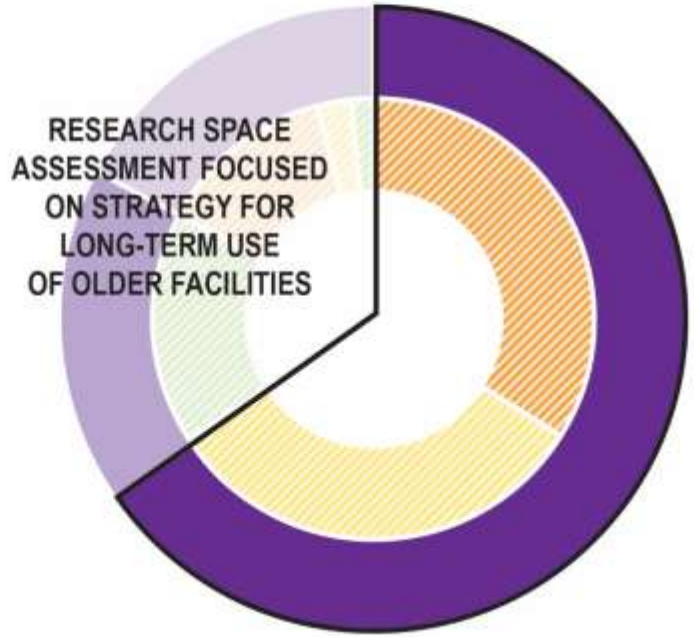
Space Type	D-C
"Top 28" Research Bldgs.	955,500 sf
All other Research Bldgs.	192,500 sf



PLANNED
1,227,500 SF

Under development projects that may impact

- Chemistry Renovations **(-29,000 SF)**
- Grand Challenges Building **(+63,000 SF)**
- Center for Integrative Medicine **(+1,500 SF)**
- Applied Research Building **(+44,000 SF)**



FUTURE
?????? SF

Variable based on:

- Changing space types and support needs
- Research profile & expenditure growth
- Approach to New vs. Reno vs. Re-purpose

RESEARCH SPACE

Projecting future needs: Expenditure based model

(one possible approach)

RESEARCH SPACE

Existing Expenditure "Math":

Space: 1,148,000 NASF
Expenditures: $732,700,000
Exp. $ per SF: $638/NASF

Planned Expenditure "Math":

Space: 1,227,500 NASF
Expenditures: $781,500,000
Exp. $ per SF: $636/NASF

NOTE: assumes 6.5% increase into 2020-2021 matching prior growth between 2018-2019 and 2019-2020

Potential FUTURE Research Space Need Models:

RESEARCH SPACE

Existing Expenditure "Math":

Space: 1,148,000 NASF
Expenditures: $732,700,000
Exp. $ per SF: $638/NASF

Planned Expenditure "Math":

Space: 1,227,500 NASF
Expenditures: $781,500,000
Exp. $ per SF: $636/NASF

NOTE: assumes 6.5% increase into 2020-2021 matching prior growth between 2018-2019 and 2019-2020

Potential FUTURE Research Space Need Models:

Meeting Expenditure or Growth Targets ($636/SF to $638/SF)

$860 million:	10% growth next decade	~120,000 NASF need
$975 million:	25% growth next decade	~300,000 NASF need
$1.15 billion:	50% growth next decade	~600,000 NASF need
$1.3 billion:	65% growth next decade	~800,000 NASF need

RESEARCH SPACE

Existing Expenditure "Math":

Space: 1,148,000 NASF
Expenditures: $732,700,000
Exp. $ per SF: $638/NASF

Planned Expenditure "Math":

Space: 1,227,500 NASF
Expenditures: $781,500,000
Exp. $ per SF: $636/NASF

NOTE: assumes 6.5% increase into 2020-2021 matching prior growth between 2018-2019 and 2019-2020

Potential FUTURE Research Space Need Models:

Meeting Expenditure or Growth Targets ($636/SF to $638/SF)

