# 2022 CAMPUS MASTER PLAN RESTART

(2020 CAMPUS MASTER PLAN)





AYERS SAINT GROSS NOVEMBER 7, 2022



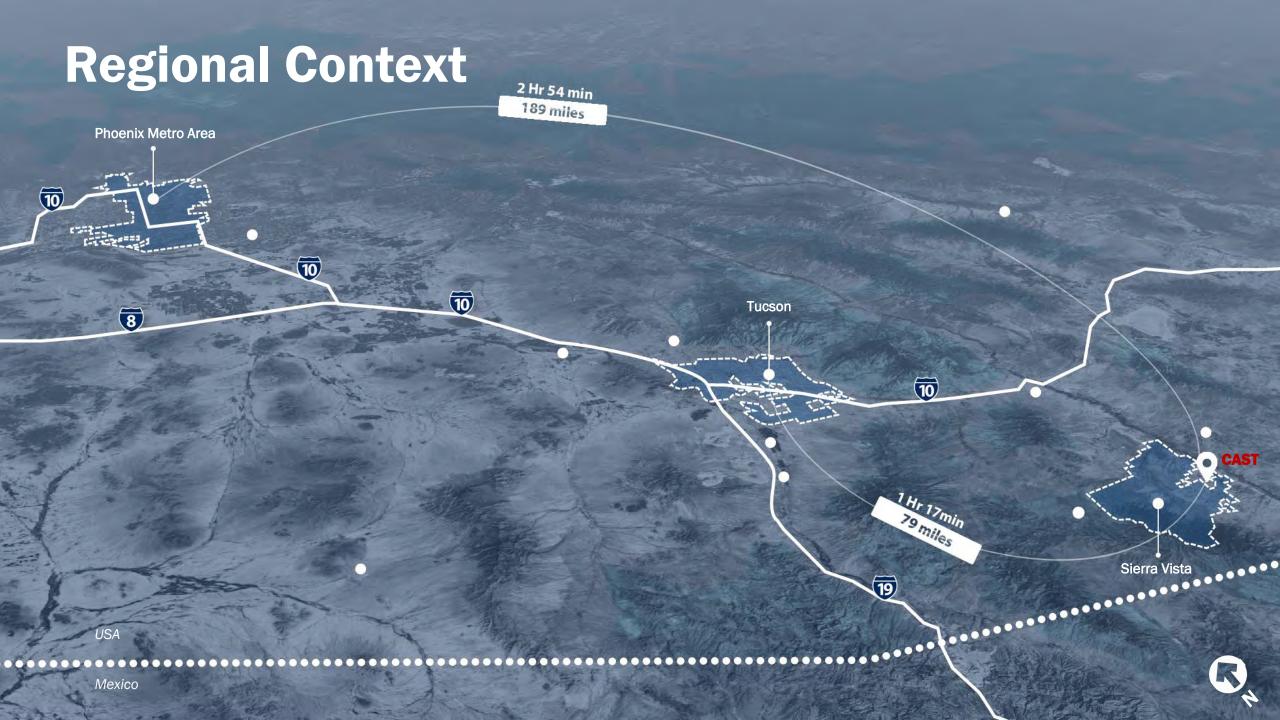
- Team Introductions
- CAST Updates
- Process Overview
- Methodology
- Space
- Systems
- Big Takeaways
- Summary

# Who is in the Room?

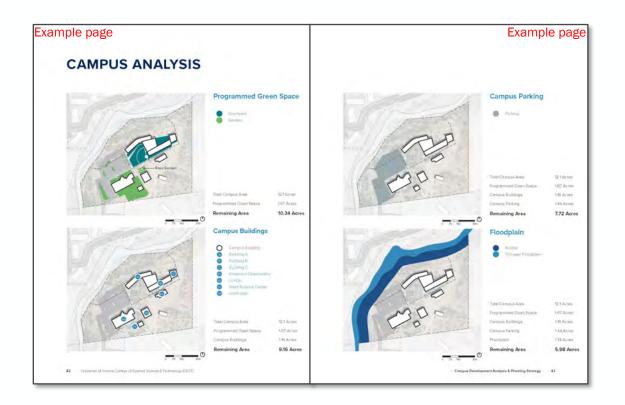






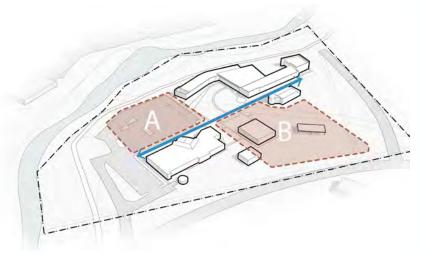


# Parallel Summary Document (In-Process)

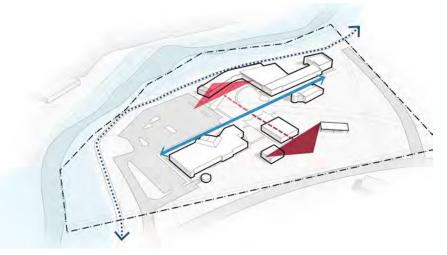




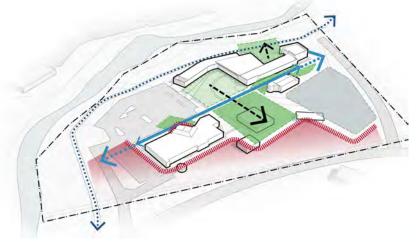
# **Campus Organization and Drivers**



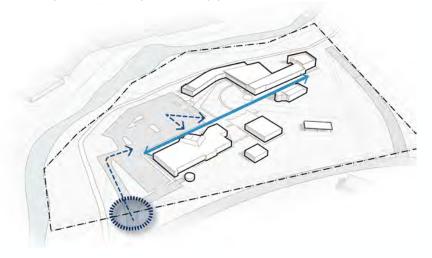
**Buildable Area Studies** 



North vs South Context



Campus Development Opportunities

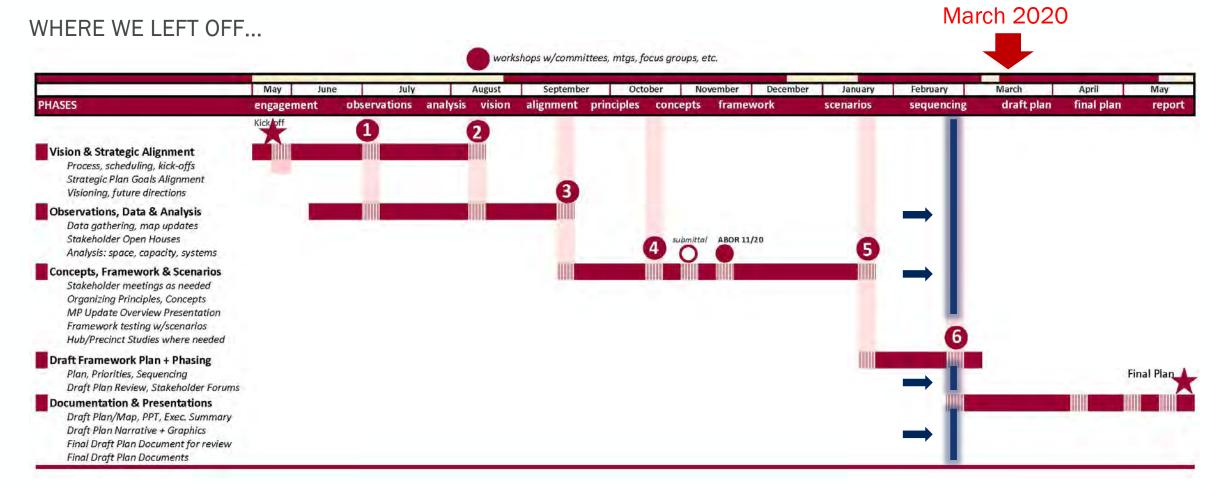


Campus Organization and Access

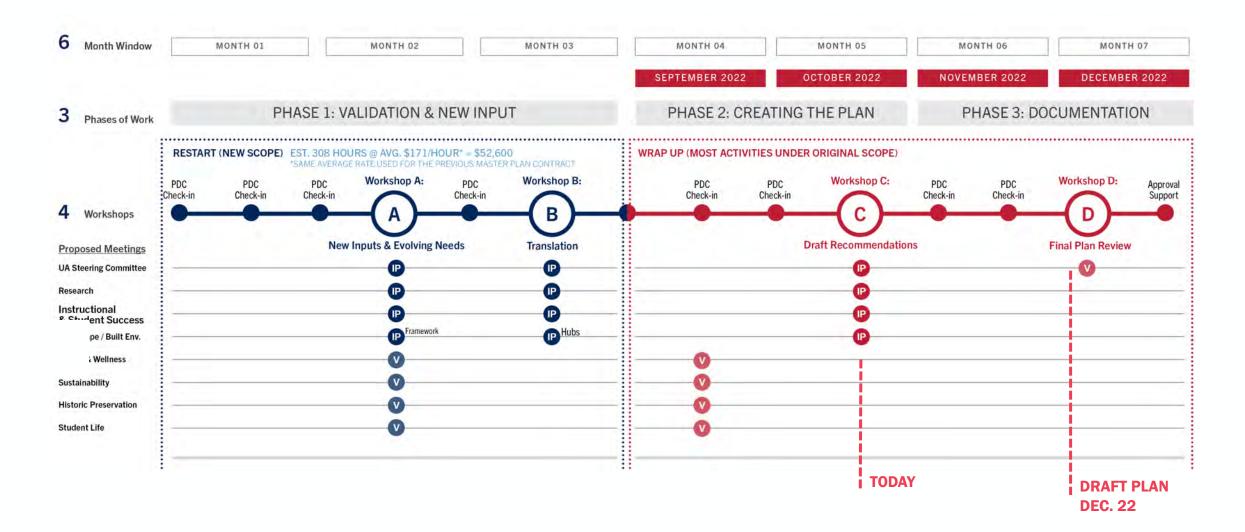
#### **SPECTRUM OPTIONS Existing Campus Options Off-Campus Options** EXISTING CAMPUS **OPTION 08** OPTION 09 **OPTION 10 OPTION 01 OPTION 02** OPTION 03 **OPTION 04 OPTION 05 OPTION 06 OPTION 07** SOUTH ENTRY RESEARCH CORRIDOR COLOMBO BUILD REPLACE PARKING PATTERSON CENTRAL SOUTH GROTH COURTYARD CESARE ADDITION SOUTH **ADJACENT** QUAD BUILD TOTAL BLDG. GSF 50,900 100,000 87,000 90,000 92,000 112,000 120,000 85,000 96,000 102,000 1 104,000 55,000 41,000 44,000 46,000 66,000 74,000 39,000 50,000 102,000 104,000 ADDED BUILDING GSF () 0 5,600 5,600 5,600 20,000 20,000 5,600 5,600 **BLDG DEMO** \$\$\$ \$\$\$ \$\$\$\$ COST 0 \$\$ \$\$ \$\$ \$\$\$\$ 145 300 352 310 268 228 228 300 1 259 196 PARKING 410 # OF NEW BLDGS. 0 3 12 1 3 & 1 # OF STORIES 3&1 3, 2, 1 1 3, 2, 1 3&1 1 3 & 1 1 3&1 1 3&1 13&1 13



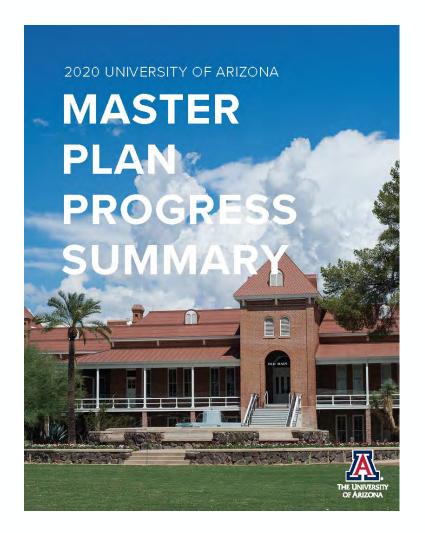
# (previous) 2020 Campus Master Plan Schedule



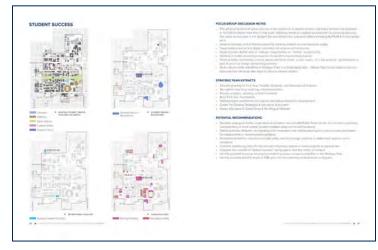
# **Master Plan Schedule**



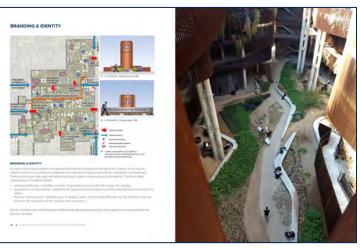
# **Executive Summary Draft**











# What is a Master Plan?

- A critical analysis of the physical resources of the campus and how they perform separately and in conjunction.
- An opportunity for broad engagement and participation on the use and needs of the campus.
- A device to assess the long-term capacity of systems and resources of campus comprehensively.
- A shared resource or reference to create
   alignment and common perspectives across
   many different user groups and programs.
- A method to convey the long-term direction and intentions of the university to its community and neighbors.



