

ARKANSAS TECH UNIVERSITY MASTER PLAN APPENDIX

March, 2018



PERKINS+WILL

- 1: Workshop Summaries
- 2: Survey Results
- 3: Space Utilization
- 4: Housing Facility Needs
- 5: Transportation, Mobility, and Parking Needs
- 6: Technology Infrastructure Assessment
- 7: Utilities Summary
- 8: Cost Estimates

APPENDIX

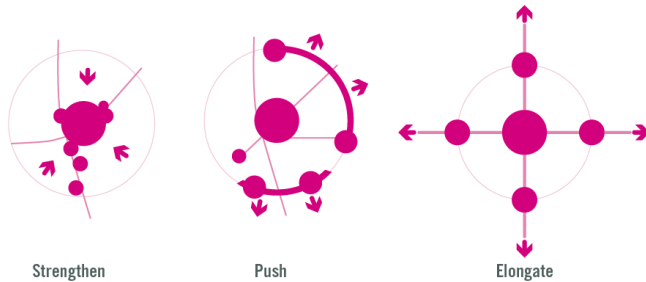
WORKSHOP SUMMARIES

A

APPENDIX

CAMPUS CONCEPT WORKSHOP

Discovery and discussion of concept scenarios to help understand the potential design direction for the campus. In advance of the workshop the design team created three different approaches to the future of the campus which were then used to discuss and challenge ideas with the Advisory Group. These three concepts are summarized as:



Strengthen Campus Core

This concept sought to pull future uses into the core of the campus to keep the compact nature of the existing university.

Push to Campus Edges

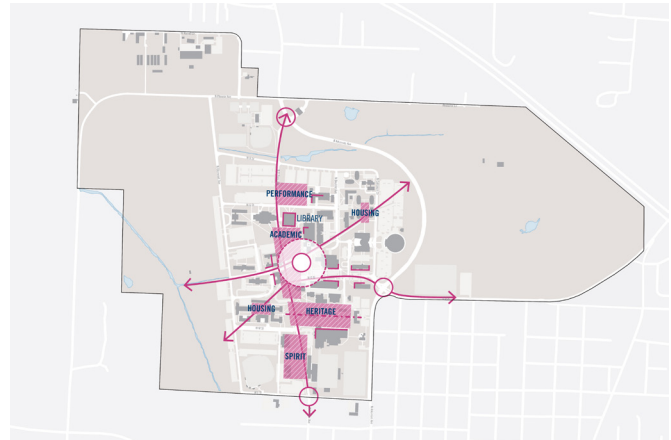
This concept design identified and explored the potential to address the campus edges more deliberately to create potentially stronger relationships with the existing urban area and uses within Russellville.

Elongate beyond campus edges

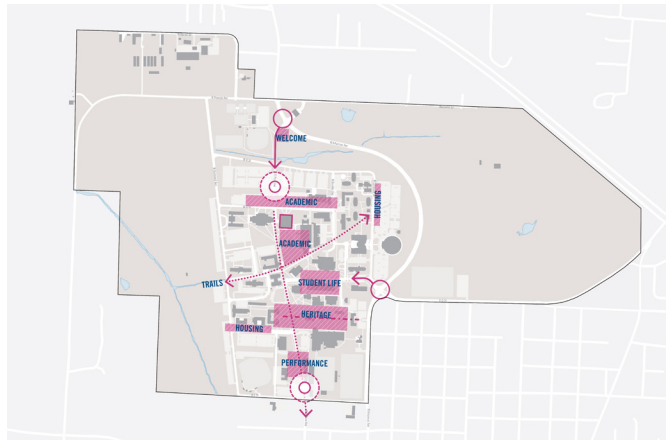
This concept design suggested a more expansive approach to the campus taking advantage of the land which the university currently uses as agricultural programs.

Each concept design was discussed and diagrammed in table top sessions by dividing the Advisory Group into four tables. The whole group then returned together to discuss their opinions and findings through these sessions.

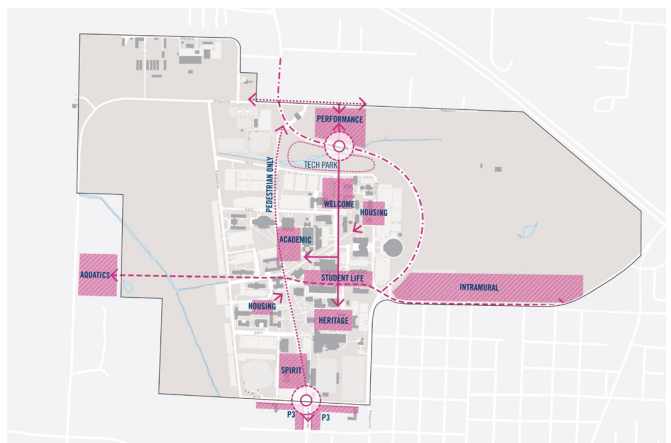
At the end of the workshop, the design ideas were collected by the consultant team for use in developing the preferred concept. The group was finally asked which concept stood out as a preference. The consensus from the group was that consolidating and strengthening the existing compact nature of the campus was beneficial and should guide most the approach, with the addition of one component of the push concept to create stronger links to the El Paso district to the south, and to utilize some of the land to the east of campus for future intramural and athletics expansion.



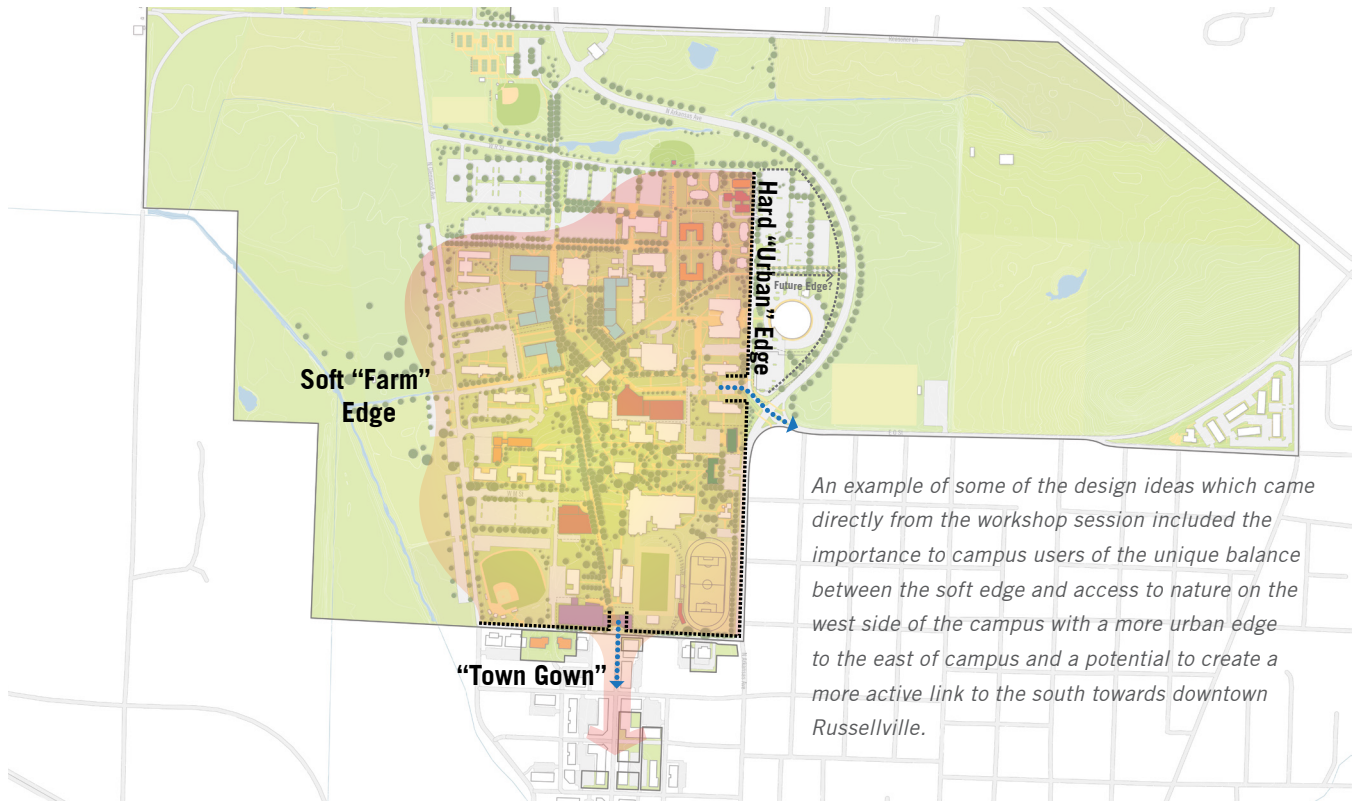
Strengthen Campus Core



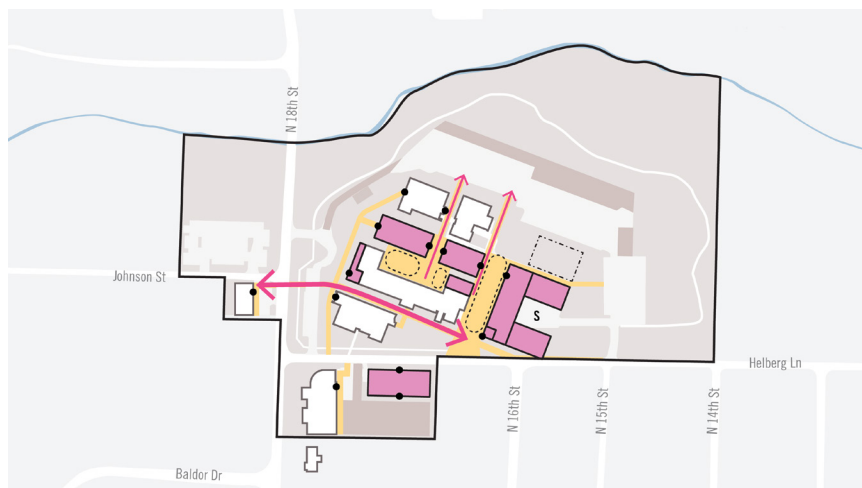
Push to Campus Edges



Elongate beyond campus edges



Discussion and review session of the campus concepts



Given its relatively modest size, the Ozark Campus was not subject to the same number of concept options for growth. Instead the design principles were used to create potential development opportunity locations and these were then presented to the Ozark Campus user group and asked for their input and feedback on how these development footprints may meet their current and future operational needs.

APPENDIX

WORKSHOP SUMMARIES

Big Ideas

During the Big Ideas Workshop the Advisory Group discussed three substantially different options for the potential future of the Arkansas Tech campus. They looked at big picture ideas for positioning focus areas of academic life, student life, athletics, and community uses all within the context of either strengthening the existing core, pushing out from the core to provide improved edge conditions, or elongating the campus making use of previously undeveloped land currently use for grazing or purchased outside of the campus main ownership.

The responses to these three scenarios when discussed in the round with the whole Advisory Group was an emerging preference for a compact campus that strengthened the existing qualities, but that also included strategic pushing of a limited number of functions either to the edge of campus or beyond to bridge gaps with the neighboring community.

This hybrid scenario became the basis of the follow up consultant team workshop. At this workshop all of the comments expressed through the analysis and big ideas phase were reviewed and combined to generate more targeted, but still big picture, moves for the campus. These were then vetted and reviewed in a full team web-conference that critically evaluated the scenarios for pros/cons, major constraints, ability to meet design principles, and resiliency impacts.

As these criteria for evaluation evolved through the design process and through interaction with the campus stakeholders, we also undertook a process of mapping feedback to the identified design principles to flesh out their intent.



RESILIENCY WORKSHOPS

Social, Environmental, Economic Matrix Summary

The following issues were identified and discussed in the Big Ideas Workshop Resiliency Session. These are complex inter-related issues which reach far beyond the master plan but which awareness of allow for synergies to be formed between the physical responses of the master plan and the social, economic, and environmental aspects of resiliency.