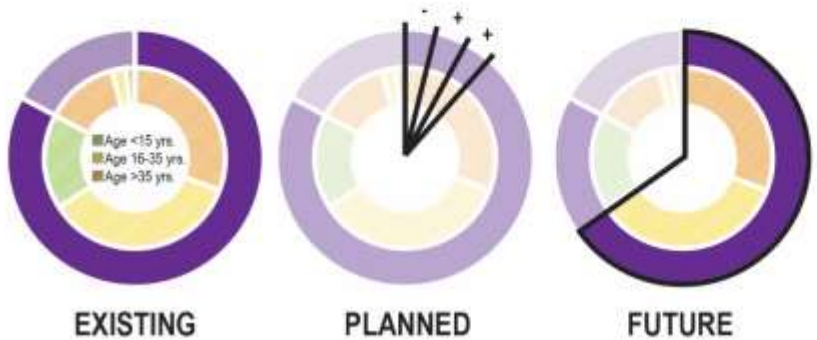
$860 million:	10% growth next decade	~120,000 NASF need
$975 million:	25% growth next decade	~300,000 NASF need
$1.15 billion:	50% growth next decade	~600,000 NASF need
$1.3 billion:	65% growth next decade	~800,000 NASF need

Increased efficiency = increased $/SF ($700/NASF example shown)

Factors: Shared cores, less offices, less wet labs, etc. (10% more efficient shown)

$860 million:	10% growth next decade	~0 net NASF need
$975 million:	25% growth next decade	~170,000 NASF need
$1.15 billion:	50% growth next decade	~450,000 NASF need
$1.3 billion:	65% growth next decade	~615,000 NASF need

RESEARCH SPACE



WORKSHOP 04 - FOCUS GROUP NOTES

- UA through master plan needs to be able to answer "3 Flags"
- (+) If we get a $100m program with 150 new faculty, where do we put it? New building? Lease space / at Bridges? What are our options?
- (+) Innovation space in <u>every</u> building - takes many different forms
- (+) If ARB + Grand Challenges are successful and create demand/yearning for more similar space, how do we do that?
- (+)(–) Computational research space/facilities are critical to UA's future
- Physical infrastructure (server) spaces & cloud spaces - different, both needed
- (+) Specialty facilities/research also in future
- (o) UA's model will <u>not</u> be a standardized "1 PI + 6 GA" type model
- (–) 120 SF offices for PI's is too big - old school thinking
- (o) UA hopes to focus on larger awards in the future
- (o) Currently experiencing significant research expenditure growth
- Growth programs/opportunities identified in strat plan plus others not included
- (–) Would like greater centralized control of space - reclaim as renovations take place
- (+)(–) Shared core model, innovation space, collaboration space, mixed-use buildings

STRATEGIC PLAN ALIGNMENT - EXTRACTS

- (+) Grand Challenges & the 4IR - space, earth, health, intelligent systems, data/computing
- (+) Research enablers - graduate stipends, admin support, centers, collaboration redefined
- (+) Graduate student experience

LEGEND: (+) Increases space or need (o) Neutral or undetermined (–) Decreases space or need

RESEARCH SPACE

EXISTING PLANNED FUTURE

WORKSHOP 04 - FOCUS GROUP NOTES

- UA needs to be able to answer "3 Flags"
  - If we get a $100m program with 150 new faculty, where do we put it?
    New building? Lease space / at Bridges?
    What are our options?
  - Innovation space in every building
  - If ARB + Grand Challenges are successful and create demand/yearning for more similar space, how do we do that?
- Computational research space/facilities are critical to UA's future
  - Physical infrastructure (server) spaces & cloud spaces - different, both needed
- Specialty facilities/research also in future
- UA's model will not be a standardized "1 PI + 6 GA" type model
- 120 SF offices for PI's is too big - old school thinking
- UA hopes to focus on larger awards in the future
- Currently experiencing research exp. growth
- Growth programs/opportunities identified in strat plan plus others not included
- Would like greater centralized control of space - reclaim as renovations take place
- Shared core model, innovation space, collaboration space, mixed-use buildings