# Why a Master Plan?

- Align physical assets with mid- and long-term needs.
- Improve the campus quality and experience for all users.
- Support programmatic alignment and synergies.
- Forecast infrastructure needs to align with new facilities.
- Balance sources of input and viewpoints in the use and maintenance of the campus.
- Respond to emerging and changing needs and challenges.





# **Engagement-to-date**

Engagement Meetings

Workshops

18 Focus Groups (part of 1 or more meetings)

Meetings (Steering Committee/ **Operations Committee**)

Campus-wide Open House

4,000+ Dots

(1 Dot=1 comment)

200+ **Participants** 

400 Cookies

360+ Web Site Comments

Neighborhood Meetings (Open Houses & Report-back)

450+ Dots

(1 Dot=1 comment)

10 Neighborhood Associations

40+ Neighbors



L.128 Total Participants

# **Engagement & Input**







**Operations & Steering Committees** 

**Topical Focus Groups** 

**Engagement Activities** 

# **Stakeholder Groups**

Stakeholder Participants

Session 1 November 7, 2022 11:00 a.m Noon Executive Steering Committee		Session 2 November 7, 2022 2:30 p.m 4:00 p.m.				Session 3 November 8, 2022 10:30 a.m Noon				Session 4 November 8, 2022 3:00 p.m 4:30 p.m.			
		Sį	Foo	ce Utilization cus Groups: mics, Research, rtics, Housing & Res	idential Life	Campus Facilities & Systems Focus Groups:  Campus Gateways & Branding, Campus Landscape, Campus Infrastructure, Accessibility, Campus Recreation, Campus Access & Transportation, Campus Sustainability				Campus Planning Summary			
Elizabeth Cantwell		Academics		Space Planning		Campus Gateways & Branding		Campus Infrastructure		Ralph	Banks		
Elliott Michael	Cheu Dake	Barry Gail	Brummund Burd	Nina Peter	Bates Dourlein	John Peter	Denker Dourlein	Ralph Peter	Banks Dourlein	Alex Peter	Blandeburgo Dourlein		
Peter Jon	Dourlein Dudas	Shane Arlette	Burgess Cordery	Richard Angie	Edmiston Souza	Alain-Philippe Ed	Durand Galda	Chris David	Kopach Lane	Ed Ryan	Galda Goodell		
Liesl	Folks	Peter	Dourlein	Jose	Teran	Ryan	Goodell	Charlie	Lynn	Chris	Kopach		
Marla	Franco	Alain-Philippe	Durand	Alex	Underwood	Amanda	Hunt	Steve	Marker	Trevor	Ledbetter		
Ryan	Goodell	John Paul	Jones	Bruce	Vaughan	Julie	Katsel	Grant	McCormick	Mark	Novak		
David	Heeke	Kim	Jones	Connie	Yazzie	Steve	Moore	Mark	St. Onge	Jim	Sayre		
Leila	Hudson	Ladd	Keith	Analytics		Mark	Novak	Accessibility					
Luis	Irizarry Figueroa	Lynn	Nadel	Mark	Ray	Campus Landsca		Eric	Bell				
Laura Todd	Johnson	Francisco Pam	Pedroza	Peter	Dourlein	Jeff	Christensen	Peter Amanda	Dourlein Kraus				
Sam Steve	Keim Kelly	Joaquin	Perry Ruiz	Housing & Re	Blandeburgo		Dourlein Feldt	Campus Recreation	-				
Marc	Miller	Darcy	Van Patten	Peter	Dourlein	Trevor	Ledbetter	Peter		-			
Steve	Moore	Research	varifation	- Cici	Dounem	r caer Bournell	, cici	Grant	McCormick	Trov	Vaughn		
Gary	Packard	Keith	Aspinall				Mark	Novak		ss & Transportation			
Nancy	Pollock-Ellwand	Ralph	Banks			Sandra	Obenour-Dowd	Peter	Dourlein				
Patrick	Robles	Elizabeth	Cantwell			Tanya	Quist	Jim	Sayre	_			
JP	Roczniak	Elliott	Cheu			Luis	a Bar (1) Trans	Campus Sustainability					
Lisa Andrew	Rulney Schulz	Peter Christine	Dourlein Gaul				Courtney Peter	Crosson Dourlein					
Jessica	Summers	Ken	McAllister					Mike	Herman				
Steve	Voeller	John Sangita	O'Neil Pawar					Trevor	Ledbetter				
		Lauren	Zajac										

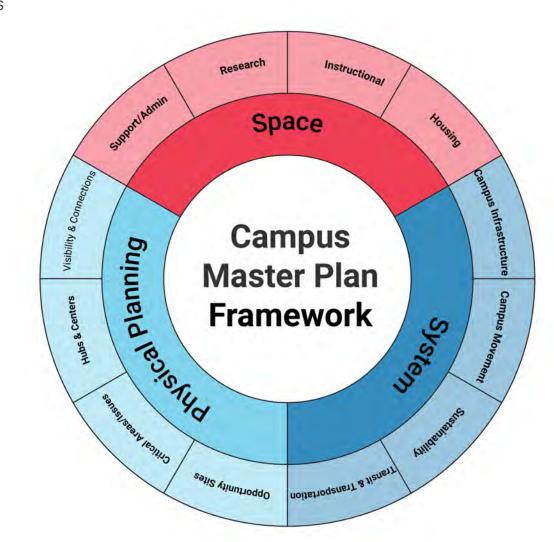
# **Master Plan Framework**

Key areas for campus wide improvements

STRATEGIC PLAN ALIGNMENT

- 1 SPACE
- 2 SYSTEMS
- 3 PHYSICAL PLANNING

SUPPORTING
TOPICS



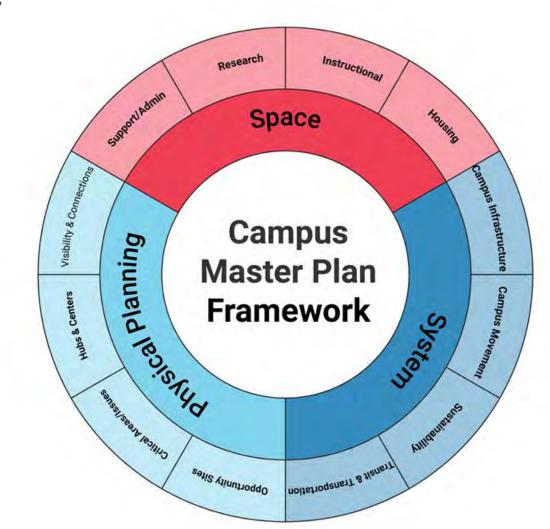
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Key areas for campus wide improvements

STRATEGIC PLAN

- 1 SPACE
- 2 SYSTEMS
- 3 PHYSICAL PLANNING

SUPPORTING
TOPICS



#### **Key Analytical Drivers:**

- Enrollment
- Research &
   Innovation Resources
- Campus Quality and Functionality

#### **Additional Drivers**

- Building Capacity and Conditions
- Academic and Program growth

# **Enrollment Trends**

Fall 2022 - Total Enrollment

University of Arizona Total

51,134

**Enrolled Students** 

(41,906.00 FTE)

#### **Undergraduate Students**

40,407 33,723.67 13.21

Headcount FTE Average SCH

#### **Graduate Students**

10,727 8,182.33 10.34 Headcount FTE Average SCH

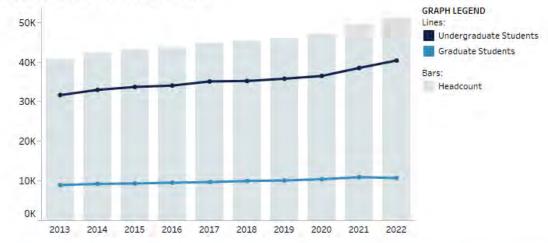
#### Total Enrollment by Campus

Main	39,606
Arizona Online	8,132
Arizona International	1,644
Phoenix	766
Distance	652
Southern Arizona	214
Global Direct	120

#### Trends | Total Enrollment

College (Primary Major)	Campus	Residency
All	All	All
IPEDS Race / Ethnicity*	Sex	Full-Time/Part-Time
AII	All	All

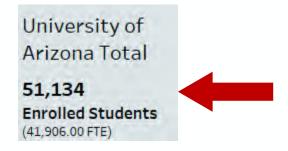
### University of Arizona Total Fall Enrollment by Academic Career



Academic Career	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Undergraduate Students	31,670	32,987	33,732	34,072	35,123	35,233	35,801	36,503	38,528	40,407
Graduate Students	8,951	9,249	9,356	9,553	9,708	9,984	10,117	10,429	10,943	10,727
Grand Total	40,621	42,236	43,088	43,625	44,831	45,217	45,918	46,932	49,471	51,134

# **Enrollment Trends**

Fall 2022 - Total Enrollment



#### **Undergraduate Students**

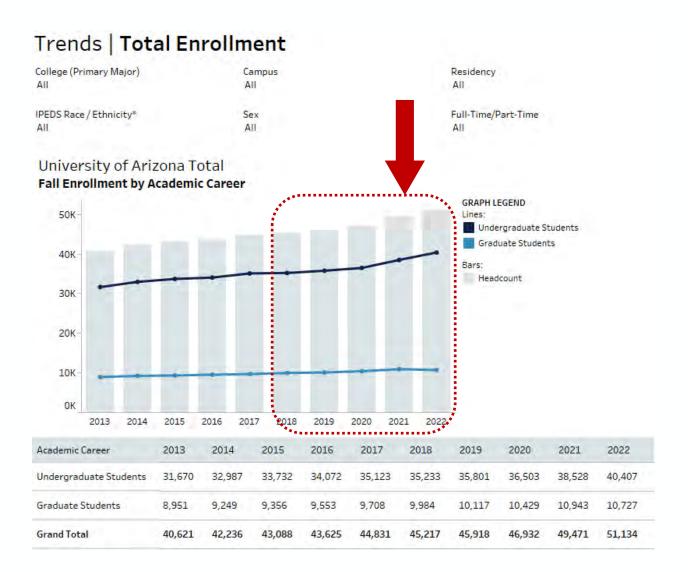
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#### **Graduate Students**

10,727	8,182.33	10.34		
Headcount	FTE	Average SCH		

#### Total Enrollment by Campus

Main	39,606
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Southern Arizona	214
Global Direct	120



# **Research & Innovation Profiles**

Master Planning to keep up with the University of Arizona Goals



#### PATH TO \$1B: THE HERD EXPENDITURE GAP

THE OTHER COLLEGES NEED TO COLLECTIVELY INCREASE RESEARCH PRODUCTIVITY BY AT LEAST \$40M/YEAR OVER CURRENT RESEARCH IMPACT TO REACH THE GOAL.