Risk	Social	Economic	Environmental
Storm Preparedness	Lack of confidence, support for trauma/counseling, loss of life/injury, decreased enrollment	Loss of facilities, loss of availability of services, preparedness costs, local economy loss of available goods/services	Water supply/quality, destruction of habitat, livestock loss (Ag. Program), erosion on campus
Facility Failure	Loss of programming/meeting space, loss of well-loved spaces/tradition, community engagement, impacts to freshman recruiting, accessibility impacts, morale of staff and students, institutional stability/brand	Aging infrastructure is more costly to maintain, economic cost of off-line facilities (i.e. athletic facilities), loss of key operations (data/tech facilities), cost of clean-up/repair, state funding drop-off (new construction, deferred maintenance), debt capacity on auxiliaries, student affordability, fiscally responsible facilities planning (compromise needs / lost vision)	Inefficient use of materials/energy, contamination from broken infrastructure (gas lines, sewage) or aged hazardous materials (asbestos), not energy efficient, not meeting changing attitudes to resource efficiency, conservation of water (rainwater harvest, condensate capture)
Storm Water Management	Perception vs. reality (it does flood), pedestrian circulation and protection of high traffic areas, increase amenities, vulnerable living and gathering spaces, insurance claims for personal property	Cost of implementation, loss of facilities/services, cost of clean-up, rebuilding costs, parking and transportation impacts	Impervious cover impacts versus more permeable surfaces, comprehensive planning versus individual projects, water quality opportunity, erosion, habitat disruption and destruction.
Changing Demographics / Civil Unrest	Job loss, homelessness, increased incidents of crime, net population decrease, decrease in commercial offerings, undocumented students, multi-cultural focus shift/bilingualism	Job loss, housing market drop, increased poverty, local economy tax base erosion, diversification of tax base, first generation students, reliance on student loans,	Shut down of public services (waste management), different attitudes towards environment, population increase, increase in manufacturing/heavy industry potential pollutants
Limited transportation	Perception/ education/ culture, shifting conversation – mobility, walkability to healthy food options, peer pressure/ encouragement, wayfinding	Affordability, lack of alternatives/choices, investment in parking/roadway infrastructure – community/ city/ university, cost of alternatives	Reduce emissions/ carbon, creating more pervious surfaces, improved health outcomes

APPENDIX

CAMPUS TASK FORCE DISCUSSIONS

The following pages document discussion with the task force groups at the start of the master planning process and accounts of how the campus is currently performing which need to be addressed by the master plan.

CAMPUS COMMUNITY + HERITAGE

Campus Heritage is a core part of traditions and community for both existing students and alumni. It requires a careful balance of the preservation and protection of those elements of a campus which have heritage or campus community significance. It should not, however, lead to the “museumification” of the campus or persistence with aging infrastructure in need of comprehensive renovation. One of the greatest challenges is how to make heritage buildings accessible with contemporary facilities.

Observed needs:

- Significant history of campus could be recognized further.
- New 'sacred spaces' and traditions emerging for current students and recent alumni.

TRANSPORTATION AND MOBILITY

Observed needs:

- O Street & Arkansas intersection cuts off east campus.
- Poor condition of sidewalks.
- ADA access issues to some buildings.
- International students rely on shuttle service.
- Zip Car have approached the campus.
- Gateways and wayfinding are not well defined
- Heavy reliance on driving; no incentive not to
- Infrequent yet heavy use of limited transit
- Little awareness of transit & bike options
- Walking conflicts with cars in heart of campus & at prime gateway of O Street & Arkansas

SUSTAINABLE CAMPUS

Observed needs:

- Recycling program in place fluctuates based on student enthusiasm.
- Food bank and pantry proved highly successful.
- Hydroponic food growth and composting have been discussed.
- Campus flooding is not strategically addressed.
- LEED certification has been an aspiration but is not pursued on campus due to cost.
- Deferred maintenance is the only focus for improving energy efficiency.
- No purple pipe or reclaimed water irrigation.

TECHNOLOGY INFRASTRUCTURE

Observed needs:

- Last major upgrade was 7 years ago.
- Move toward VOIP included infrastructure to support future system growth.
- Opportunity for computer labs with 24hr access.
- Ozark campus has no redundancy in internet provision.
- Data center is well positioned on ARE-ON, 98% virtual, and has generator back up.

SAFETY + SECURITY

Observed needs:

- Significant improvement in safety, security, and emergency management practices on campus in last 5 years.
- Campus police facility is inhibiting effectiveness.
- Recent construction has under-provided shelter in place provision.
- Progress in implementation of campus security features: CCTV & swipe-cards.

FACILITY NEEDS

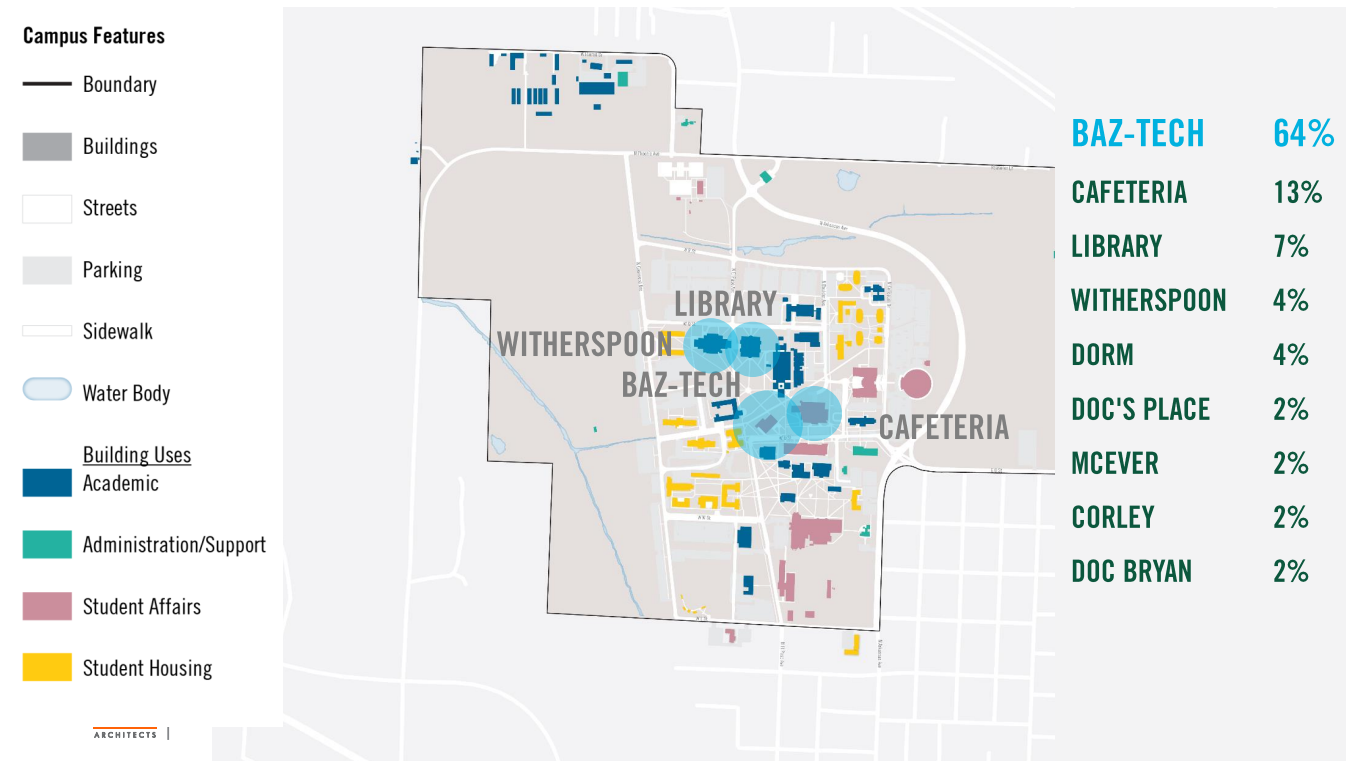
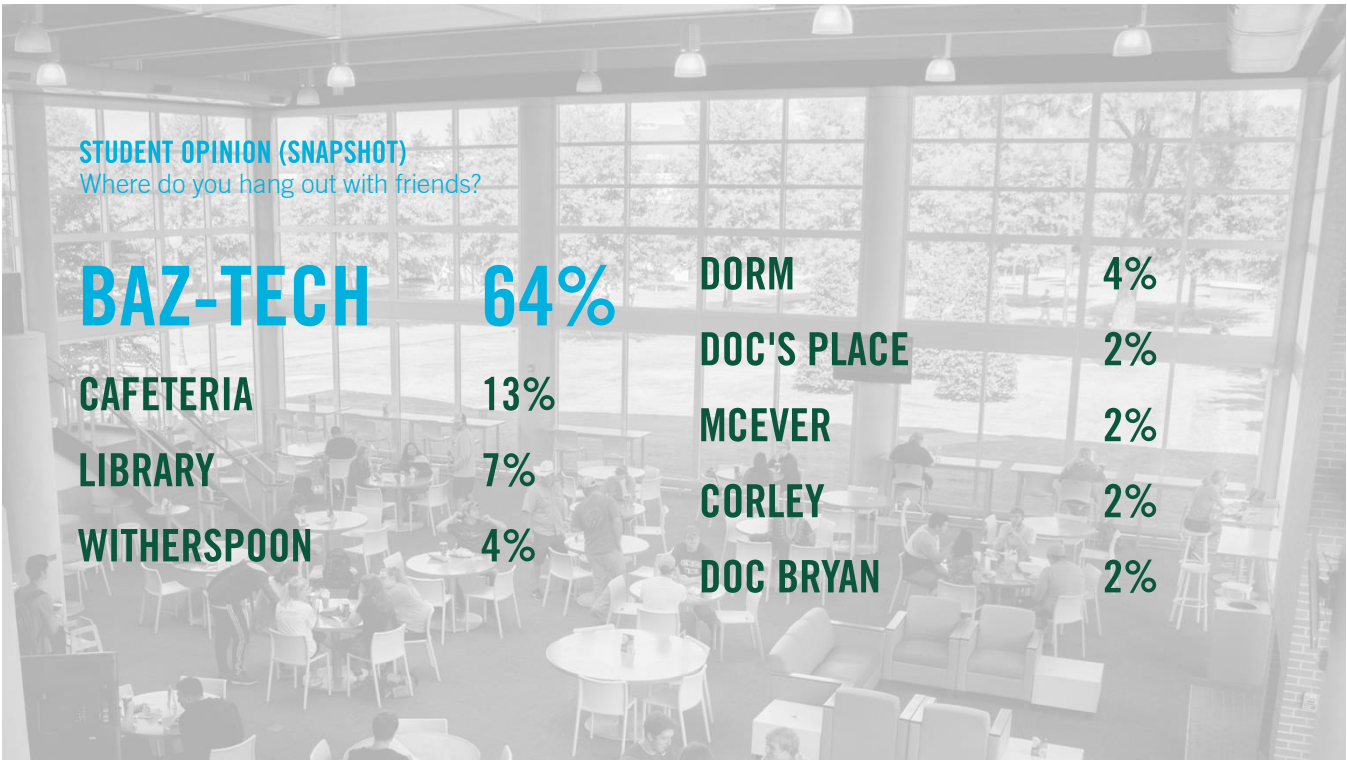
Observed needs:

- Student housing is an urgent and significant need.
- Student union and campus rec. center opportunity.
- Performing arts spaces are underperforming.
- Closets and conference rooms have become offices.
- Graduate labs to meet identified market demand.
- Athletics expansion for soccer & track.