STRATEGIC PLAN ALIGNMENT - EXTRACTS

- Grand Challenges & the 4IR - space, earth, health, intelligent systems, data/computing
- Research enablers - graduate stipends, admin support, centers, collaboration redefined

POTENTIAL RECOMMENDATIONS

- Provide clear options to address the 3 flags
- Recommend deep-dive study into research space focused on "top 28" to better understand what spaces are viable for renovation, which need to be repurposed to other uses, and when do we build new space
- Define potential attributes and typologies for innovation and collaboration spaces and consider parameters for requirements in new/reno projects
- Define basic parameters for the integration of research space into the broader campus framework
- Identify potential locations for physical research components identified in the Strategic Plan (those not being located in Grand Challenges)
- All research building projects (new or reno.) include some instructional space
- Others TBD

Ongoing – Analyzing existing space inventory (part of recommendations):

Opportunities for renovation, realignment, and re-purposing

RESEARCH SPACE

Pending data

Bldg. #	Building Name	Building Age (Year Built)	Building FCI	Construction Type	Typical F-2-F Height	PI Count	GA Count	Programs	Lab Types
0088.00	Biological Sciences West	1967	Poor	Working to code	14				Coded in full spreadsheet
0240.00	Thomas W. Keating Bioresearch Building	2007	Good	Working to code	16				Coded in full spreadsheet
0241.00	Medical Research Building	2006	Good	Working to code	16				Coded in full spreadsheet
0077.00	Gould-Simpson	1985	Good	Working to code	14.8				Coded in full spreadsheet
0242.00	Bioscience Research Laboratories	2018	Good	Working to code	16				Coded in full spreadsheet
0107.00	Marley	1990	Good	Working to code	13.4				Coded in full spreadsheet
0104.00	Electrical And Computer Engineering	1986	Good	Working to code	15.4				Coded in full spreadsheet
0201.00	Arizona Health Sciences Center	1968	Poor	Working to code	Varies				Coded in full spreadsheet
0094.00	Meinel Optical Sciences	1970	Fair	Working to code	14				Coded in full spreadsheet
0119.00	Aerospace And Mechanical Engineering	1997	Good	Working to code	12				Coded in full spreadsheet
0221.00	Life Sciences North	1990	Good	Working to code	Varies by floor				Coded in full spreadsheet
0041.00	Chemistry	1936	Poor	Working to code	13.6				Coded in full spreadsheet
0044.00	Chemical Sciences Building	2006	Poor	Working to code	15.2				Coded in full spreadsheet
0106.00	Life Sciences South	1990	Good	Working to code	16				Coded in full spreadsheet
0081.00	Physics-Atmospheric Sciences	1960	Poor	Working to code	11.3				Coded in full spreadsheet
0038.00	Shantz	1962	Poor	Working to code	10.6				Coded in full spreadsheet
0222.01	Sydney E. Salmon Building	1998	Good	Working to code	15				Coded in full spreadsheet
0061.02	Richard F Caris Mirror Lab	1986	Good	Working to code	16.83				Coded in full spreadsheet
0207.00	Skaggs Pharmaceutical Sciences Center	1980	Fair	Working to code	15				Coded in full spreadsheet
0222.00	Leon Levy Cancer Center	1986	Fair	Working to code	15				Coded in full spreadsheet
0090.00	Animal and Comparative Biomedical Sciences	1966	Poor	Working to code	12.6				Coded in full spreadsheet
0201.02	Steele Children's Research Center	1991	Good	Working to code	13.6				Coded in full spreadsheet
0037.00	Carl S. Marvel Laboratories Of Chemistry	1973	Poor	Working to code	14				Coded in full spreadsheet
0068.00	Psychology	1968	Fair	Working to code	13				Coded in full spreadsheet
0064.00	Steward Observatory	1953	Poor	Working to code	8.8				Coded in full spreadsheet

Excluded but Research Space >10,000SF = Forbes, Civil Engineering, Harshbarger, Bio-Sciences East, Engineering, Tree Ring Archives, Mines and Metallurgy