#### **HEALTH SCIENCES**

- Grow to \$412.9M Annual HERD by FY25
- Increase of \$120M/year over current research impact (and add another \$80M to get to the Blue Ridge top 25)

#### Ö

#### **COLLEGE OF ENGINEERING**

- Grow by roughly \$40M Annual HERD by FY26
- Increase of \$20M/year over current research impact
- 50 new T/TE faculty by FY26

# COLLEGE OF APPLIED

- Grow to \$20M Annual HERD
   by FY25
- Increase of \$19.5M/year over current research impact
- · At least six new faculty

# **Research & Innovation Profiles**

Master Planning to keep up with the University of Arizona Goals





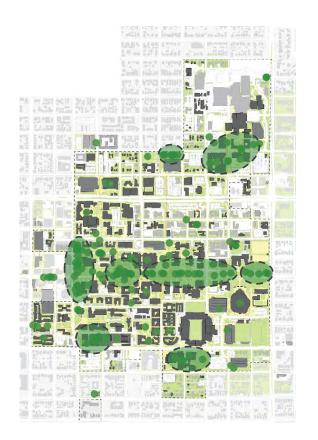
# Increase R&D Expenditures to \$1B

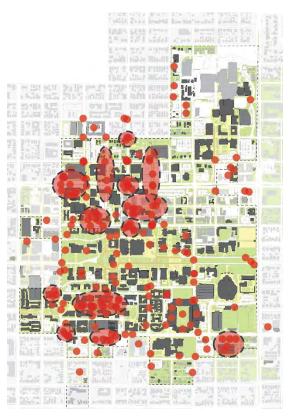
#### Investing in Key Research Areas:

- Health Sciences,
- College of Engineering,
- College of Applied Science & Technology

# **Campus Quality & Functionality**

Fall 2022 - Total Enrollment





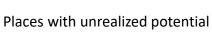














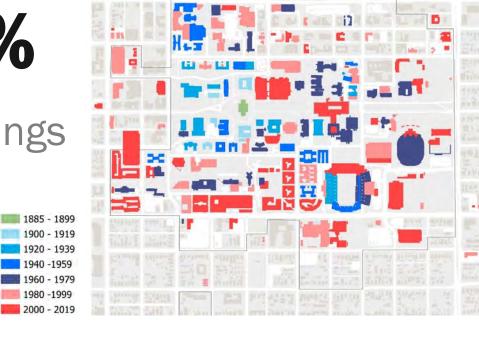
# **Building Conditions & Capacity**

Existing Facilities Conditions Index of the Campus

50+ years

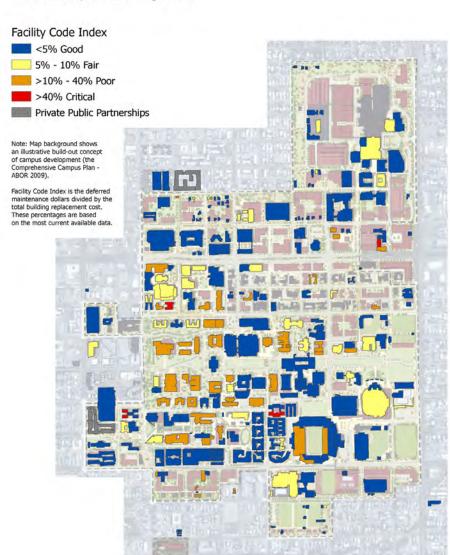
~ 45 %

of total buildings



#### **FACILITY CODE INDEX MAP**

The University of Arizona August 2022







# Space

# Instructional

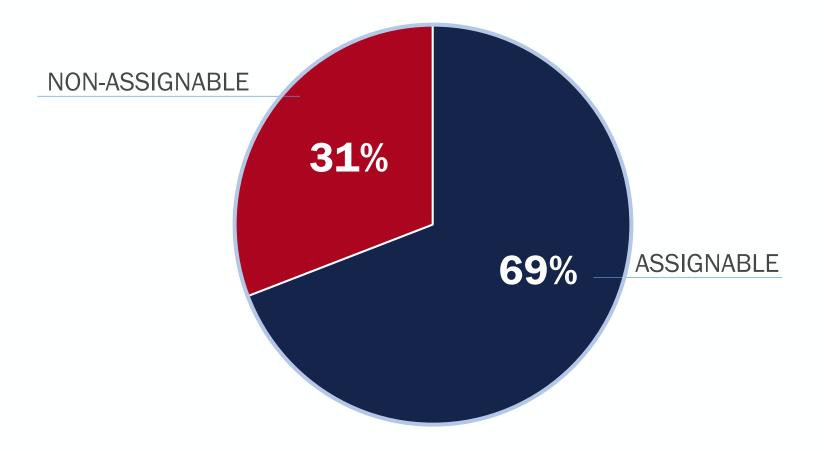
Space

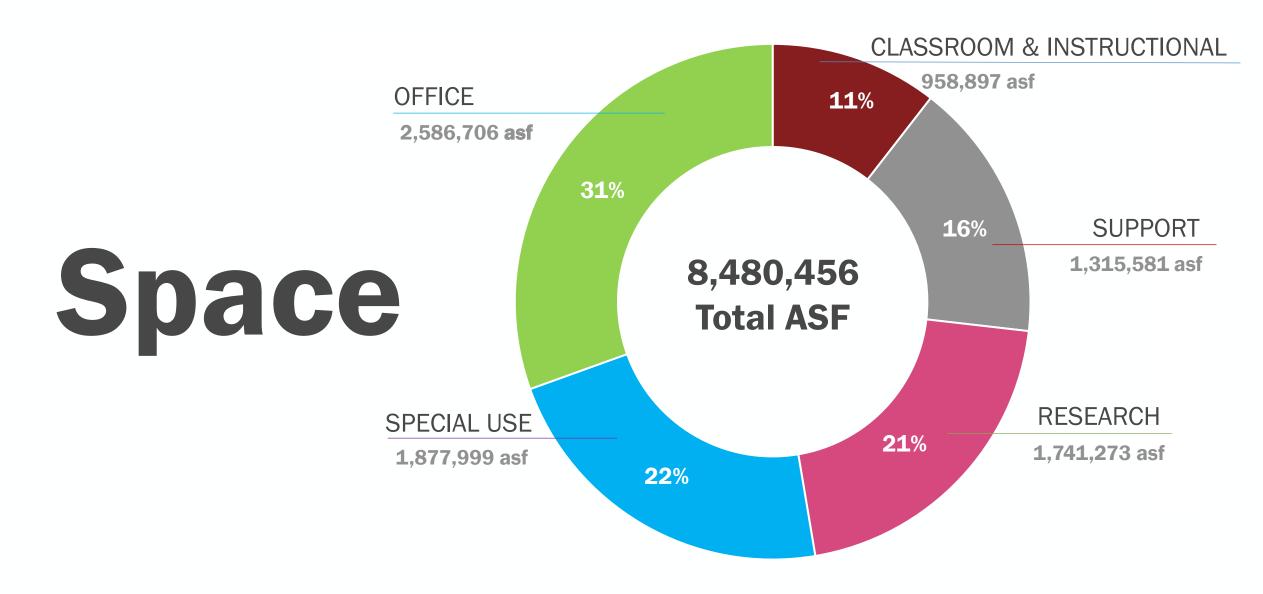
**Research & Innovation** 

Housing

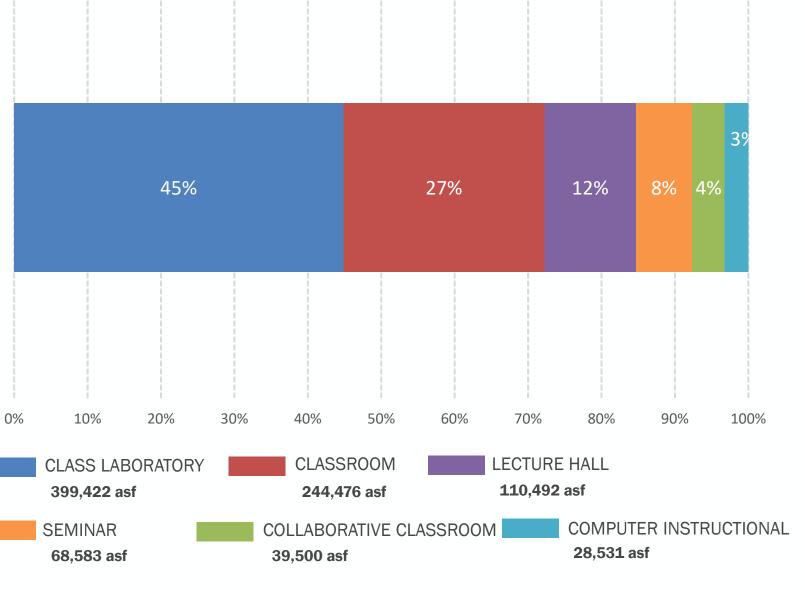
Support/Admin

# Space



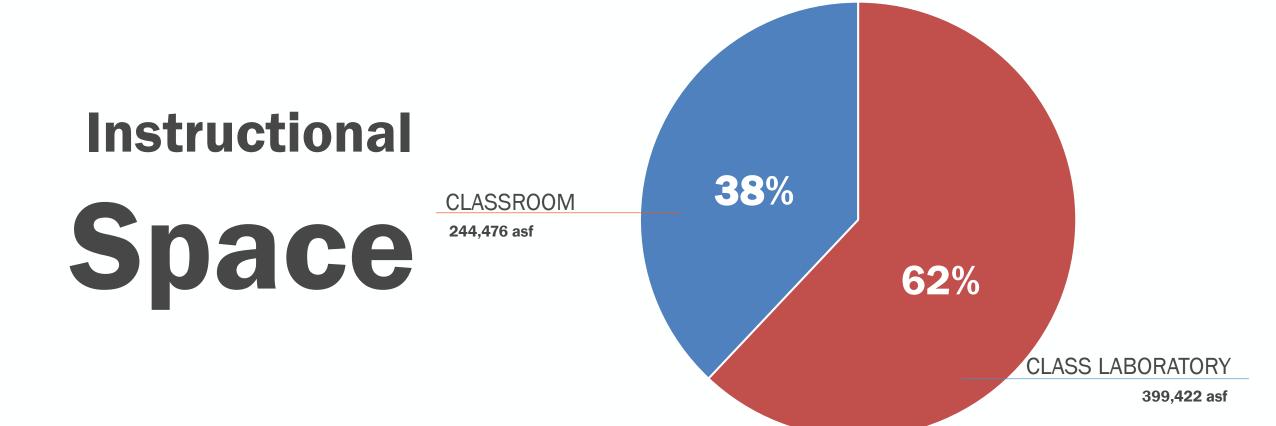


# Space

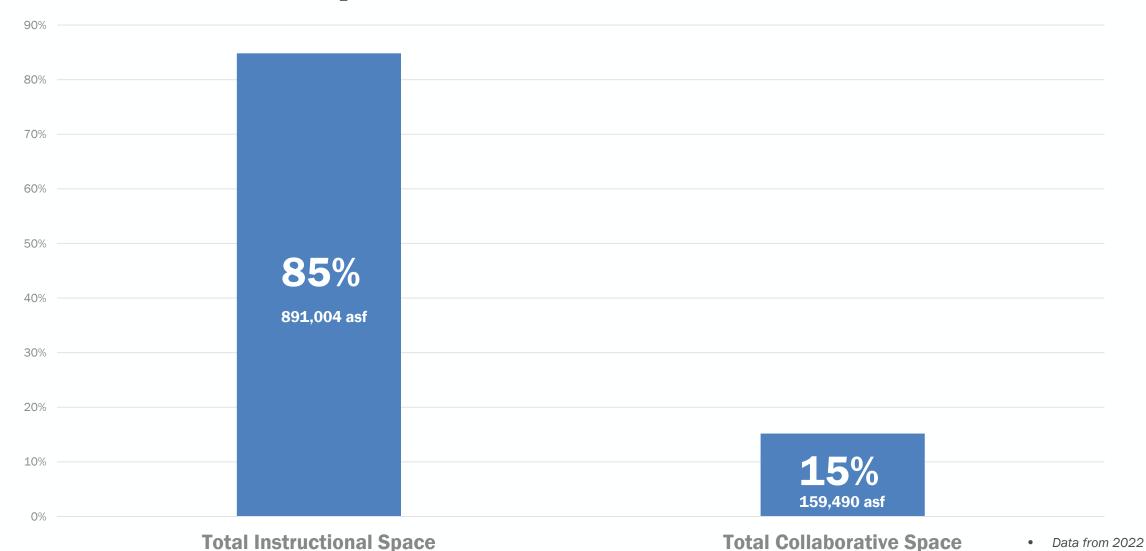


Data from 2022

\*Data excludes Housing & Banner Health



# **Instructional Space Distribution**





## **Instructional Space vs Enrollment Trends**

Instructional Space - Campus Analysis

From 2010-2015
Total Enrollment
Increased from

38,767

to

43,088

**11%** increase

Classroom Space Increased by

20,606 GSF 9% increase

Class Lab Space Increased by

34,318 GSF 9% increase

## **Instructional Space vs Enrollment Trends**

Instructional Space - Campus Analysis

From 2016-2022
Total Enrollment
Increased from

43,088

to

51,134

**18.6%** increase

Classroom Space Increased by

22,124 GSF 9% increase

Class Lab Space Increased by

34,318 GSF 9% increase

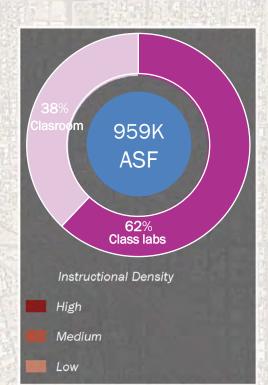
## **Density**

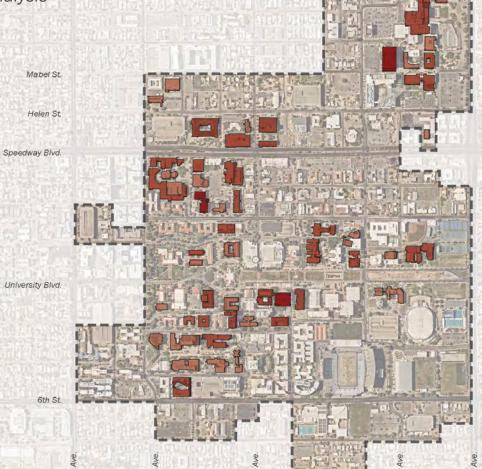
Instructional Space - Campus Analysis

Mabel St.