SURVEY SUMMARIES

B

STUDENT SURVEY RESULTS



STUDENT OPINION (SNAPSHOT)

Facilities
most in need
of upgrade:

WITHERSPOON
(32% ON CAMPUS)
(17% OFF CAMPUS)

CORLEY
(7%)

MCEVER
(5%)

DOC BRYAN
(5%)

CAFETERIA
(3%)

HULL
(3%)

**“YOU DON’T
UNDERSTAND TECH,
UNLESS YOU WENT TO
TECH”**

Campus Features

— Boundary

■ Buildings

□ Streets

■ Parking

□ Sidewalk

○ Water Body

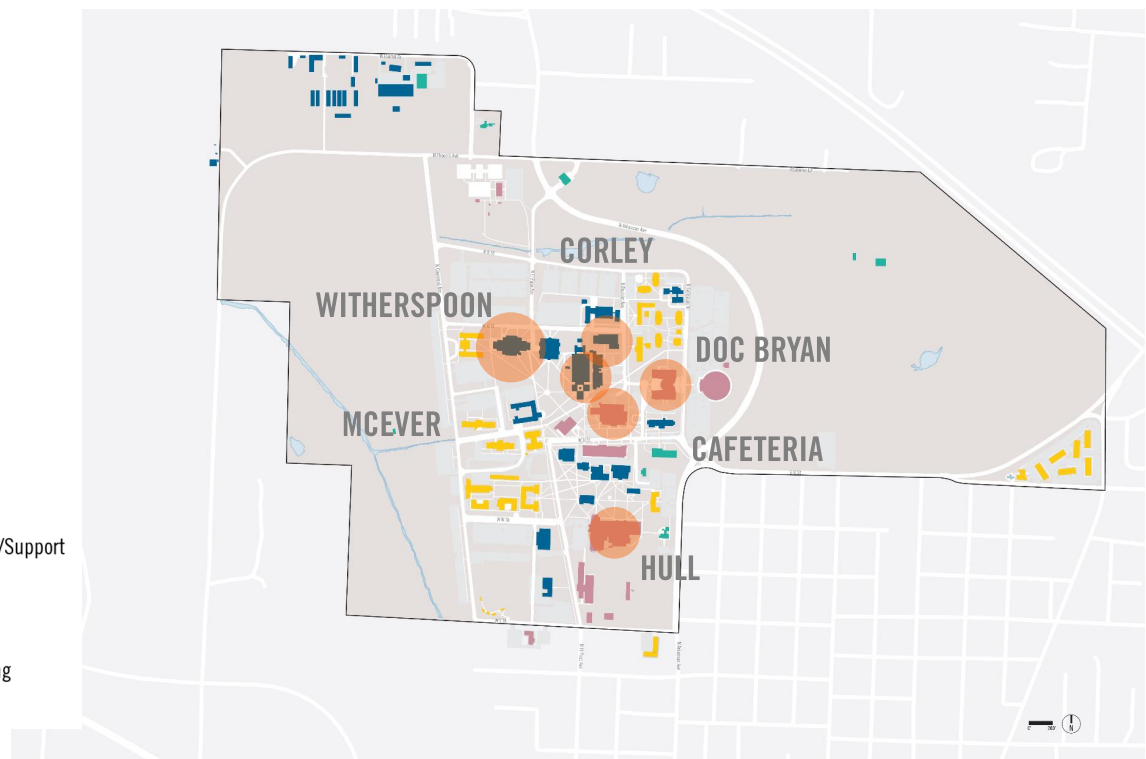
Building Uses

■ Academic

■ Administration/Support

■ Student Affairs

■ Student Housing



STUDENT OPINION (SNAPSHOT)

What would help recruit new students?

A Recreation Facility

- Indoor swimming pool
- Rock climbing wall
- Bike trails
- Frisbee golf

New Housing

- New Dorms
- Greek Row
- Fraternity Housing

STANLEY PERKINS
WILLIAMS ARCHITECTS

New fine arts and humanities

- New Theatre

Student Center/Student Union

- A place other than BazTech
- More coffee shops
- More food options
- A convenience store

24 hour study facility

- 24/7 Computer Lab

Agriculture Building

- Green house facility
- Community gardens/programs

Multi-level parking garage

Better Wheelchair access

New Science Building

Daycare/preschool

Nursing Department Facility

A Lapidary School

Campus Features

— Boundary

Streets

Parking

Building Age

1900-1920

1921-1940

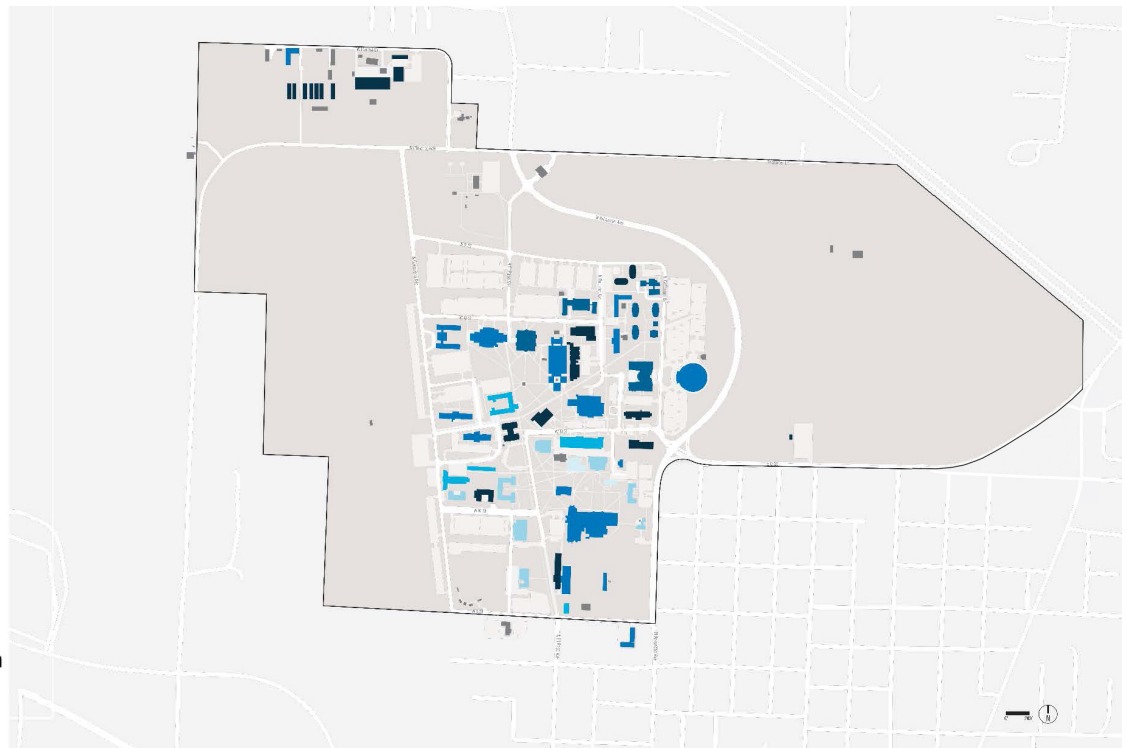
1941-1960

1961-1980

1981-2000

2001-2016

No age information



STUDENT OPINION (SNAPSHOT)

Fitness

On Campus Responses:

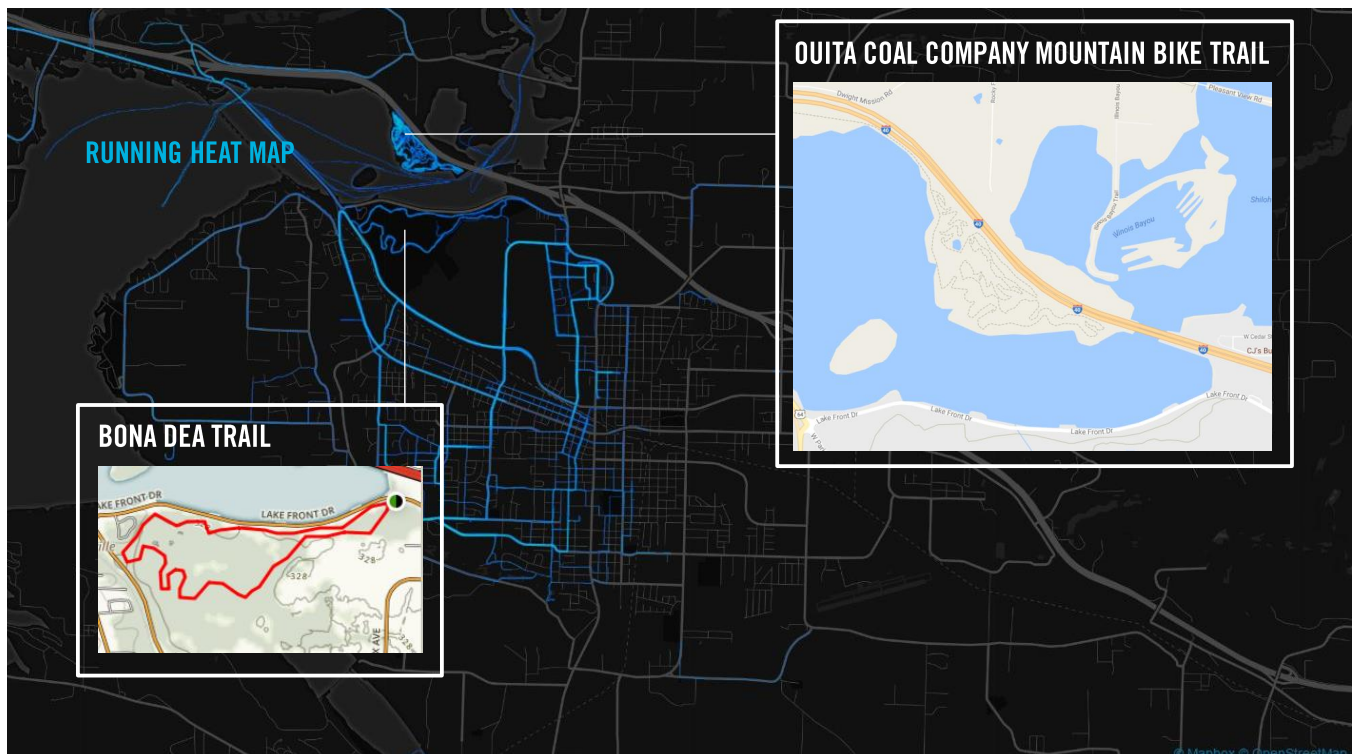
1. TechFit
2. Planet Fitness
3. Rec Fields/other outdoor space on campus
4. Walking trails off campus (Bona Dea)
5. In my room

“PLANET FITNESS. IT COSTS A LOT MORE THAN TECH-FIT... BUT TECH-FIT IS SO CROWDED ALL THE TIME THAT IT’S IMPOSSIBLE TO WORK OUT”

NOWHERE :(

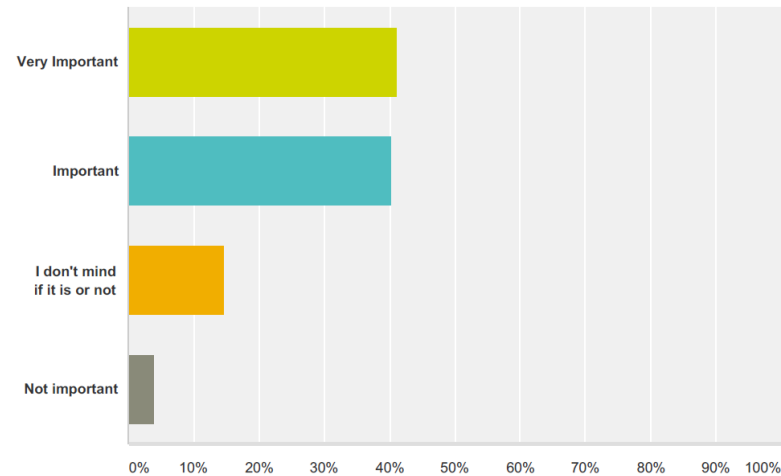
FOLEY
STANLEY
WILCOX
ARCHITECTS

PERKINS
+ WILCOX
ARCHITECTS



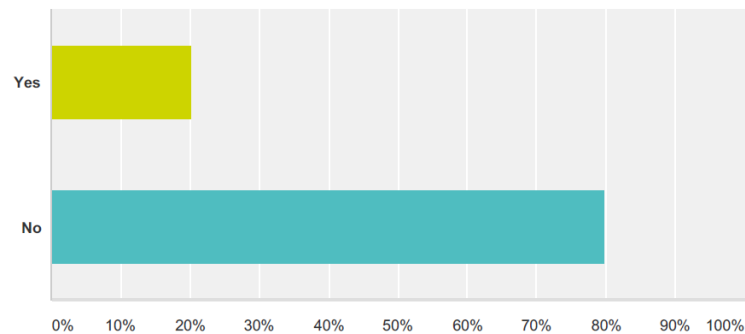
Q5 How important is it to you that Tech has an environmentally sustainable campus?