“Top 28” Research Buildings by Space (table above) = 955k SF = 87% of Research Space
45 other facilities = 193k SF = 13% of Research Space

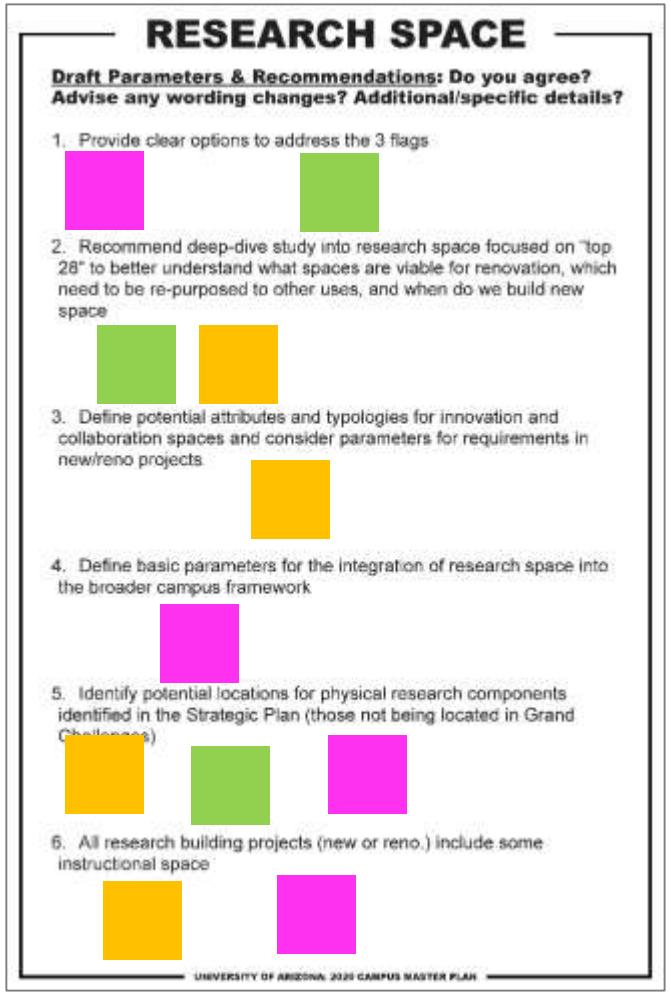
Exercise

Recommendations & Parameters

Using sticky notes, please provide the following feedback onto the appropriate posters

1. **Draft Parameters:** Place a sticky note with any thoughts, edits, or additional details beneath any draft recommendation you wish to provide feedback on

   Also… If known, provide any details on whether the recommendation is a near-term focus, a long-term focus, or both