Helen St.

Speedway Blvd.

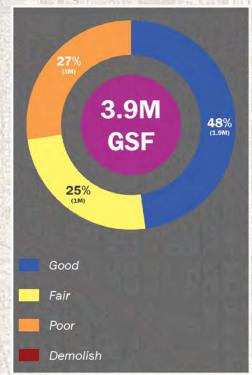




## Condition - Top 30 (Overall)

Instructional Space, Highlighted Top 30 Buildings\*

#### **Building Condition**

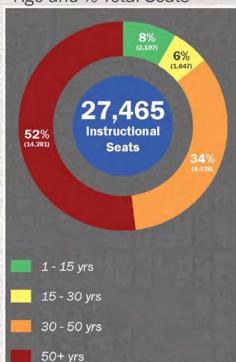




## Condition - Top 30 (Overall)

Instructional Space, Highlighted Top 30 Buildings\*

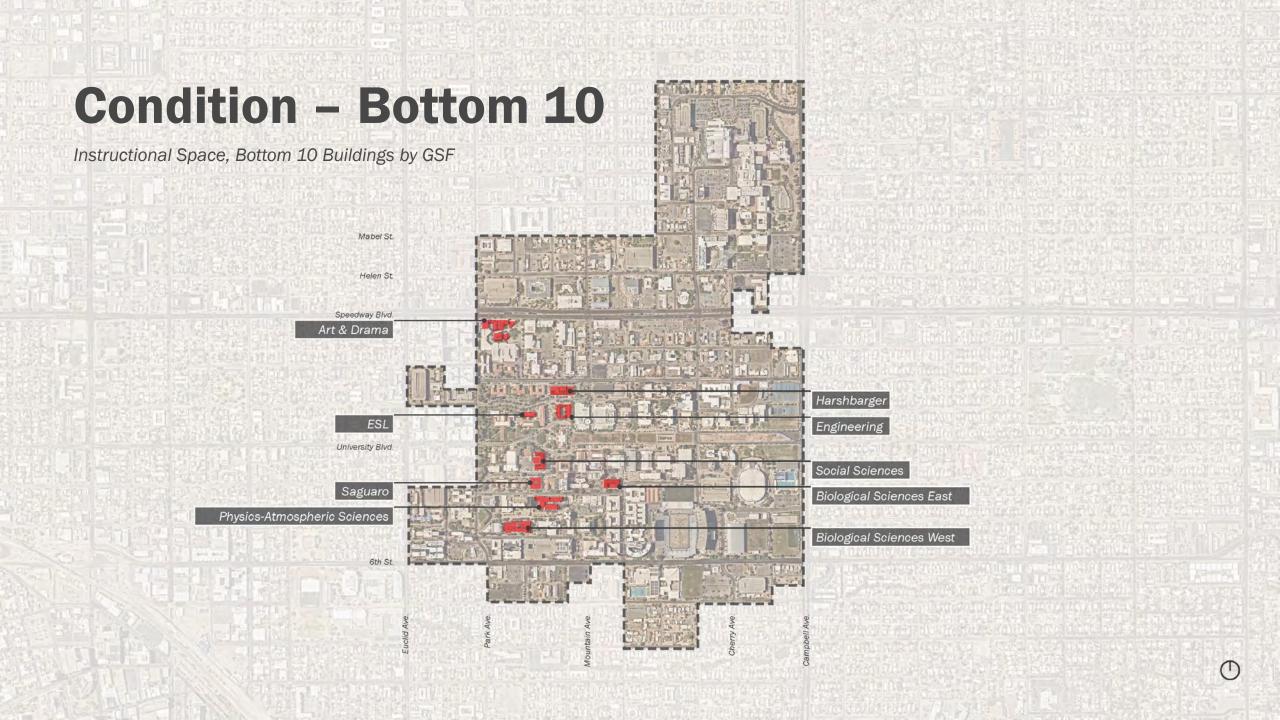
Age and % Total Seats





#### **Analysis:**

- Over 50% of the seats are in the aging assets
- Some of those assets are undergoing redevelopment and improvement and some are forecast for near-term improvement
- There is a gap that requires capital planning & programming to address the aging issues



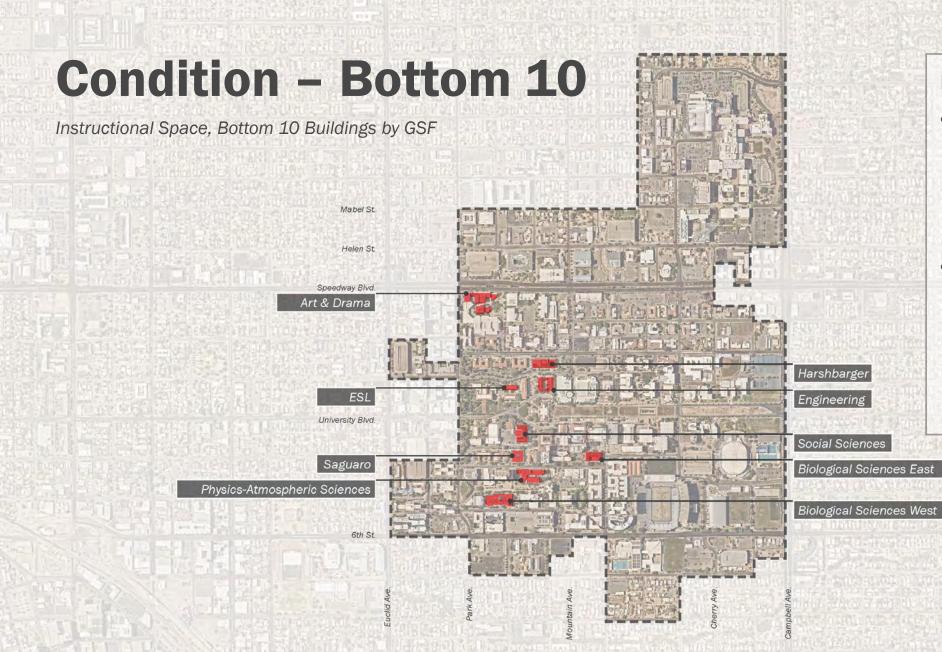
# Instructional Space

### **Academic Delivery Planning**

Maintain alignment among the key factors of the enrollment profile, evolving delivery modes as well as general instructional and program specific lab needs.

### **Instructional Capital Plan**

Address the potential gap between the reinvented resources and new resources of the past decade. Developing capital plan to address aging buildings as well as advancing instructional resources in those buildings.



#### **Recommendation:**

- Develop a capital and asset improvement plan addressing the classroom/ instructional resources.
- What can be renovated at what pace in a cost and sf /year model to support growth, what might be needed, and describe a new range.

## **Projects**

Instructional Space - Current & Proposed

Mabel St.

Helen St.

Speedway Blvd.

University Blvd.

- New Construction
- 1 Chemistry Expansion Classrooms
- Renovation of Existing Space
- 2 ILC Bldg. Digital Learning Lab
- 3 Education Digital Learning Lab
- 4 CAPLA Learning Enhancement Renovations
- 5 McClelland Park Retail Learning Lab
- 6 Shantz





### **Current vs Bottom 10**

Instructional Space - Projects

Mabel St.

Helen St

Speedway Blvd.

University Blvd.

- Current Instructional Projects
- 1 Chemistry Expansion Classrooms ILC Bldg.
- Digital Learning Lab
- 3 Education Digital Learning Lab
- 4 CAPLA Learning Enhancement Renovations
- 5 McClelland Park Retail Learning Lab
- 6 Shantz



Bottom 10 Instructional

- 7 Art
- 8 Drama
- 9 ESL
- 10 Physics-Atmospheric Sciences
- 11) Biological Sciences West
- 12 Harshbarger
- 13 Engineering
- 14 Social Sciences
- 15) Biological Sciences East
- 16 Saguaro

## **Instructional Space – Draft Recommendations**

- **1. Migration to active learning environments**, increased AV/IT needs, FF&E, more space per student, and a curriculum emphasis on the on-campus, in-person experience, put pressure on the **quality of the environments**.
- 2. Significant amounts of instructional space and seats are in buildings defined as "at risk" from FCI; an **analysis of both building condition and functional adequacy** is advised to determine the exact conditions and define longer term improvement or replacement needs.
- 3. Develop a **correlation between instructional spaces and likely enrollment profiles** to create a long-term space requirement profile. Also develop some higher and lower points to help with impacts like online (-) or class lab reqs.(+)
  - I. Note the significant growth of online students and distance delivery in the past 5 years.
  - II. Note: that number is being improved by the following projects (name them) leaving xyx sf to be analyzed or renovated or replaced.
- **4. Develop a capital and asset improvement plan** addressing classroom/ instructional resources: what can be renovated and at what pace in a cost and sf/year model to support growth, what might be needed, and describe a new range.
- 5. Develop an **analysis of key academic programs** that are likely to have stronger growth than the median. Will these have classroom or class lab impacts?
- 6. Develop some masterplan opinions about classroom locations likely supporting hubs.



## **Research Space vs Enrollment Trends**

Research & Innovation Space

From 2010-2015 Total Research Expenditures remained at

\$600M

to

\$604.5

<0.5% increase

Research Space Increased by

102,234 ASF

6% increase



## Research Space vs Enrollment Trends

Research & Innovation Space

From 2016-2022 Total Research Expenditures increased from

\$604.5M

to

\$791 M

30.8% increase

Research Space Increased by

87,852\* ASF

\*Excludes Grand Challenges

5% increase



## **Primary Research Facilities**

Research & Innovation Space

Mabel S Helen S

Primary Buildings

- (1) Arizona Health Sciences Center Basic Sciences\*
- 2 Speech + Hearing Sciences
- (3) Civil Engineering
- 4 John W. Harshbarger Bldg.\*
- 5 Mines + Metallurgy\*
- (6) Engineering
- 7 Psychology
- Charles P. Sonett Space Sciences Bldg.
- 9 Meinel Optical Sciences
- 10 Carl S. Marvel Laboritories of Chemistry
- 11) Forbes\*
- 12) Biological Sciences West\*
- (13) Physics Atmospheric Sciences
- (14) Shantz
- 15 Biological Sciences East\*



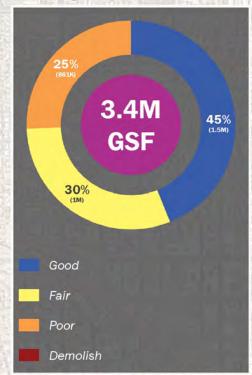
FCI Score
Good
Fair

- Secondary Buildings
- 16 Sydney E. Salmon Bldg. + Leon Levy Cancer Ctr.
- 17 Steel Children's Research Center
- 18 Life Sciences North
- 19 Skaggs Pharmaceutical Sciences Center
- 20 Medical Research + Keating Bioresearch Bldg.
- 21 Aerospace and Mechnical Engineering
- 22 Electrical and Computer Engineering
- 23 Steward Observatory Annex
- 24 Steward Observatory
- 25) Gerard P. Kupier Space Sciences + Addition
- 26 Richard F. Caris Mirror Lab
- 27 Chemistry
- 28 Marley
- 29 Gould-Simpson
- 30 Life Sciences South
- 31) Animal and Comparative Biomedical Sciences
- 32 Chemical Sciences Bldg.