Answered: 226 Skipped: 29



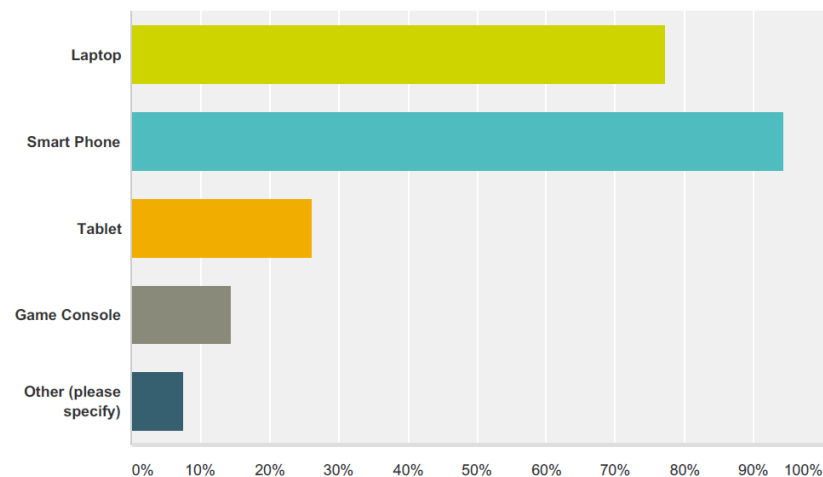
Q6 Have you participated in any sustainable 'green' enterprises on campus?

Answered: 227 Skipped: 28



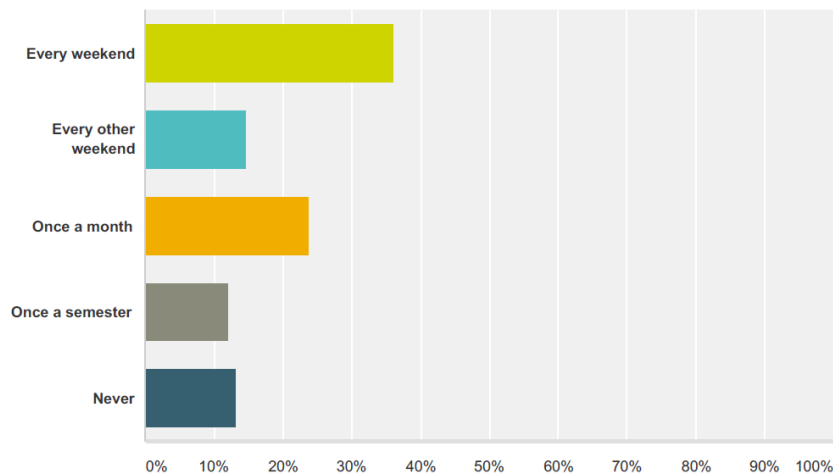
Q8 What devices do you regularly bring to campus that use wifi?

Answered: 215 Skipped: 40



Q9 How often during the semester do you go home for the weekend?

Answered: 205 Skipped: 50



WHERE DO YOU GO IN RUSSELLVILLE?

+90, +20, +10, +5



"I find myself going to the old bank that just opened recently and to tropical smoothie* a lot. It's seen a lot of businesses flourishing in Russellville. It means the city is growing."

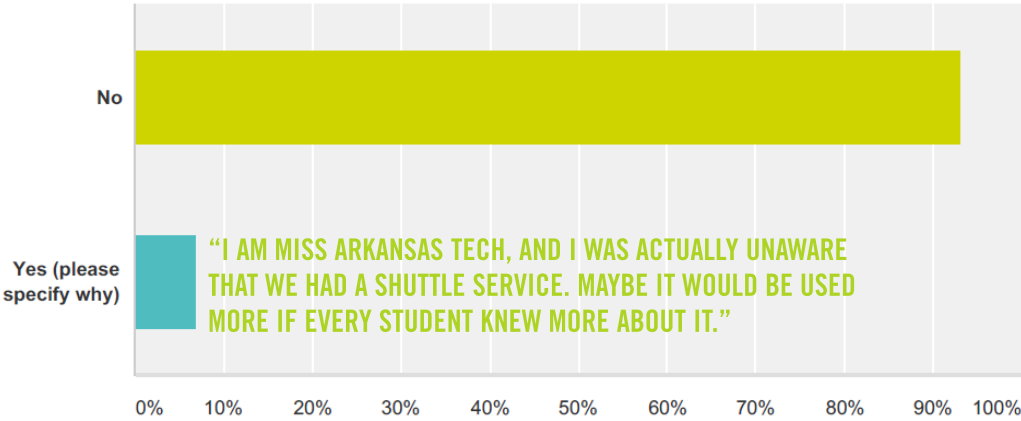
POLK PERKINS
STANLEY
WILCOX ARCHITECTS

MIDTOWN COFFEE
DOG EAR BOOKS
MCDONALD'S
HOBBY LOBBY
LOWE'S
UMAMIS
DOLLAR TREE
THE WALL
JC PENNEYS
ROSS
CHURCH
GYM (NON-SPECIFIC)
WALKING
STAPLES
QUIZNOS
WHATTABURGER
STEAK N SHAKE
DOLLAR GENERAL
TJMAXX
CHILLIS
BOOKWHEEL
BRICK OVEN PIZZA COMPANY
OLD BANK BAR AND GRILL
BOOK STORE (NON-SPECIFIC)
ARKAVALLEY
TACO JOHNS
SERENITY YOGA
B STREET BOOKS
UEC THEATRES
POPE COUNTY LIBRARY

54

Q11 Do you use the international student shuttle service – If so, why?

Answered: 216 Skipped: 39



51

MORE COMMENTS ON THE SHUTTLE SERVICE:

“I JUST NOW HEARD OF IT!!!”

“DIDN'T KNOW THIS EXISTED”

“IT HELPS THE ENVIRONMENT BY NOT CAUSING AS MUCH POLLUTION AND IT HELPS ME SAVE MONEY”

“I DON'T ANYMORE, BUT I DID LAST YEAR FOR A WHOLE SEMESTER WHICH HELPED SO MUCH. MR. DALE IS SO KIND.”

THAT'S PROVIDED HERE??? I DIDN'T KNOW THAT...

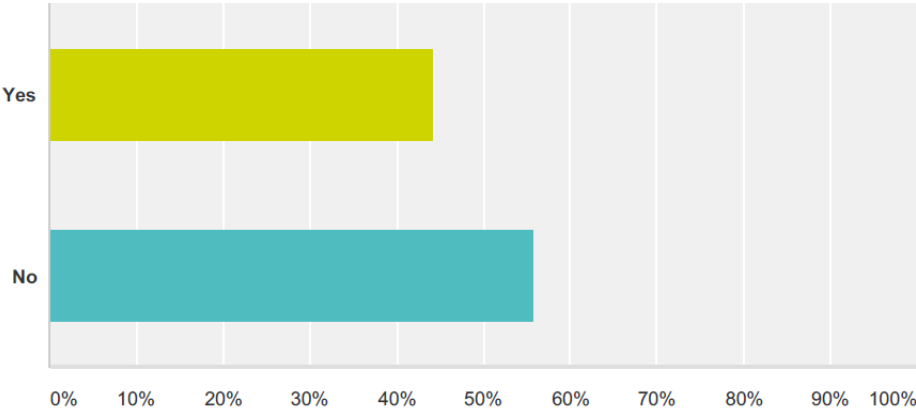
“I THINK THIS IS A REALLY GREAT SERVICE AND SHOULD BE ADVERTISED MORE”

“I DIDN'T KNOW THIS WAS AVAILABLE TO STUDENTS”

52

Q12 If the university offered a new fixed route shuttle service would you ride?

Answered: 208 Skipped: 47

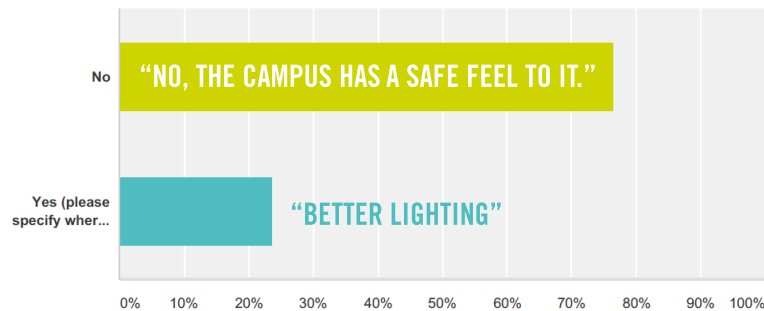


53

FEELING OF CAMPUS SAFETY

Q13 Are there locations on campus which feel unsafe?

Answered: 208 Skipped: 47



SHOULDER
WILLIAMS
ARCHITECTS

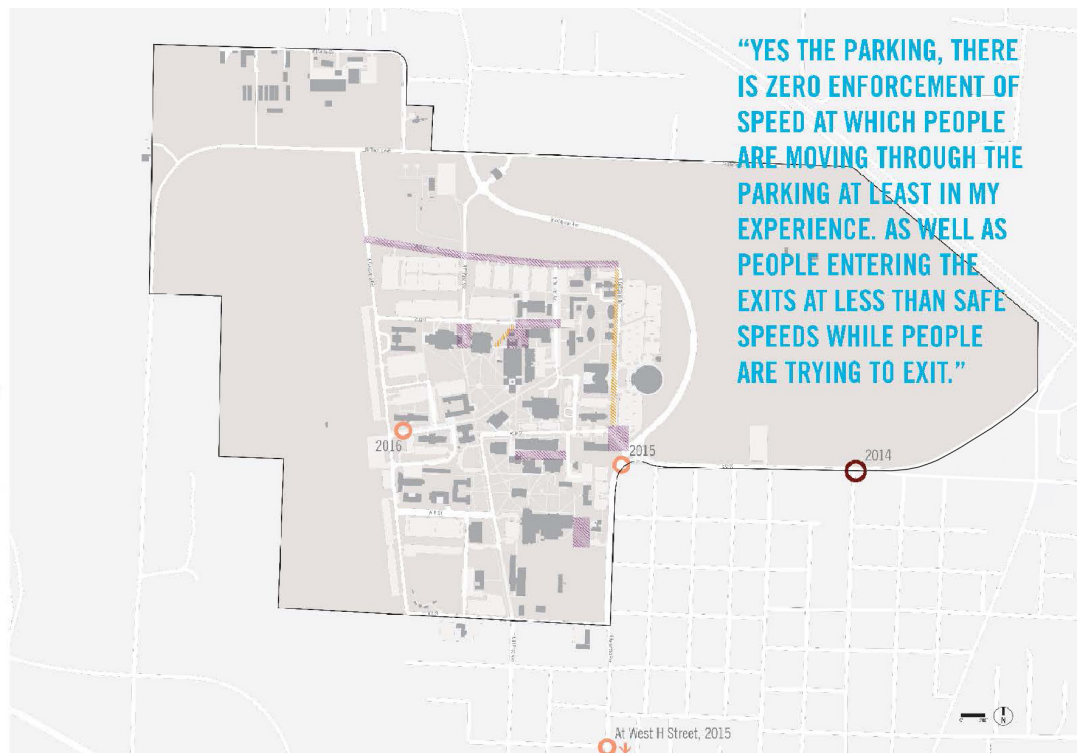
"OUR SIDEWALKS NEED A LOT OF WORK. IT'S EASY TO TRIP AND FALL ON THEM"

"THERE ARE AREAS ON CAMPUS THAT ARE NOT WELL LIT. FOR EXAMPLE, CARAWAY GIRLS MUST PARK IN "OVERFLOW PARKING" AT THE ALUMNI HOUSE IF THEIR LOT IS FULL. THE WALK FROM THE ALUMNI LOT TO CARAWAY IS NOT WELL LIT"

"BETWEEN WITHERSPOON AND THE LIBRARY IT IS SUPER DARK THERE; JUST PUT UP A LIGHT"

Campus Safety

- Boundary
- Buildings
- Streets
- Serious Crash
- Minor Crash
- ▨ Campus Lighting Issues
- ▨ Missing Sidewalk



OZARK CAMPUS

STUDENT OPINION (SNAPSHOT)

Where do you study?