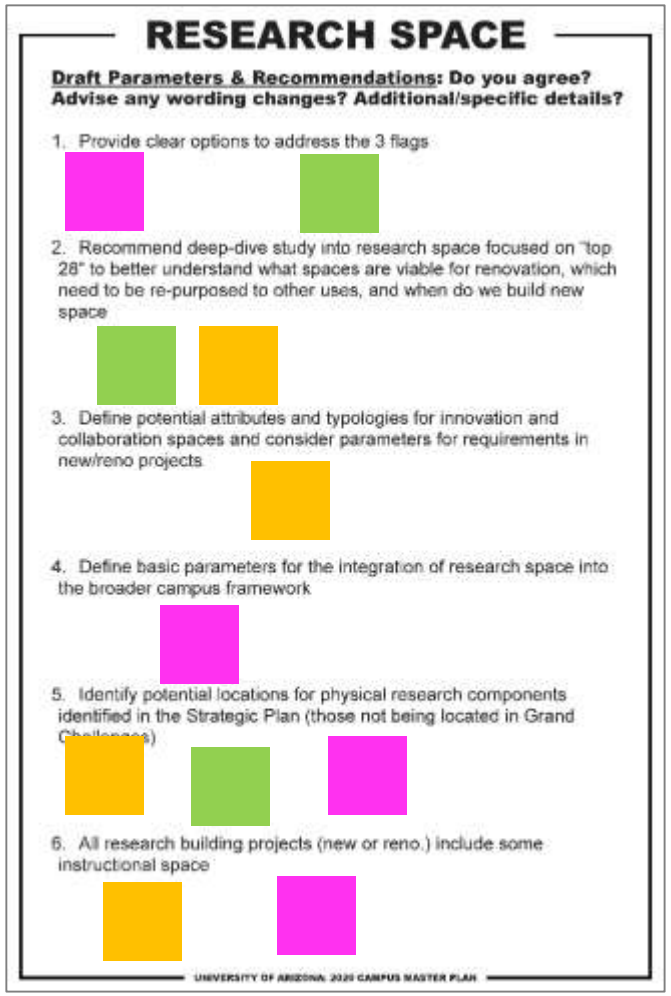
Existing Draft Recommendations

Recommendations & Parameters

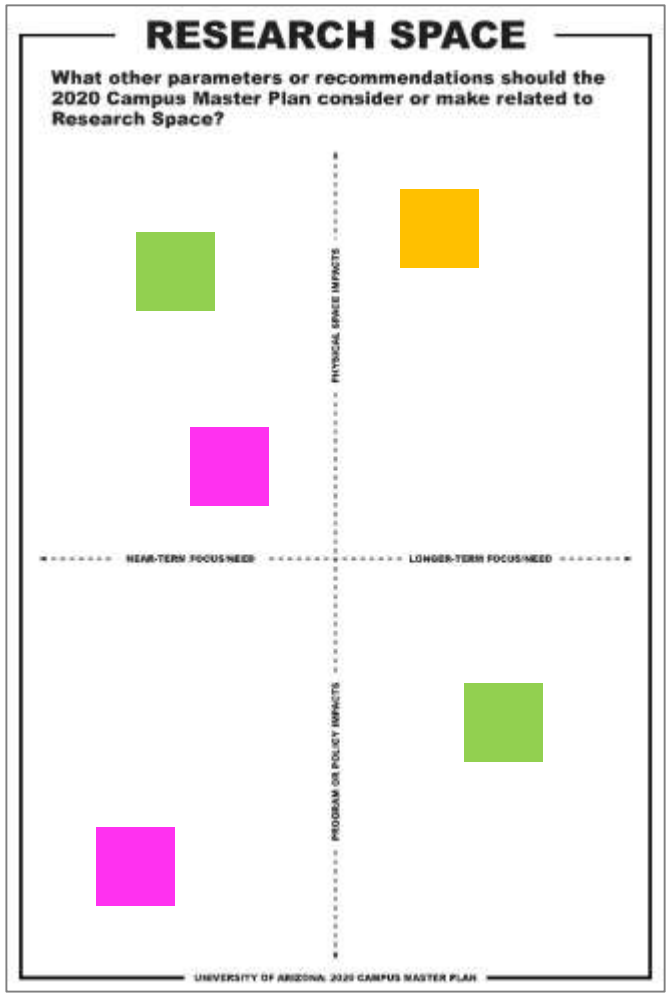
Using sticky notes, please provide the following feedback onto the appropriate posters
(Instructional Space and Student Success each has their own posters)

2. **Additional Recommendations:**
   Share any additional parameters or recommendations related to your topic area that the Master Plan should consider.

   Place your sticky note in the appropriate quadrant
   Near-term/long-term (x-axis)
   Program or policy/physical (y-axis)



Existing Draft Recommendations



Additional Recommendations

Next Steps

NEXT STEPS

1. Workshop 05: Finishing Today
    - Meetings:
        - Steering Committee
        - Focus Groups: Instructional & Student Success Resources, Research Space, Campus Health & Wellness, Historic Preservation
    - Synthesis of Feedback
2. Workshop 06: April 13th & 14th
    - Draft Plan Document
3. Late Spring ‘20 – Final Plan

THANK YOU!

University of Arizona 2020 Campus Plan Update