## Condition - Top 30 (Overall)

Research & Innovation Space – Highlighted Top 30 Buildings by GSF\*

#### **Building Condition**

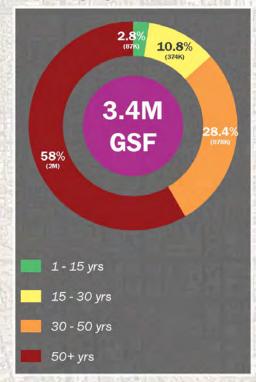




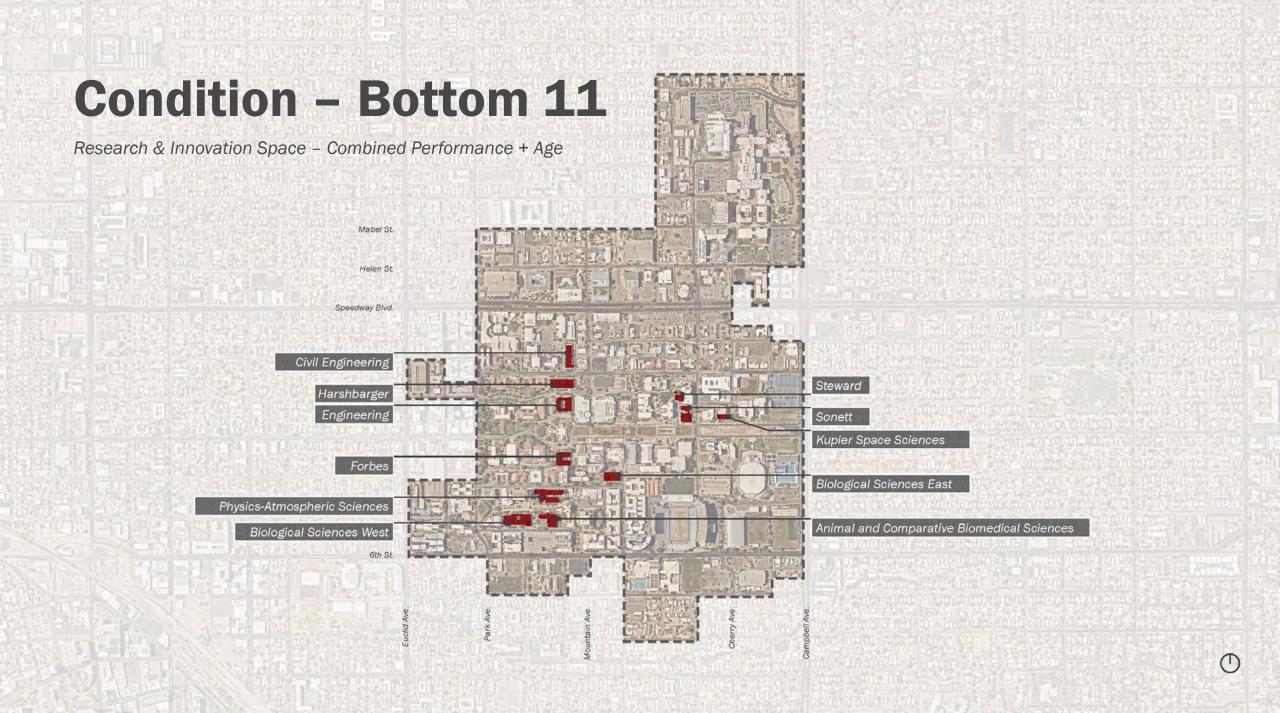
## Condition - Top 30 (Overall)

Research & Innovation Space – Highlighted Top 30 Buildings by GSF\*

#### Building Age







# Research & Innovation

#### **Detailed Research Program & Space Plan**

Develop and maintain alignment of research profiles with space typologies and phenotype.

## Capital Planning for Research-oriented Assets not recently reinvented

Address the aging and obsolescence gap – focus on 10 key buildings and sites.

## Position Research Resources to make them visible

Elevate the presence and visibility of research and innovation resources on campus through high visibility positioning.

## **CO Study Recommendations** Research & Innovation Space (for reference) Mabel St. Speedway Blvd. University Blvd. **Proposed Condition** Demolish Renovate

Partial Demolition

Fair Condition

**Good Condition** 

#### COMPARISON OF OUR 28 BUILDINGS VS CO ARCHITECTS PRIMARY 16 + SECONDARY 18

	UA "28"	CONDTION	CO PRIMARY 16	
1	AHSC Basic Sciences/Clinical -	POOR - RENOVATE	AHSC Basic Sciences/Clinical Sciences	
2	Bio Sciences East-	POOR-RENOVATE for non-lab?	Bio Science East	
3	Bio Sciences West-	POOR - RENOVATE	Bio Science West	
4	Civil Engineering-	POOR-RENOVATE/REPLACE?	Civil Engineering	
5	Engineering-	POOR-RENOVATE (historic)	Engineering	
6	Forbes-	POOR-RENOVATE (historic)	Forbes	
7	Harshbarger-	POOR-RENOVATE	Harshbarger	
8	Marvel Labs-	POOR-RENOVATE	Marvel Labs	
9	Meinel-	FAIR	Meinel	
10	Mines & Metallurgy-	POOR-TOTAL GUT OR DEMO	Mines & Metallurgy	
11.	Physics & Atmospheric Sci-PAS-	POOR-RENOVATE/PARTIAL DEMO?	Physics & Atmospheric Sciences - PAS	
12	Psychology-	FAIR	Psychology	
13	Shantz-	POOR - WILL BE RENOVATED	Shantz	
14	Sonnett (NOT ON UA LIST)	DEMO/REPLACE	Sonnett	
15			Speech	
			CO SECONDARY 18	
16	AME-	GOOD	AME	
17	Animal Sciences (90)-	GOOD? RECENT RENOVATION	Animal Sciences (90)	
18	Chemical Sciences-	POOR - RENOVATE	Chemical Sciences	
19	Chemistry-	GOOD	Chemistry	
20	Electrical & Computer Eng. ECE-	GOOD	Electrical & Computer Eng. ECE	
21	Kuiper Space Sciences-	POOR-RENOVATE	Kuiper Space Sciences	
22	Gould-Simpson-	GOOD	Gould-Simpson	
23	Cancer Center-	FAIR:	Cancer Center	
24	Life Science North-	GOOD	Life Science North	
25	Life Science South-	GOOD	Life Science South	
26	Keating Building-	GOOD	Keating Building	
27	Marley-	GOOD	Marley	
28	MRB-	GOOD	MRB	
29	Mirror Lab-	GOOD	Mirror Lab	
30	Steele Children's Research -	GOOD	Steele Children's Research Center	
31	Skaggs Pharmacy-	FAIR:	Skaggs Pharmacy	
32	Steward Obs. Annex (bldg. 64)-	POOR-EVENTUAL DEMO	Steward Observatory (bldg. 65)	
33	Sydney Salmon Building-	GOOD	Sydney Salmon Building	
34	BSRL-	GOOD		
35	Tree Ring Archives-	GOOD		
36	Saguaro Hall-	FAIR - RENOVATE? (Potential		



## **Current Projects**

Research & Innovation Space

Mabel St.

Helen St.

sity Blvd.

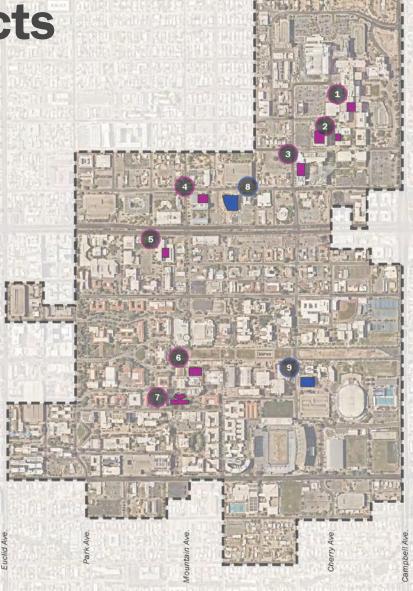
Speedway Blvd.

Renovation of Existing Space

- 1 UAHS Sleep Research Center
- 2 Pharmacy Lab Renovations
- 3 BSRL Basement
- 4 AME Wind Tunnel Complex
- 5 ECE Micro Nano Lab
- 6 Chemistry Renovations
- 7 Shantz Building Renovation

New Construction

- 8 Applied Research Building
- g Grand Challenges Building





### **Research & Innovation Recommendations**

#### Draft

- 1. Focus on the Top "10" Buildings for transformational capacity vs. critical site benefits.
- 2. Develop a linear replacement of space per year as a reference. Develop a plan for capital and projects in the gap.
- 3. Develop key sites for future research buildings including various types of research alliances.
- 4. Develop program profiles for Bridges or other UA resources.
- 5. Develop long-term space typology profiles create a balancing matrix of research typologies for current profiles and future needs.
- 6. Determine future programs that might have new research needs.
- 7. Look for innovation opportunities in creative space that might support experimentation and open access.
- 8. Determine the **impacts of research space growth to Gen-Ed** programs.
- 9. Key campus anchors for future research hubs in the following areas:
  - I. Cherry Avenue potential Research & Innovation Corridor (space & astronomy redevelopment of Sonnet as hub)
  - II. Sciences Concourse replacement of Math & landscape improvements
  - III. Engineering Re-imagine Harshbarger, Mines and Engineering for long-term
  - IV. Sites along 6<sup>th</sup> Street potential infill for future development
  - V. Health Sciences AHSC renovation

## **Recommendations - Campus Locations**

Research & Innovation Space



- Research and Innovation Recommendations
- Cherry Ave. Potential Innovation Corridor
- Sciences Concourse Math Replacement
- Harshbarger Reimagine for the long-term
- Engineering Reimagine for long-term
- 6th St. Potential Infill
- Health Sciences AHSC Renovation
- Arts District Potential Innovation Partnership



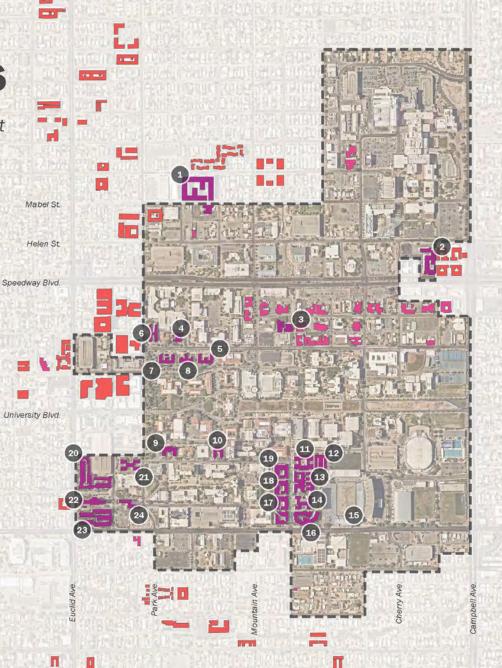


## **On-Campus**

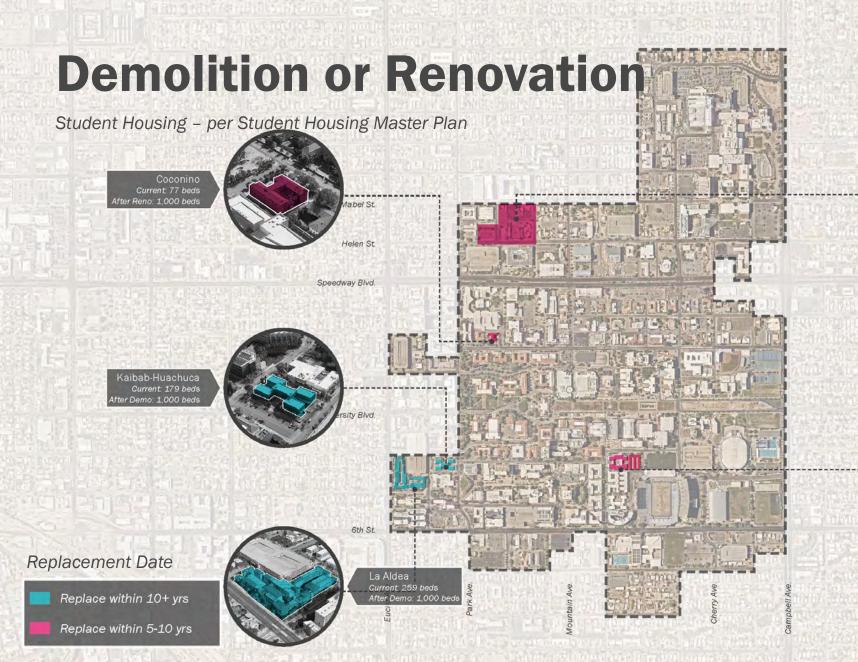
Student Housing – with Bedcount

Off Campus Housing
On Campus Housing (4,172 beds)