Living On Campus:

Library 51%

Dorm 32%

Other 17%

“IF IT IS NICE OUTSIDE I STUDY IN A HAMMOCK OR ON A BLANKET.”

“MIDTOWN COFFEE OFF CAMPUS”

Living Off Campus:

Library 51%

BazTech 3%

Witherspoon 3%

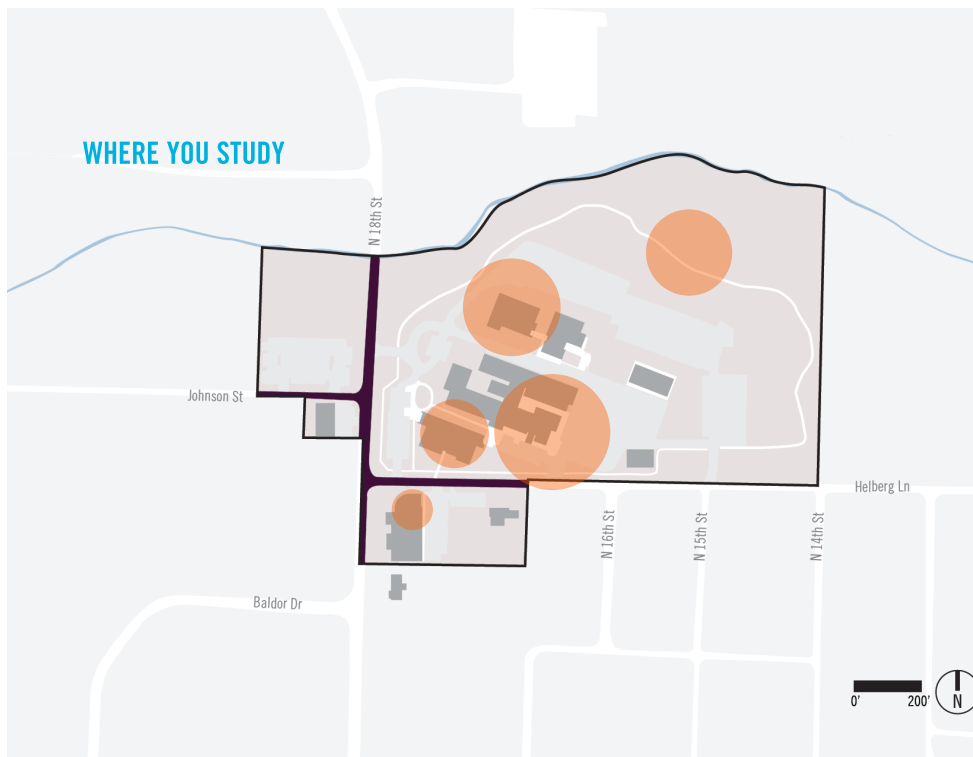
At Home 2%

Empty class 2%

N/A & Other 38%

“THERE ARE PLENTY OF OPTIONS TO STUDY ALONE, IN PAIRS, OR IN GROUPS. THE VERSATILITY IS NICE”

“IN MY CAR”

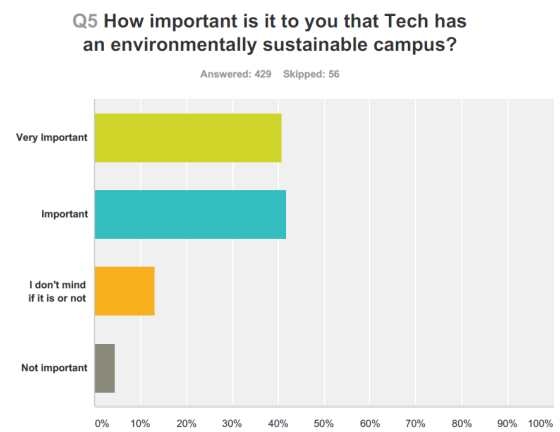
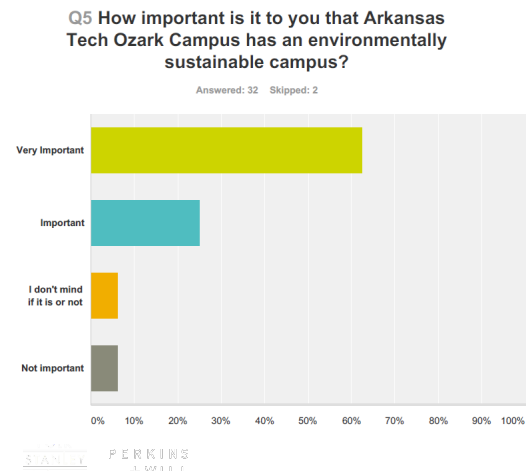


STUDENT UNION
HEALTH SCIENCES
OUTSIDE
STUDENT SERVICES
COLLEGIATE CENTER

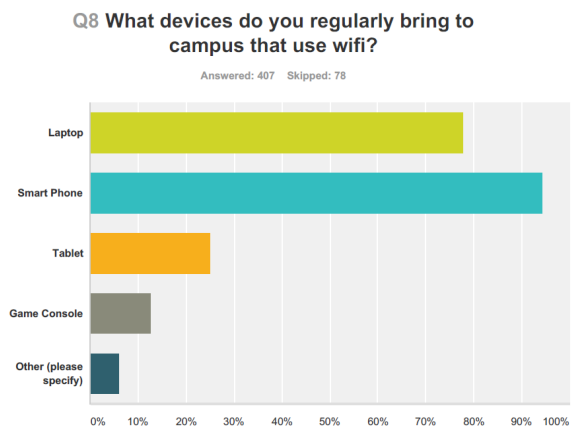
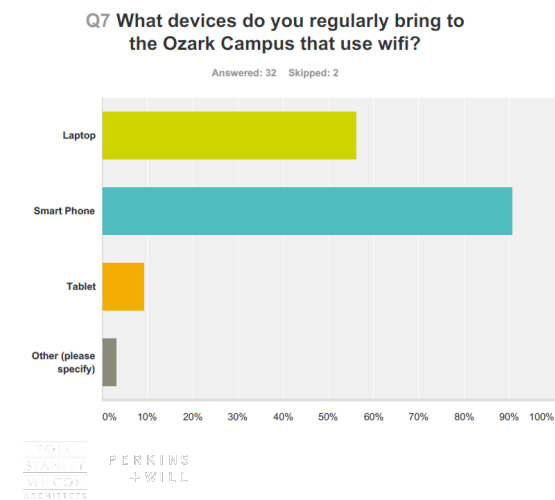
OTHER:

Home
Computer Lab
Empty Classroom

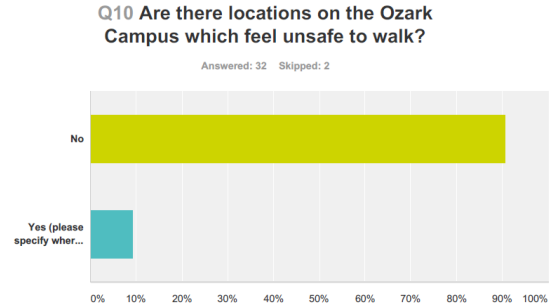
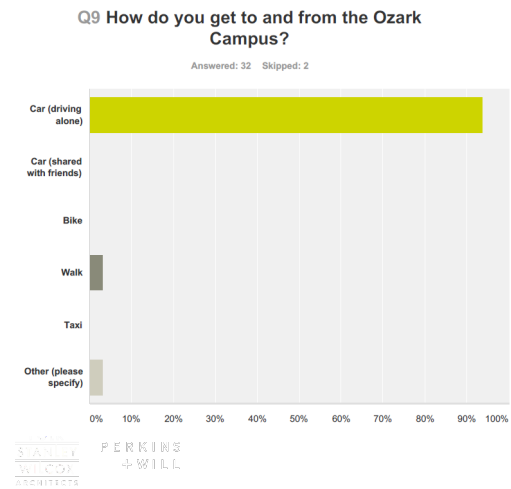
SUSTAINABILITY OZARK AND RUSSELLVILLE



DEVICE USE OZARK AND RUSSELLVILLE



MOBILITY AND SAFETY

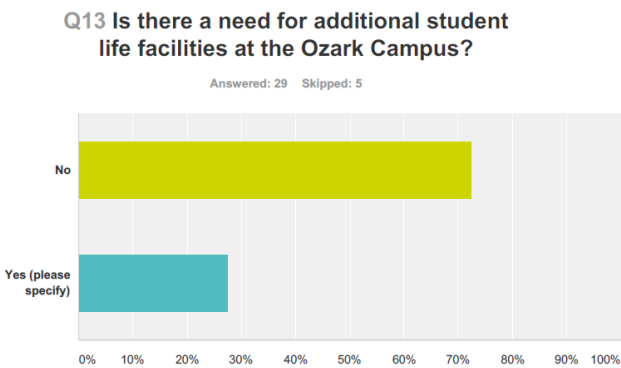


Crossing the street on Helberg Lane

Back entrance of the Collegiate Building - very little lighting

Between the Health and Wellness and Welding buildings - lack of light

- More student events and combine with the Russellville campus.
- Ability to interact with other programs
- Intramural Sports Activities
- Hosting workshops for students such as resume bulding or interviewing skills.
- It seems like the Ozark Campus gets left out on a lot of things.
- Events. More involving clubs



STUDENT OPINION (SNAPSHOT)

What would help recruit new students at Ozark Campus

More areas to meet with other students

Student Union/Library

Daycare for parents

Science laboratory

The Health and wellness center

Computer Science IT/Networking facility

More courses for first responders

Bigger café / coffee shop

Nicer classrooms

Campus Housing,
Dorms/student apartments

Sports/ field complex soccer field baseball field and such

FOY
STANLEY
WILL
ARCHITECTS

PERKINS
+ WILL**STUDENT OPINION (SNAPSHOT)**

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FOY
STANLEY
WILL
ARCHITECTS

PERKINS
+ WILL

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Agriculture Building

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Multi-level parking garage

Better Wheelchair access

New Science Building

Daycare/preschool

Nursing Department Facility

A Lapidary School

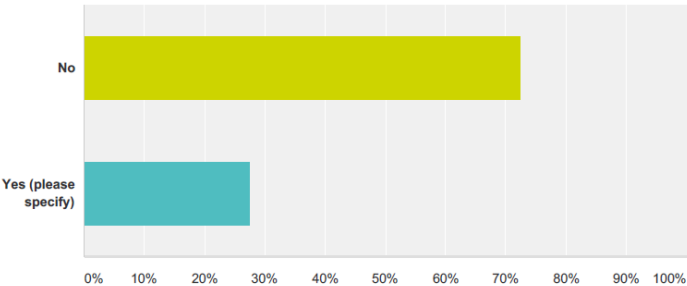
STUDENT LIFE

- More student events and combine with the Russellville campus.
- Ability to interact with other programs
- Intramural Sports Activities
- Hosting workshops for students such as resume bulding or interviewing skills.
- It seems like the Ozark Campus gets left out on a lot of things.
- Events, More involving clubs

PERKINS
SANDY WILCOX
ARCHITECTS

Q13 Is there a need for additional student life facilities at the Ozark Campus?

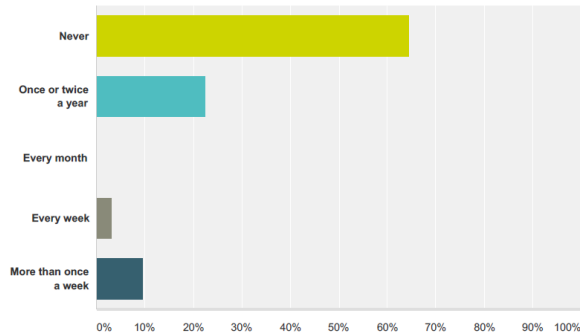
Answered: 29 Skipped: 5



VISITING RUSSELLVILLE

Q14 How often do you visit the Russellville Campus?