Greek Housing



		NO. C. T. DESTRUCTION OF THE	Bed
	#	Name	Count
	1	Honors Village	502
	2	Babcock	123
	3	Pima	74
	4	Coconino	77
	5	Yuma	94
	6	Manzanita-Mohave	192
	7	Gila	96
	8	Maricopa	65
	9	Cochise	89
	10	Yavapai	87
	11	Graham-Greenlee	170
	12	Норі	60
	13	Colonia de la Paz	263
	14	Apache Santa Cruz	182
	15	Navajo-Pinal	81
	16	Likins	190
E.	17	Villa del Puente	156
	18	Posada San Pedro	124
	19	Pueblo de la Cienega	124
	20	La Aldea	259
	21	Kaibab-Huachuca	179
	22	Coronado	402
	23	Arbol de la Vida	375
	24	Arizona-Sonora	208
		THE RESERVE OF THE PARTY OF THE	





Honors Expansion
Current: 502 beds
Expansion: 800 - 1 000 beds

#### Takeaways:

- Adding 800-1000 beds in next 5 years
- Adding another 800-1000 beds in next 5-10 years
- 10 Year forecast 1600-2000 beds



Graham-Greenlee + Hopi Current: 230 beds combined After Demo: 800 - 1,000 beds



# Systems

# Systems-

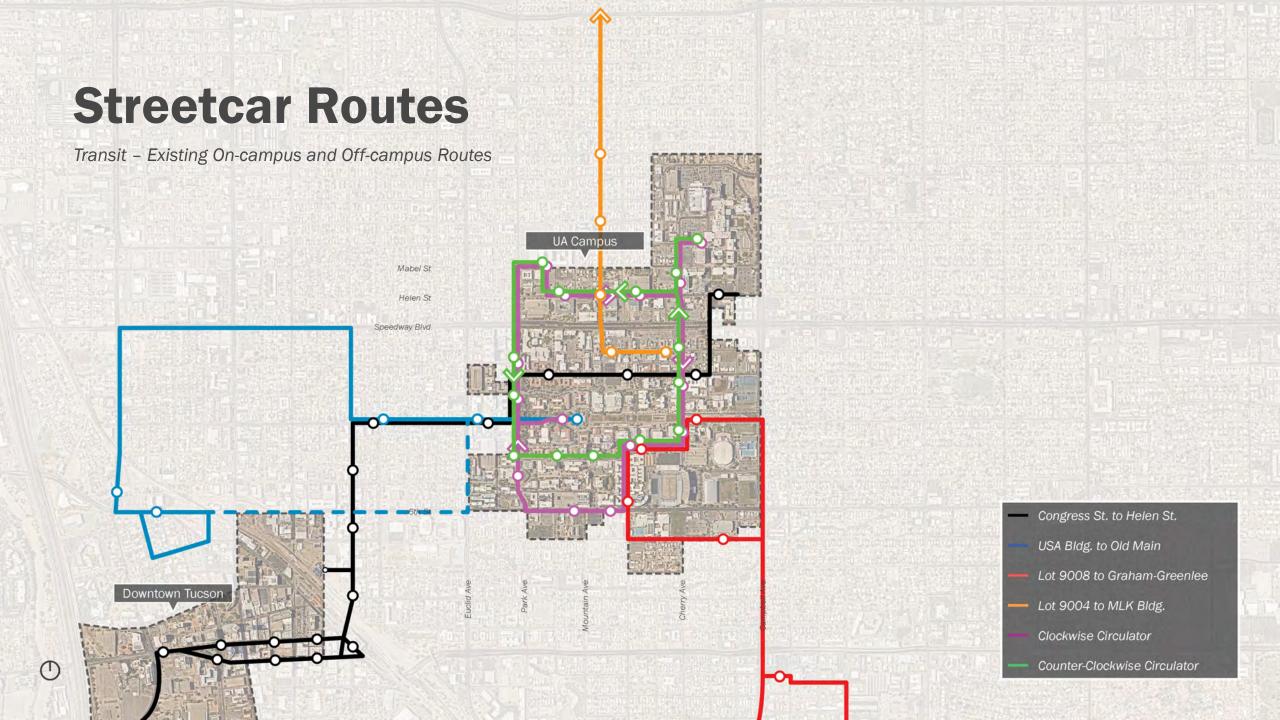
## **Transit**

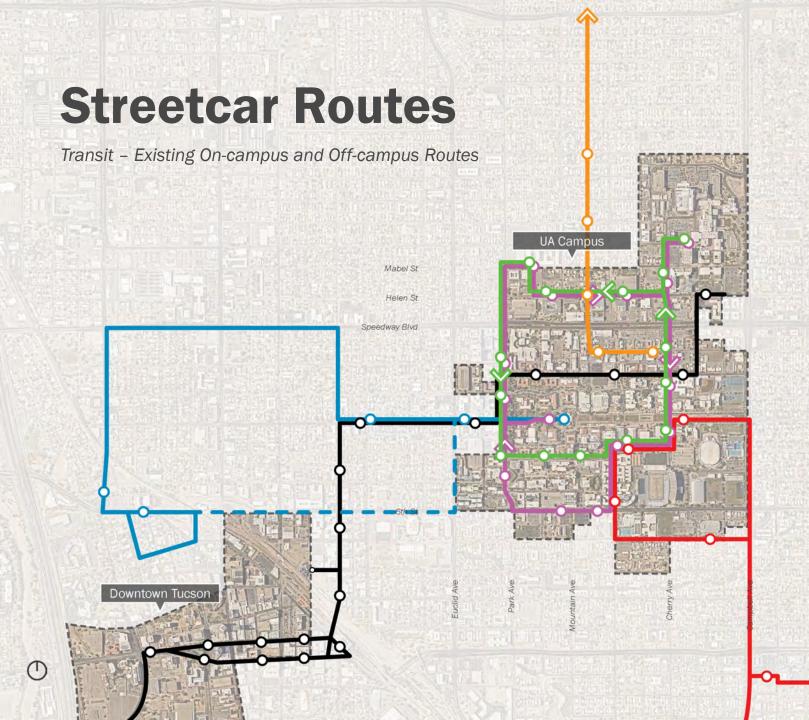
**On-Campus Mobility** 

**Campus Infrastructure** 

Sustainability







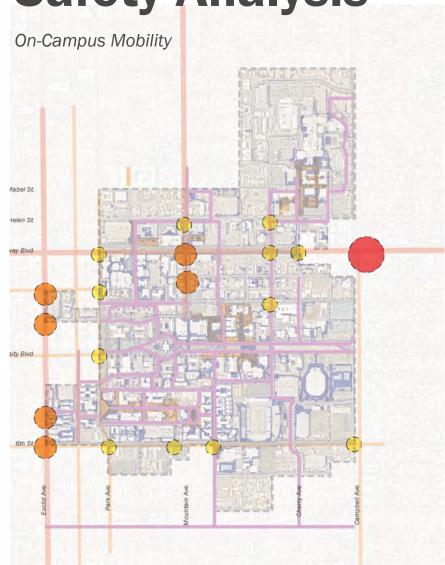
#### **Recommendation:**

Reanalyze off-campus routes for better connectivity to destinations and stops along those routes.

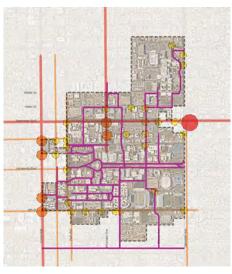
- Congress St. to Helen St.
- USA Bldg. to Old Main
- Lot 9008 to Graham-Greenlee
- Lot 9004 to MLK Bldg.
  - Clockwise Circulator
- Counter-Clockwise Circulator



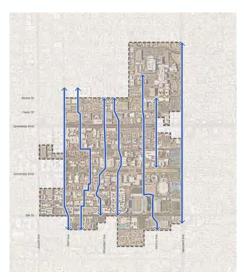
**Safety Analysis** 



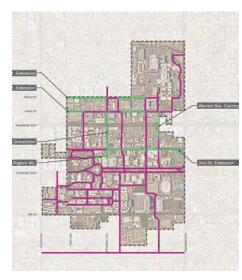
Issues Diagram



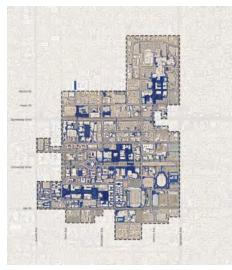
Intersections



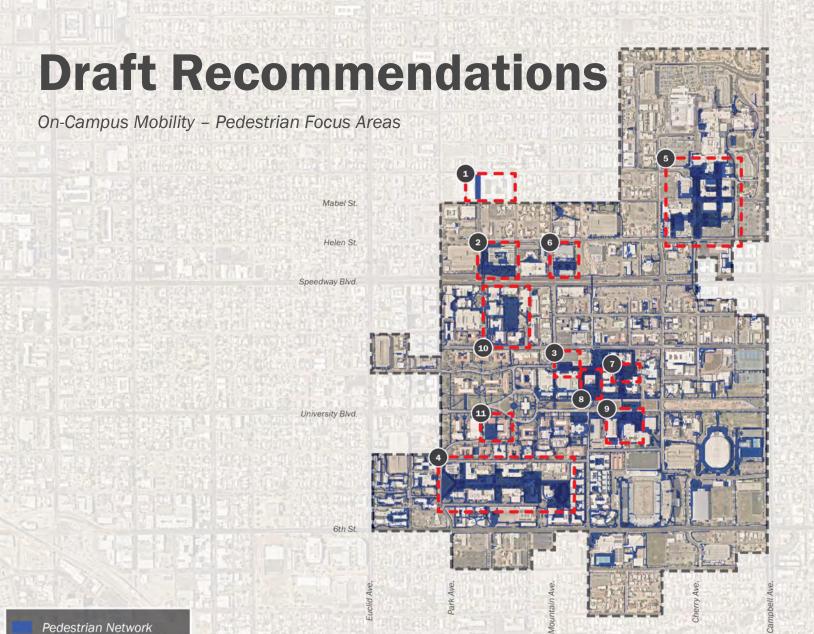
N-S Connections



Bicycle Connections



Pedestrian Connections



Significant Open Spaces

- 1 Honors Village Plaza
- (2) McClelland Plaza
- 3 James and Perry Rogers Plaza
- 4 Science Concourse
- (5) AHSC Academic Quad
- 6 AME Courtyard
- (7) Education Plaza
- 8 Alumni Plaza
- (9) Library Plaza
- 8 CAPLA Courtyard
- (9) Centennial Courtyard

## **On-Campus Mobility – Recommendations**

- 1. Prioritize traffic calming and traffic management for pedestrians along high incident streets.
- 2. Improve intersections along campus edges, notably Speedway Blvd. and Mountain Ave., Euclid Ave. and West Campus, and along Park Ave.
- 3. Enhance existing connections through branding and signage, particularly along Highland Street, Mountain Ave, Speedway Blvd and Euclid Ave. to improve the character of campus edges.
- 4. Improve key north-south corridors for enhanced service and delivery. I.e. Cherry Ave., Mountain Ave.
- 5. Consider impacts of on-campus enrollment and online enrollment to **determine long-term parking adequacy.**
- **6. Expand the bicycle network** to create a robust bicycle network on-campus and off-campus



### **Campus Gateways**

Campus Infrastructure

#### • 6<sup>th</sup> Street

- 6<sup>th</sup> Street & Park Ave
- 6<sup>th</sup> Street & Campbell Ave

### University Blvd

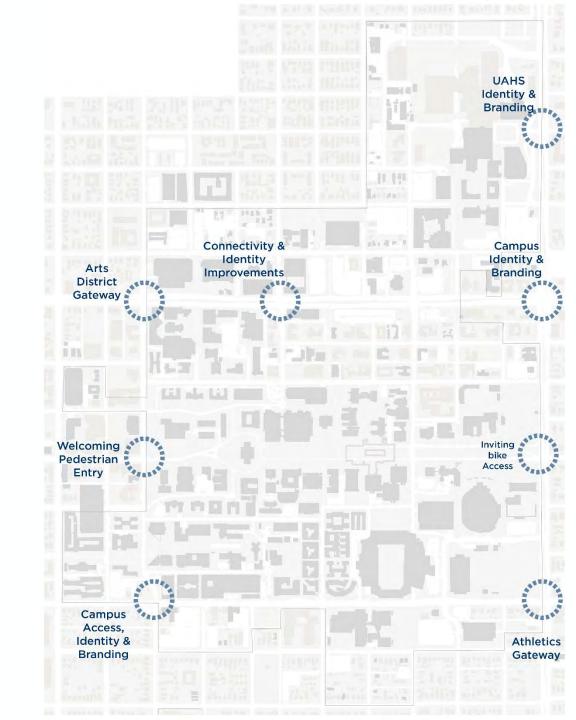
- University Blvd & Park Ave
- University Blvd & Campbell Ave

### Speedway Blvd

- Speedway Blvd & Park Ave
- Speedway Blvd & Mountain Ave
- Speedway Blvd & Campbell Ave

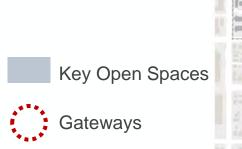
### Adams St & Campbell Ave

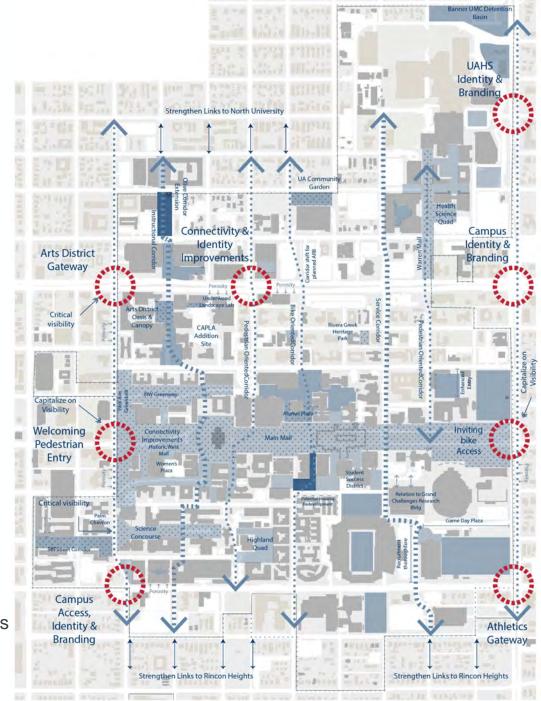




## **Key Campus Open Spaces**

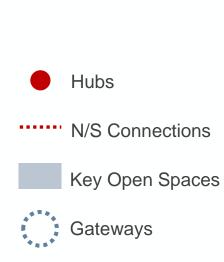
- Historic West Mall
- Science Concourse
- Arts District Quad
- Warren Mall
- Park Avenue Green Belt
- Highland Quad

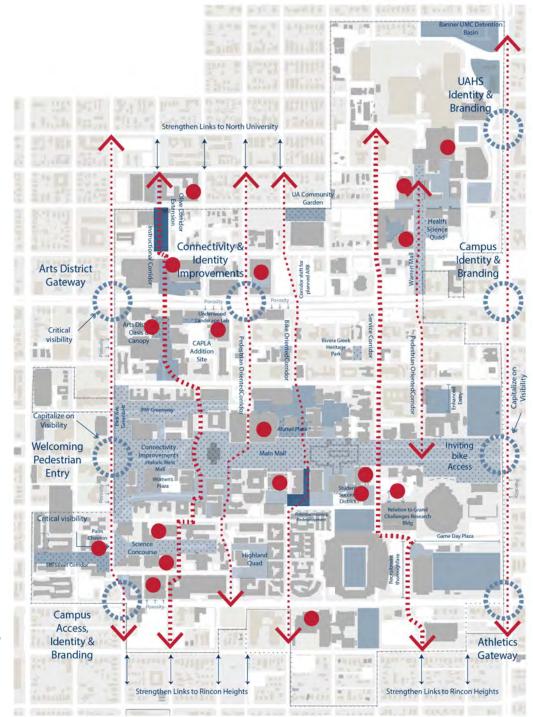




## **Key Campus Connections**

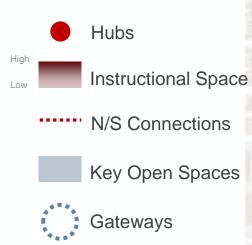
- Olive Road
- Park Ave
- Mountain Ave
- Highland Ave
- Cherry Ave
- Warren Ave
- Campbell Ave

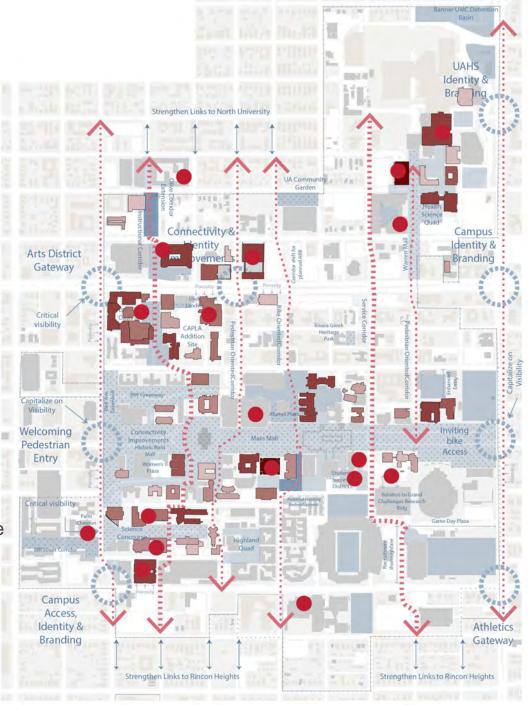




## **Instructional Space Overlay**

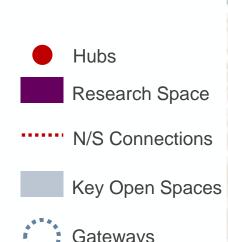
- HSIB
- Henry Koffler Building
- ENR 2
- Arts District Buildings
- Richard Harvill Building
- Old Chem Renovation

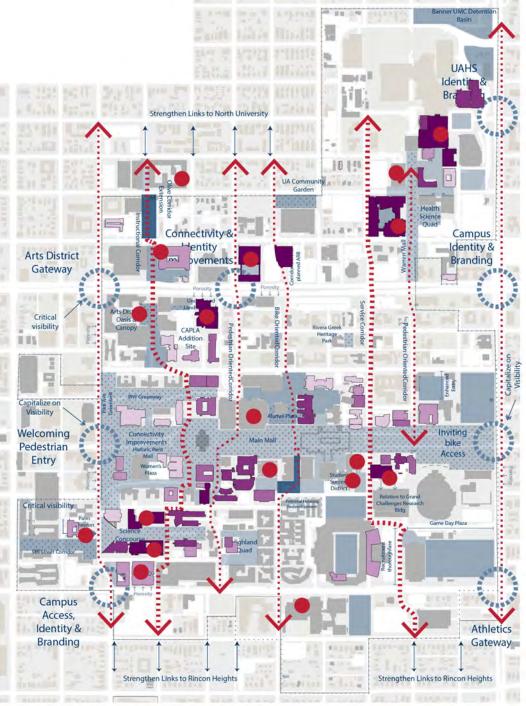




### **Research Space Overlay**

- UAHS Research Facilities
- BIO5
- Gould-Simpson
- Bio-Sciences West
- Marley Building
- UA Engineering Building





### **Open Space - Recommendations** Campus Infrastructure Mabel St. Helen St. Helen St. Speedway Blvd. Olive and Fremont Ave. Cherry Ave. University Blvd. Main Mall to Science Concourse Pedestrian Network Network Recommendations Programmed Open Space Key Open Space

### **Campus Infrastructure Recommendations**

#### **Campus Gateways**

- Enhance the existing gateways with additional branding and signage opportunities focused on 6<sup>th</sup> street & Speedway Blvd.
- Improve pedestrian resources such as widened sidewalks, corrected ramp slopes, pavement markers for safe crossings
- Improve signal efficiency for pedestrian and bicycle movement.
- Improve campus threshold experience through improving the gateways with better shade, integrated materiality and street furniture.

#### **Campus Open Spaces**

- Increase and enhance sustainability standards for the open spaces through native and regenerative species, increased permeable pavement and low impervious cover.
- Actively monitor the energy and operations for maintenance.
- Create flexible and adaptable outdoor environments with various typologies and formats.
- Create functional exterior learning and teaching resources throughout campus.
- Continue to increase shade and climate mitigation across the campus

#### **Campus Connections**

- Improve, enhance, and build the character of the North-South connections on campus.
- Create activators along the connections to support outdoor learning and teaching environments.
- Better sort and define service access along the connectors and campus infrastructure.
- Increase the scale of campus connections to support growing oncampus population.



## **Existing Initiatives**

Sustainability - In-process

- Integration of Sustainability into the University Strategic Plan
- AASHE STARS Reporting
- University Climate Change Coalition (UC3)
- Large-Scale Renewable Energy Agreement
- ENR2 Rooftop Agrivoltaic Project

- Sustainability/Climate Action Plan
- Tucson 2030 District
- Student Engagement
- UArizona Community Garden
- Utility Modification Revolving Fund
- Sustainability Map

### **Strategic Plan Integration**

Sustainability - In-process

#### • Pillar II - Initiative 2.2(A)

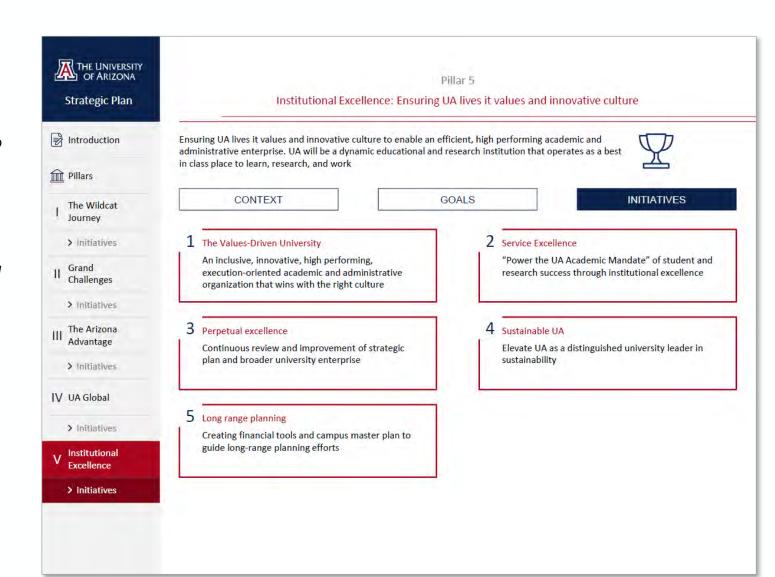
"We are setting out to be a top ten ranked environmental university in the world. To achieve this goal we must not only excel in research on the natural and built environment but also lead in teaching, public service/community impact (i.e., land grant), and creating a sustainable campus,"

#### • Pillar V - Initiatives 5.4(A)

"aims to advance quantifiable environmental performance and practical climate change mitigation strategies in all campus operations, while simultaneously leveraging collaborative outreach across campus and within the Tucson community."

#### • Pillar V – Initiatives 5.4(B)

"aims to integrate sustainability values and best practices into the daily activities and responsibilities of all University faculty, staff and students, while also developing and strengthening community relationships, in order to create collaborative, practical, place-based solutions to local environmental challenges."