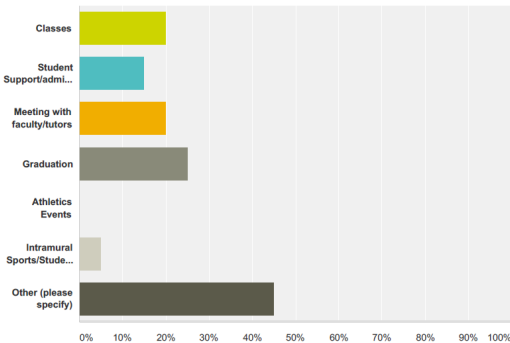
Answered: 31 Skipped: 3



PERKINS
SANDY WILCOX
ARCHITECTS

Q15 Why do you visit to the Russellville Campus?

Answered: 29 Skipped: 14

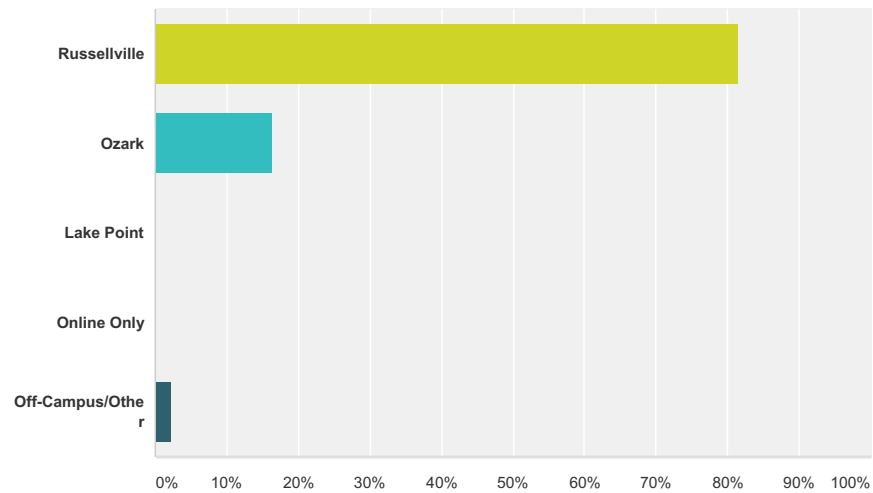


FACULTY SURVEY

ARKANSAS TECH CAMPUS MASTER PLAN FACULTY AND STAFF SURVEY

Q1 On which campus do you predominately work?

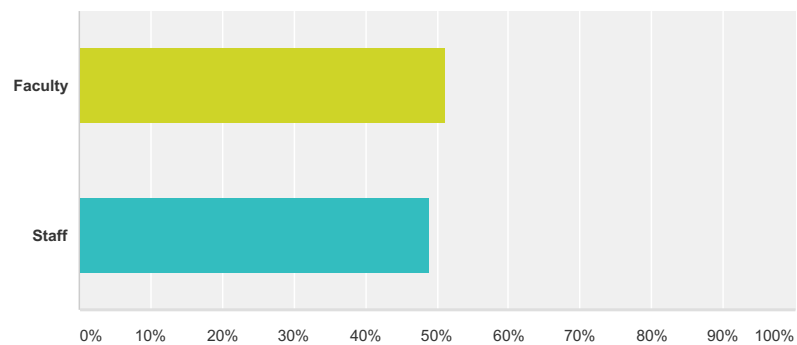
Answered: 43 Skipped: 0



ARKANSAS TECH CAMPUS MASTER PLAN FACULTY AND STAFF SURVEY

Q2 Are you a faculty member or staff?

Answered: 43 Skipped: 0

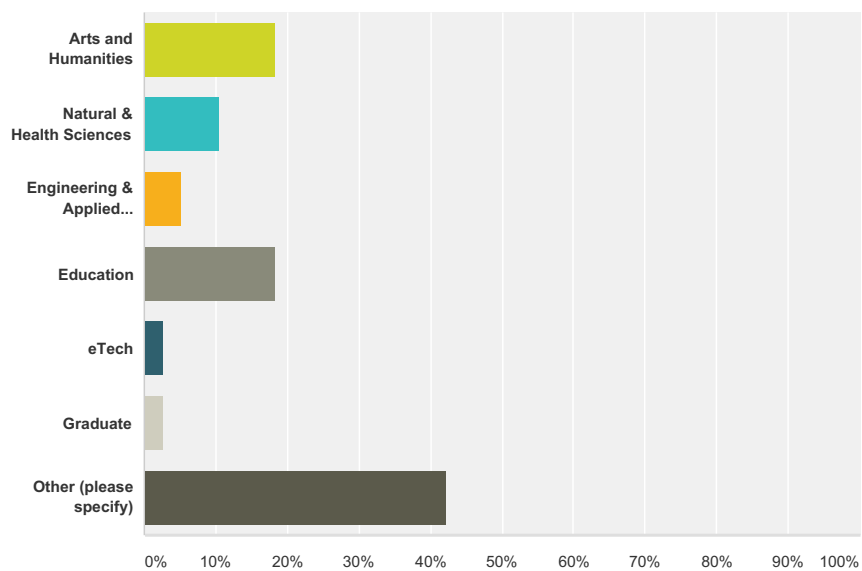


Answer Choices	Responses
Faculty	51.16% 22
Staff	48.84% 21
Total	43

ARKANSAS TECH CAMPUS MASTER PLAN FACULTY AND STAFF SURVEY

Q3 In which College do you teach/work?

Answered: 38 Skipped: 5



#	Other (please specify)	Date
1	Staff	4/10/2017 1:34 PM
2	Business	4/10/2017 1:34 PM
3	Office of Information Systems	4/10/2017 1:32 PM
4	Business	4/10/2017 1:32 PM
5	Staff Member	4/10/2017 1:25 PM
6	.	4/10/2017 1:25 PM
7	Admissions	4/10/2017 1:24 PM
8	Staff Member	4/10/2017 1:24 PM
9	Health Sciences Wellness	4/10/2017 1:24 PM
10	Office of Information Systems	4/10/2017 1:23 PM
11	Controllers Office	4/10/2017 1:23 PM
12	Administration	4/10/2017 1:22 PM
13	library	4/10/2017 1:22 PM
14	Office of Information Systems	4/10/2017 1:20 PM
15	Advancement	4/10/2017 1:20 PM
16	Not in a college	4/6/2017 6:26 PM

ARKANSAS TECH CAMPUS MASTER PLAN FACULTY AND STAFF SURVEY

Q4 In your opinion, please rate the following space types in terms of future need

Answered: 27 Skipped: 16

	Need More	Adequate	Need Less	Total
Classrooms	69.23% 18	30.77% 8	0.00% 0	26
Class Labs	69.23% 18	30.77% 8	0.00% 0	26
Library Stacks	30.77% 8	65.38% 17	3.85% 1	26
Athletics Facilities	16.00% 4	72.00% 18	12.00% 3	25
Recreation/Exercise	72.00% 18	24.00% 6	4.00% 1	25
Student Study - Informal Gathering	51.85% 14	48.15% 13	0.00% 0	27
Student Study - Group Meeting Rooms	61.54% 16	38.46% 10	0.00% 0	26
Open Labs (e.g. computer labs or testing centers)	65.38% 17	34.62% 9	0.00% 0	26
Food Service	26.92% 7	73.08% 19	0.00% 0	26
Merchandise	15.38% 4	76.92% 20	7.69% 2	26
Student Organization Meeting Space	37.04% 10	59.26% 16	3.70% 1	27
Student Lounge	40.74% 11	55.56% 15	3.70% 1	27
Academic Offices	61.54% 16	38.46% 10	0.00% 0	26
Conference Rooms	48.15% 13	51.85% 14	0.00% 0	27
Faculty or Staff Lounge	51.85% 14	40.74% 11	7.41% 2	27
Print/Copy Spaces	29.17% 7	66.67% 16	4.17% 1	24
Instructional Technology Spaces (e.g. lecture recording)	42.31% 11	53.85% 14	3.85% 1	26
Non-Academic Offices	34.62% 9	53.85% 14	11.54% 3	26
Maintenance Shop	26.92% 7	69.23% 18	3.85% 1	26
Central Storage	38.46% 10	57.69% 15	3.85% 1	26
Data/IT/Telecom	42.31% 11	57.69% 15	0.00% 0	26

#	Other (please specify)	Date
	There are no responses.	

ARKANSAS TECH CAMPUS MASTER PLAN FACULTY AND STAFF SURVEY

Q5 From your perspective, what type of functional space (for faculty or staff) would be beneficial to the university that the university does not currently have? Please limit response to 100 words or less.

Answered: 19 Skipped: 24

#	Responses	Date
1	Office space for adjuncts	4/10/2017 1:34 PM
2	Reserved parking - People will pay for a reserved spot or add a parking garage with reserved spots available for purchase each year.	4/10/2017 1:31 PM
3	University supported free daycare	4/10/2017 1:31 PM
4	Our department doesn't even have offices for everyone so that would be a great place to start. A place where department members can be close to each other and collaborate with each other and collaborately help each other's students. With hall space for seating and working to entice age students to come by and work near us for when they have questions.	4/10/2017 1:31 PM
5	Additional faculty offices on campus.	4/10/2017 1:31 PM
6	Faculty Offices and Staff Mtg facilities	4/10/2017 1:30 PM
7	Need more student life opportunities	4/10/2017 1:29 PM
8	updated facilities	4/10/2017 1:29 PM
9	Central nonacademic offices	4/10/2017 1:28 PM
10	Research lab space and faculty offices	4/10/2017 1:28 PM
11	faculty staff break rooms	4/10/2017 1:27 PM
12	On-campus print shop.	4/10/2017 1:25 PM
13	Meeting and or training rooms.	4/10/2017 1:24 PM
14	Office space is critical. It is hard to be efficient when you share an office and have people and other distractions constantly coming in and out.	4/10/2017 1:22 PM
15	We desperately need prep areas for labs. Currently we have virtually no space to prepare materials for labs except for in the labs themselves (which means staying late or coming in early) or in our offices (which presents safety hazards)	4/10/2017 1:22 PM
16	Campus recreation center	4/10/2017 1:21 PM
17	Offices for adjunct faculty. It helps us to have a place to meet with students.	4/10/2017 1:21 PM
18	Conference rooms are at a premium, and the larger ones are badly equipped. It would also be useful to have classrooms with round tables for groups, instead of desks or long tables.	4/10/2017 1:21 PM
19	Performing Arts facility. Theater quality film classrooms. Symposium classrooms.	4/10/2017 1:21 PM

ARKANSAS TECH CAMPUS MASTER PLAN FACULTY AND STAFF SURVEY

Q6 If you could keep and improve one existing facility on campus which would it be?

Answered: 18 Skipped: 25

#	Responses	Date
1	The library	4/10/2017 1:34 PM
2	Tomlinson - The heat and air are never on the right seasons	4/10/2017 1:31 PM
3	Techionery	4/10/2017 1:31 PM
4	The bookstore is in a great location but if it was in the same building as a facility like bastech or the cafeteria that would be even better. Many of the older buildings on campus could use some remodeling and updating to better meet students needs and be more asthetically appealing (Corley, Tomlinson, etc). Corley seems to have mold in the air as well.	4/10/2017 1:31 PM
5	Crabaugh or Tomlinson	4/10/2017 1:31 PM
6	McEver	4/10/2017 1:30 PM
7	Collegiate Center	4/10/2017 1:29 PM
8	TAZ Building	4/10/2017 1:28 PM
9	Improve Corley HVAC	4/10/2017 1:28 PM
10	Administration. It is a sad, old building.	4/10/2017 1:28 PM
11	TAS building make it more handicap accessible	4/10/2017 1:27 PM
12	Wilson Hall. It is comprised of some original buildings and should be preserved to honor our history.	4/10/2017 1:25 PM
13	Witherspoon	4/10/2017 1:24 PM
14	Hull	4/10/2017 1:22 PM
15	Add the bookstore to BazTech and make it a real student union.	4/10/2017 1:21 PM
16	Museum	4/10/2017 1:21 PM
17	Pendergraft Library.	4/10/2017 1:21 PM
18	Witherspoon auditorium.	4/10/2017 1:21 PM

ARKANSAS TECH CAMPUS MASTER PLAN FACULTY AND STAFF SURVEY

Q7 If you could demolish and replace one existing facility on campus which would it be?

Answered: 18 Skipped: 25

#	Responses	Date
1	Cafeteria	4/10/2017 1:34 PM
2	Admin	4/10/2017 1:33 PM
3	Witherspoon, Stroope, Wilson	4/10/2017 1:31 PM
4	The "Power Plant" next to the Admin Building	4/10/2017 1:31 PM
5	Williamson or Witherspoon or Corley	4/10/2017 1:31 PM
6	Jones.	4/10/2017 1:31 PM
7	Witherspoon	4/10/2017 1:30 PM
8	Stroupe	4/10/2017 1:29 PM
9	Shop areas for CRT and AST	4/10/2017 1:29 PM
10	TAZ Building - We need to clone Mr. Murders so faculty would have a resource available on campus.	4/10/2017 1:28 PM
11	Witherspoon. I don't instruct in the college occupying the building, but deferring a decision for a decade on an inadequate building for students and faculty to focus on less important projects (El Paso, Athletics) is a travesty. I still do not know the purpose of El Paso and why we are expending so much time and energy.	4/10/2017 1:28 PM
12	TAS Building	4/10/2017 1:27 PM
13	Witherspoon.	4/10/2017 1:25 PM
14	Witherspoon	4/10/2017 1:22 PM
15	The McEver Lecture pits--they are moldy, outdated, and dangerous. We've had faculty members, staff and students fall in them and get hurt.	4/10/2017 1:22 PM
16	Young	4/10/2017 1:21 PM
17	Witherspoon.	4/10/2017 1:21 PM
18	Witherspoon.	4/10/2017 1:21 PM

ARKANSAS TECH CAMPUS MASTER PLAN FACULTY AND STAFF SURVEY

Q8 What new or improved facility would most help ATU attract future students?

Answered: 16 Skipped: 27

#	Responses	Date
1	Dorm improvement	4/10/2017 1:34 PM
2	Workout/Recreation Facility - Those facilities sell students to an institution	4/10/2017 1:31 PM
3	More parking	4/10/2017 1:31 PM
4	Housing	4/10/2017 1:31 PM
5	Additional food venues.	4/10/2017 1:31 PM
6	unconventional learning environments, i.e. living/learning communities Need to ensure accessibility to all buildings	4/10/2017 1:30 PM
7	Student Rec bldg	4/10/2017 1:29 PM
8	New shop facilities	4/10/2017 1:29 PM
9	Central location for students to congregate and additional parking	4/10/2017 1:28 PM
10	An online learning center dedicated to the expansion, support and tutoring of distance-learning students. This area is our area of potential growth. We can only house so many students on campus. Our focus is much too residential. Facilities do not drive online enrollment.	4/10/2017 1:28 PM
11	A student center larger than Baz-Tech.	4/10/2017 1:25 PM
12	Student Center	4/10/2017 1:24 PM
13	With such a large number of biology/biomedical students interested in the campus improved lab facilities would attract more students. Many of the ones we have are seriously outdated. In fact, many of the surrounding high schools have better labs than we do.	4/10/2017 1:22 PM
14	Recreation Center	4/10/2017 1:21 PM
15	A performing arts center.	4/10/2017 1:21 PM
16	Student Union.	4/10/2017 1:21 PM

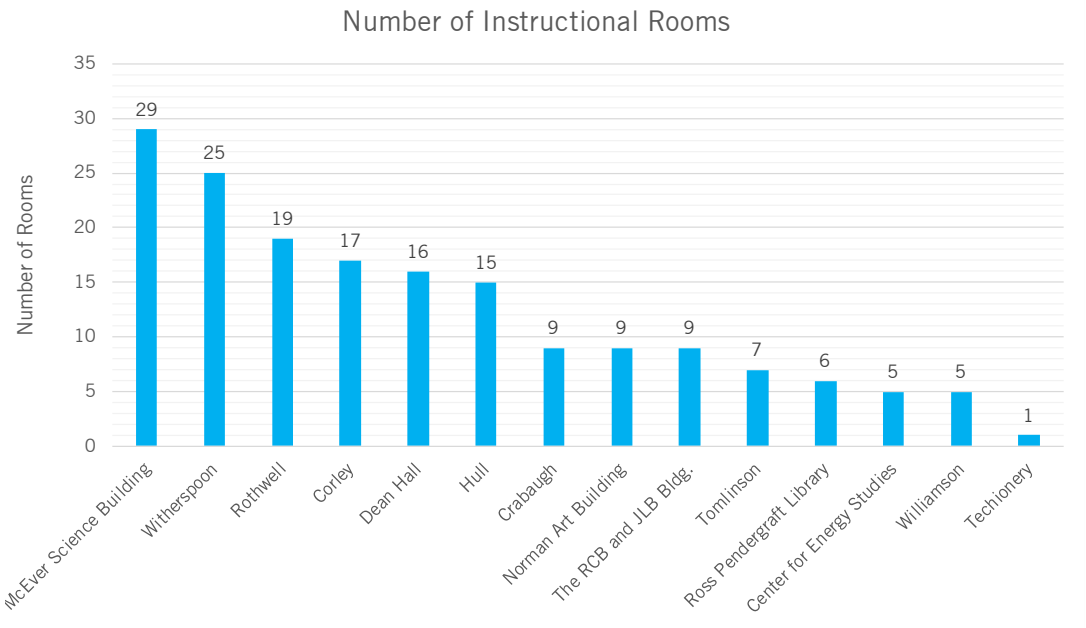
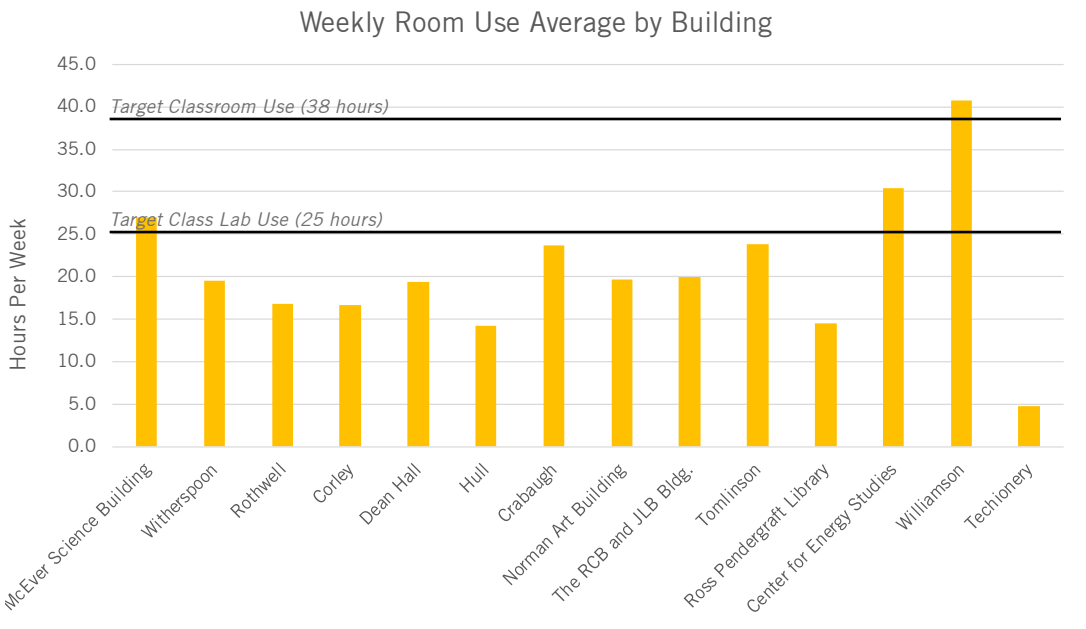
SPACE NEEDS SUMMARY

C

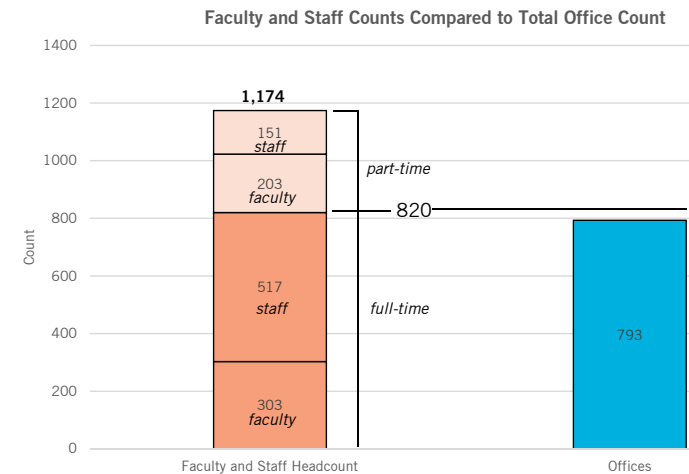
WEEKLY ROOM USE

An evaluation of the total number of hours a specific classroom or class lab is used during a week for instructional purposes. This is a helpful metric to determine how often a room is used.

Across all buildings on campus with instruction classrooms and class labs, weekly room use underperforms when compared to expected for 4-year public teaching universities. The targets of 38 hours per week for classrooms and 25 hours per week for class labs is set forth by the Association for Learning Environments.