## **Online Campus Map**

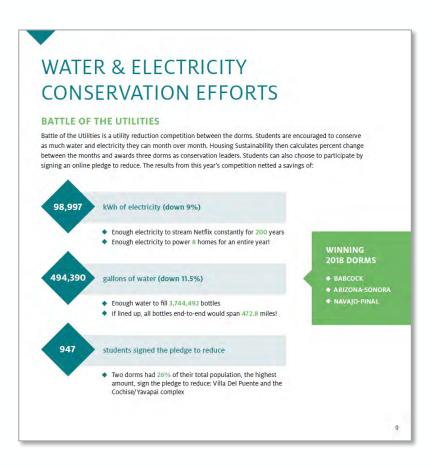
Sustainability - In-process A Sustainability Map 0 Campbell Park SELECT THEMES Park WATER E WAVERLY ST ELINDENST (F) ENERGY BUILT ENVIRONMENT CAMPUS LIFE Esquer Park FOOD NATURAL ENVIRONMENT Himmel Park TRANSPORTATION E 4TH ST WASTE REDUCTION E 5TH ST CLEAR ALL SELECT ALL

## **Housing & Res Life Programs Report**

Sustainability - In-process







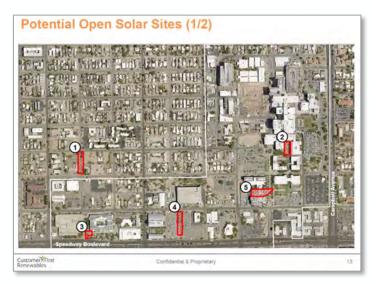
### Renewable Strategy On-Campus

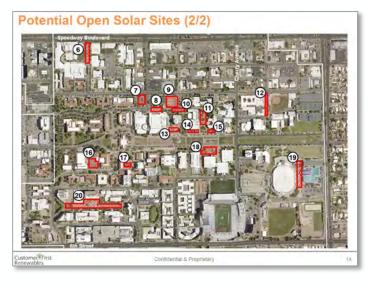
Sustainability - In-process

Renewables

#### Optimizing a Renewable Energy Strategy for UA - Onsite Solar Solution Results of onsite analysis Remaining 15 sites create ~1.3 MW opportunity (~2,300 annual MWh) Rooftop 0.6 MW Main Meter, 0.7 MW AHSC Lot Recent economics filter was updated with refreshed market pricing data, Garage eliminating garages/lots (3.1 MW) 18 2 of 15 sites are future sites: 1 of 15 is currently pursuing solar Does not include Biosphere 2, UA Motor Pool, UA Warehouse, or ground-mount opportunities (would require additional information from Remaining sites range in levelized savings from ~\$2.50 to \$6.00 / MWh 20 -15 15 Main Meter opportunities have better economics given usage profile -10 Expected total NPV of \$0.1 to \$0.4M Small incremental onsite solar should not negatively impact TEP tariff Requires Remaining Initial Roof Sites with unsuited roofs could be added construction unsuited economics unsuitable sites for candidate back in with accelerated roof replacement: for PV plans onsite solar sites sites removed for poor economics could be added back in for strategic reasons Source: UA data, CFR analysis Customer First

Confidential & Proprietary





## **Sustainability – Recommendations**

Subject to the Sustainability and Climate Action Master Plan

- 1. Continue to **track measurable goals** for the various initiatives to work towards the vision outlined in the strategic plan.
- 2. The **holistic vision including performance and policy protocols** will occur through the ongoing sustainability master plan.
- 3. Recognize our work with partners and technical resources in the community to enhance efficiencies on and off campus.
- 4. Continue to create awareness and specific, targeted educational opportunities through engagement with surrounding communities.
- **5. Create promotional and educational opportunities** to communicate accomplishments and advancements.





## **Opportunity Areas**

#### Fremont and Olive Corridor

 Critical section to continue to enhance connections for all modalities and especially reinforce connections to the Streetcar.

#### Mountain Ave. Corridor

- Potential future Eller expansion as a hub for both the College as well as Campus.
- Streetscape and intersection improvements to enhance movement across Speedway Blvd.

#### Math and Sciences

 Potential important and high-profile site embedded in a dense district of science facilities and on-campus student housing.

#### Cherry and Speedway

- Potential sites for expansion of Engineering and STEM programs.
- Potential identified site for STEAM with performing arts center.

#### Cherry Corridor

 Potential hub for Research and Innovation with identified key sites for redevelopment along the corridor.

#### 6th St. Corridor

 Potential long-term sites provide the opportunity to create significant edge condition resources extending campus capacity.

### Olive and Fremont (Honors to Harvill)

#### Opportunity Areas

- From Honors this is a key threshold to campus and has becomes a corridor of signature programs including Business, Arts and CAPLA and Creative Photography and anchored by Harvill.
- Harvill as a high use cross scheduled facility it is a major hub of activity and intersectionality.
- This is a critical section to continue to enhance connections for all modalities and especially reinforce connections to the Streetcar.
- Build on the Arts Master Plan to create active streetscapes with larger scale civic spaces integrated into future building designs.
- Build/create stronger connection to Honors above Helen and consider long term residential or other programs likely to emerge in this area.
- Use the future Eller expansion as a hub for both the College as well as Campus.



Building

Path

### **Cherry Avenue**

- 1 For Research, Innovation, and long-term capacity.
- Over the past two decades significant development south of Health Sciences has established a complete hub for Research and Innovation and other signature programs such as Poetry.
- The completion of Grand Challenges will establish a new anchor to the south in the center of the Campus near the Mall with Athletics' large venues as part of the backdrop.
- The corridor connecting these two key areas is a mid to long term area of deep opportunity and program synergy.
- Several key land areas are underdeveloped and provide long term highly accessible sites.
- 6 This area already supports multiple signature programs which may need larger facilities over time.
- 7 The position on campus allows for industry and community partnership in and effective and brand strong area.

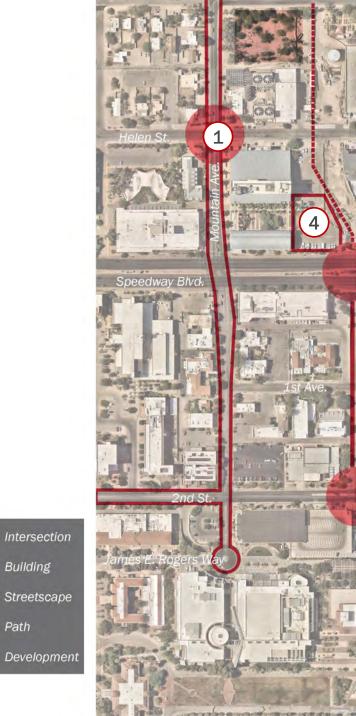




### **Mountain Avenue**

#### **Opportunity Areas**

- Mountain above the north side of campus is major point of access for off campus students, faculty and staff onto Campus and often to parking. Similarly on campus users from Mabel to 2<sup>nd</sup>, add many more on campus users who are accessing the core of campus as well as east to west connections.
- The resulting movement patterns and physical systems need some consideration.
- The current configuration, street scape, traffic light and ped crossing require re scaling and likely simplifying. Bike, Ped and vehicle traffic overlaps and the scale of the space allotments needs to be analyzed. Likely emphasizing pedestrian and bicycle traffic.
- Studies, proposals and recent construction North of Speedway have helped organize the threshold to campus but south of Speedway does not seem to complete supporting the patterns and scale of users.
- Longer term planning or new projects in the area should help simplify or reroute future patterns into the pedestrian focused areas of campus.



Building

### 6<sup>th</sup> Street

- 1 Identifying campus capacity and program expansions sites.
- Much like ENR, these future sites and resulting buildings could function in comprehensive and diverse ways.
- 3 Long-term, these sites provide the opportunity to create significant edge condition resources extending campus capacity.
- The potential program options are open ended and can be seen as flexible or adaptive buildings supporting a spectrum of technical, research or instructional resources.
- Their location on campus also supports partnership and other community engaged opportunities. These sites provide easy access and high visibility.





### **Science & Math**

- 1 Signature Site and Program
- This is an important and high-profile site embedded in a dense district of science facilities and on campus student housing.
- The site is suitable for high profile programs as it anchors the Science Mall and is surrounding by signature programs and facilities.
- The site offers a 360-degree access, and a thoughtful site plan could optimize the yield more effectively than the current tower.
- 5 It can support academic as well as research programs and could be an effective campus hub site.





## **Engineering at Cherry and Speedway**

- (1) This is an important site to optimize programmatically.
- As engineering grows and facilities needs diversify, this site is well positioned to support the College holistically.
- The site can also support other allied programs and become an interdisciplinary hub.
- As a hub with high level of visibility and campus connectivity, this site could support maker spaces student resources, food and other campus amenities.

- 5 Improving the University's presence along Speedway is another benefit.
- 6 This site better realized can create greater density and leveraging the in-place infrastructure.



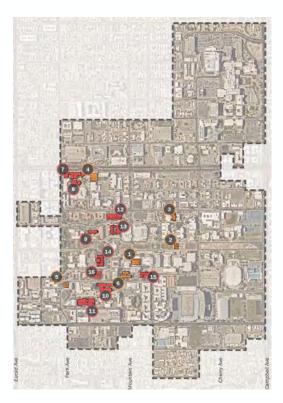




### **Space**

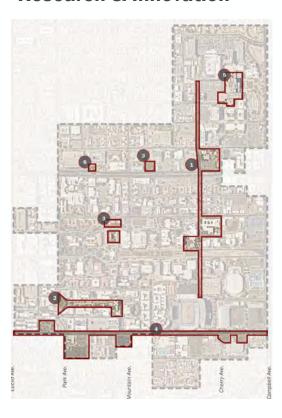
Prioritizing & Sequencing

#### Instructional



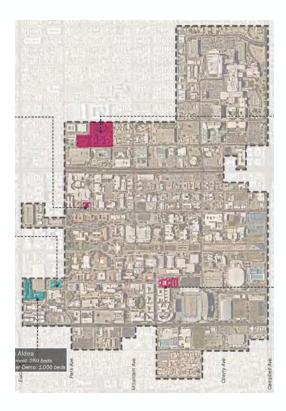
- Correlation between instructional spaces and likely enrollment profiles to determine space typology needs.
- Defining key campus anchors or nodes for instructional hubs.
- Improvement or replacement of key assets for evolving requirements..

#### **Research & Innovation**



- Campus anchors for future research projects and hubs.
- Potential sites for future research buildings including various types of research alliances.

#### Housing

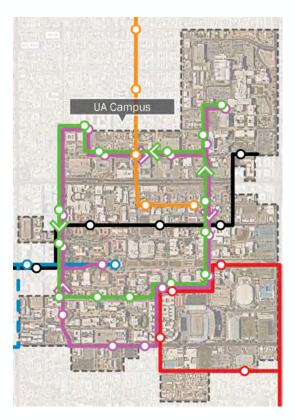


- Adding 800-100 beds in next 5 years
- Adding another 800-100 beds in next 5-10 years
- 10 Year forecast 1600-2000 beds

### **Systems**

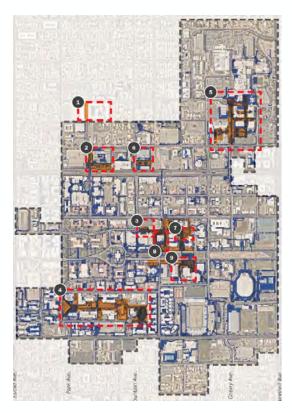
Prioritizing & Sequencing

#### **Transit**

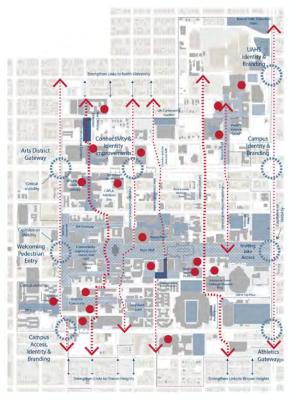


 Reanalyze off-campus routes for better connectivity to destinations and stops along those routes.

#### **Campus Mobility**



- Traffic calming mechanisms along high incident streets.
- Intersection safety improvements along campus edges.
- Improved campus safety within the internal campus streets.



- Enhance campus gateways with branding and identity.
- Increase opportunities for active outdoor use of space in various formats.
  - Improve the character of the North-South pedestrian and bicycle corridors.

## **Big Takeaways**

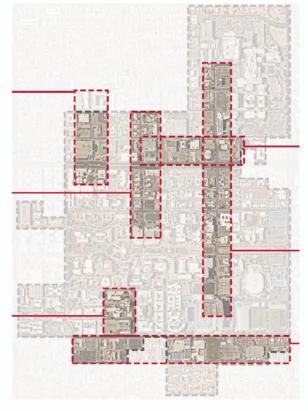
Prioritizing & Sequencing

#### **Campus Open Space**



 Create overlapping campus zones with functional hubs across the campus.

#### **Opportunity Areas**



 Key opportunity areas for campus development along with key issues that need to be addressed within the areas.

### **Composite Summary Recommendations**

Prioritizing & Sequencing

### **Space**

#### Instructional



Housing



Research & Innovation



Admin/Support



### **Systems**

Transit & Transportation Mobility



**Campus Infrastructure** 



**Green Space Network** 



**Sustainability** 



# Physical Planning

**Opportunity Sites** 