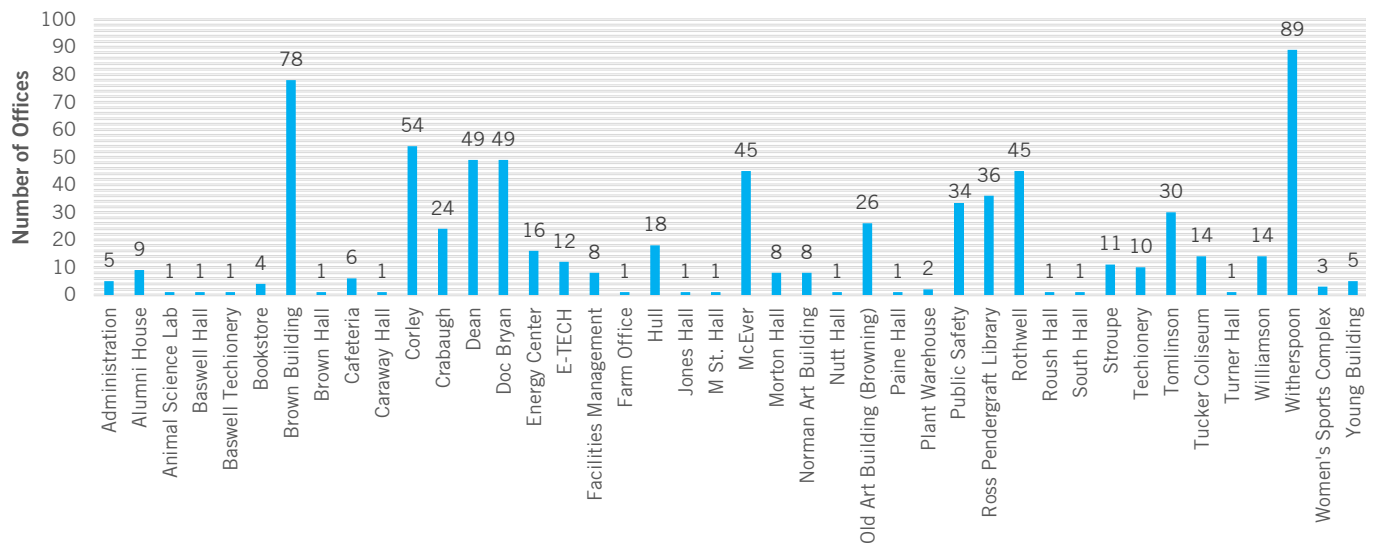


OFFICE SPACE NEEDS

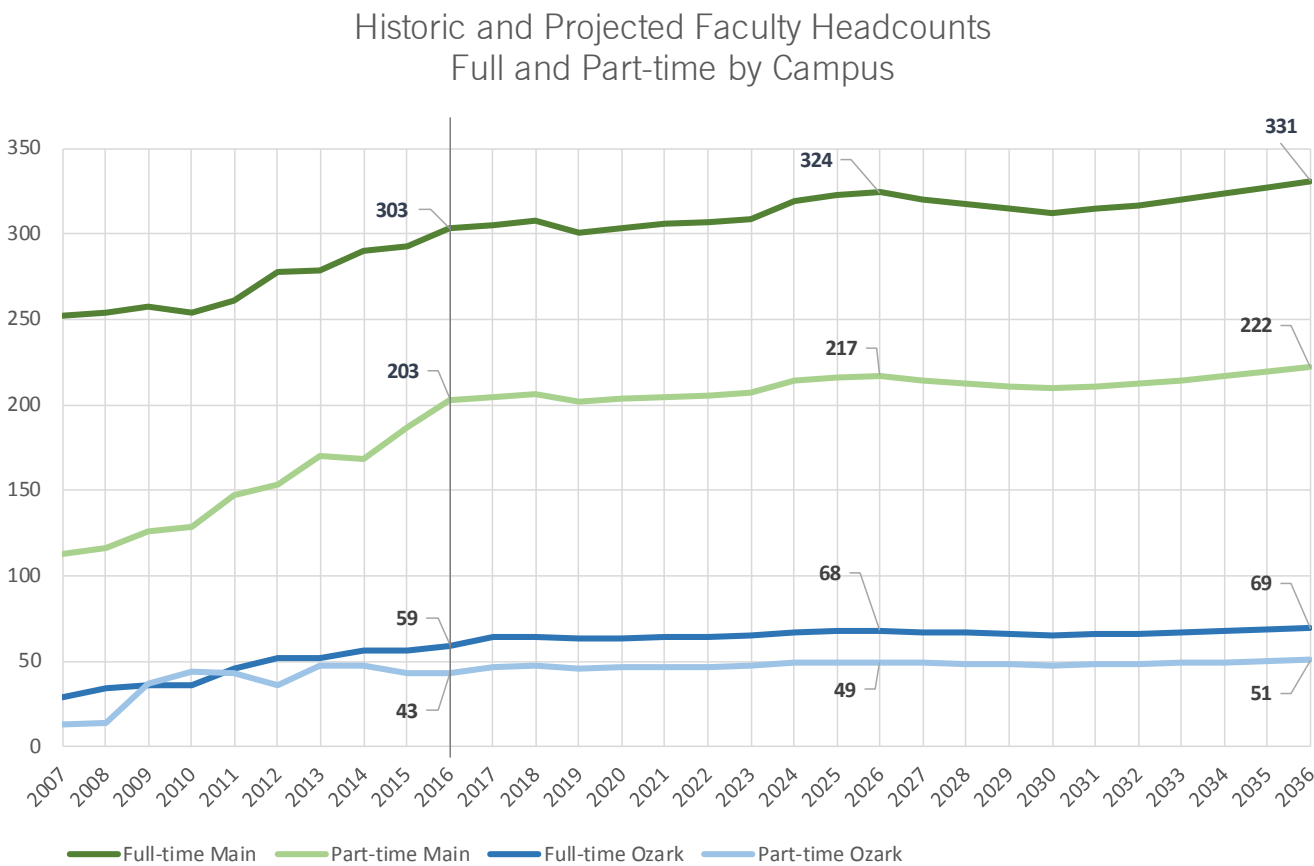


Source: Arkansas Tech University Facility Inventory (March 2017) and Institutional Research Data (April 2017)

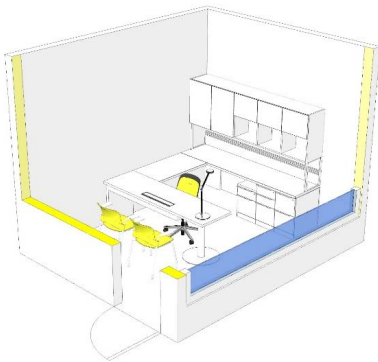
Main Campus Office Quantities by Building



Source: Arkansas Tech University Facility Inventory (March 2017)



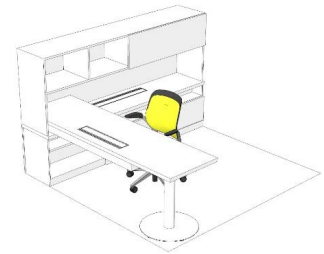
RECOMMENDED OFFICE SIZES



Standard Office
120 assignable square feet



Standard Double Office
140 assignable square feet



Standard Workstation
70 assignable square feet

HOUSING NEEDS ANALYSIS

D

STUDENT HOUSING ANALYSIS

Analysis of the student housing needs for the university were completed by MGT Consulting Group. This detailed analysis included review of multiple related factors to understand the big picture condition of housing and the burden on the university for its current and potential future upkeep.

Analysis Assumptions & Parameters

- Smaller capacity facilities (room/bed counts) do not support economies of scale efficiencies.
- The current ATU housing system facilities (as a whole) do not offer a diverse, attractive range of amenities and features compared to competitors.
- Several housing facilities are in poor physical condition (FCA), and may be less desirable options for students.
- Deferred maintenance costs are significant for a number of ATU housing facilities.
- Currently, ATU leases considerable off-campus bed inventory to meet demand.
- Replacement facilities may impact inventory mix and available price ranges.
- Main campus full-time undergraduate enrollment is key driver of housing demand.
- Freshmen/sophomore enrollments are directly related to annual Arkansas high school graduation numbers.
- Main campus total freshmen enrollment projections are based on prior year AR HS graduate counts, and 10-year historical capture rate (7.91%).
- Sophomore total headcount projections are based on nine-year historical ratio of sophomore to prior year freshmen enrollment (57.65%).

CURRENT HOUSING FACILITIES DATA

Hall	Fall 2016 Semester Rate	Community	Gender	Fall 2016 Capacity	Fall 2016 Occupancy	Occupancy Rate	Square footage	Square footage per bed
Baswell	\$2,213	Suite	Co-Ed	234	220	94.0%	42,768	183
Brown	\$1,628	Community	Co-Ed	154	138	89.6%	28,602	186
Caraway	\$1,732	Community	Female	88	80	90.9%	21,896	249
Critz	\$1,628	Community	Male	86	71	82.6%	11,255	131
Hughes	\$1,628	Community	Co-Ed	101	94	93.1%	14,484	143
Jones	\$1,843	Suite	Co-Ed	208	198	95.2%	33,996	163
M Street	\$2,213	Semi-Private	Co-Ed	288	274	95.1%	74,634	259
Nutt	\$2,213	Suite	Co-Ed	338	328	97.0%	89,487	265
Paine	\$2,213	Private	Co-Ed	216	206	95.4%	49,488	229
South	\$2,213	Private	Male	56	35	62.5%	9,340	167
Stadium Suites	\$2,213	Suite	Co-Ed	44	36	81.8%	7,575	172
Tucker	\$1,843	Semi-Private	Female	84	72	85.7%	13,764	164
Turner	\$1,628	Community	Co-Ed	202	191	94.6%	32,972	163
Vista Place	\$2,824	Private	Co-Ed	208	207	99.5%		0
Wilson	\$1,628	Community	Co-Ed	161	155	96.3%	42,508	264
Commons 2 BR	\$3,508	Suite	Co-Ed	44	277	97.5%		
Commons 4 BR	\$2,824	Suite	Co-Ed	240				
			TOTAL	2,752	2,582	93.8%	472,769	172

CURRENT HOUSING CONDITIONS AND COST CONSIDERATIONS

Fall 2016 Bed Capacity		Fall 2016 Occupancy Rate		Maintenance Costs Per Bed		Replacement Costs Per Bed		Maint \$ as % of Replace \$		Facility Condition Assessment Avg		Concern Indicators		Debt
Stadium Suites	44	South	62.5%	Caraway	\$37,396	M Street	\$48,460	Caraway	83.0%	Caraway	TBD	South	5	
South	56	Stadium Suites	81.8%	Brown	\$25,821	Nutt	\$47,921	Stadium Suites	80.7%	Stadium Suites	4.34	Stadium Suites	5	
Tucker	84	Critz	82.6%	Paine	\$24,402	Wilson	\$47,788	Brown	76.8%	Jones	4.67	Critz	4	X
Critz	86	Tucker	85.7%	Stadium Suites	\$23,213	Caraway	\$45,036	Jones	75.7%	Critz	5.33	Tucker	4	X
Caraway	88	Brown	89.6%	Jones	\$22,391	Paine	\$41,469	Turner	75.2%	South	5.67	Caraway	3	
Hughes	101	Caraway	90.9%	Turner	\$22,216	Baswell	\$34,178	South	68.9%	Tucker	5.67	Jones	3	
Brown	154	Hughes	93.1%	South	\$20,792	Brown	\$33,617	Tucker	62.1%	Turner	6.00	Brown	2	
Wilson	161	Baswell	94.0%	Nutt	\$19,278	South	\$30,188	Paine	58.8%	Brown	6.33	Hughes	2	X
Turner	202	Turner	94.6%	Tucker	\$18,412	Tucker	\$29,658	Hughes	57.4%	Hughes	7.00	Turner	2	
Jones	208	M Street	95.1%	Hughes	\$14,907	Jones	\$29,583	Critz	56.0%	Paine	7.33	M Street	0	X
Vista Place	208	Jones	95.2%	Critz	\$13,260	Turner	\$29,544	Nutt	40.2%	Wilson	8.00	Nutt	0	X
Paine	216	Paine	95.4%	Baswell	\$11,128	Stadium Suites	\$28,751	Baswell	32.6%	Nutt	8.33	Paine	0	X
Baswell	234	Wilson	96.3%	Wilson	\$10,466	Hughes	\$25,953	Wilson	21.9%	Baswell	8.67	Wilson	0	
Commons	284	Nutt	97.0%	M Street	\$6,586	Critz	\$23,688	M Street	13.6%	M Street	9.33	Baswell	0	X
M Street	288	Vista Place	99.5%	Vista Place		Vista Place		Vista Place		Commons		Commons		X
Nutt	338	Commons	97.5%	Commons		Commons		Commons		Vista Place		Vista Place		
TOTAL	2752		93.8%		\$18,037		\$38,128		47.3%					



ARKANSAS TECH
A CENTURY FORWARD

2017 Campus Master Plan

**Review of Student
Housing Facilities Needs
June 22, 2017**



ARKANSAS TECH
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Report Outline

- Purpose
- Analysis Assumptions and Parameters
- Current Housing System Facility Profiles
- ATU Full-time Main Campus Enrollment Projections
- Future Housing Demand Estimates
- Financial Implications of Housing Facilities Changes
- Appendix –Housing Facilities Summary Data





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Purpose of Housing Review

- The review is one part of the campus master planning effort.
- Campus leadership needs to make critical decisions about improvements to current ATU housing facilities.
- ATU officials have identified several facilities for removal, reuse, or disposal.
- Projected housing demand estimates will help inform decisions.
- Identification of the magnitude of estimated new or replacement bed counts to meet future demand is paramount.
- Financial implications of housing facilities changes at the system level will impact future plans and timing.



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Analysis Assumptions & Parameters

- Smaller capacity facilities (room/bed counts) do not support economies of scale efficiencies.
- The current ATU housing system facilities (as a whole) do not offer a diverse, attractive range of amenities and features compared to competitors.
- Several housing facilities are in poor physical condition (FCA), and may be less desirable options for students.
- Deferred maintenance costs are significant for a number of ATU housing facilities.
- Currently, ATU leases considerable off-campus bed inventory to meet demand.





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Analysis Assumptions & Parameters

- Replacement facilities may impact inventory mix and available price ranges.
- Main campus full-time undergraduate enrollment is key driver of housing demand.
- Freshmen/sophomore enrollments are directly related to annual Arkansas high school graduation numbers.
- Main campus total freshmen enrollment projections are based on prior year AR HS graduate counts, and 10-year historical capture rate (7.91%).
- Sophomore total headcount projections are based on nine-year historical ratio of sophomore to prior year freshmen enrollment (57.65%).



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Analysis Assumptions & Parameters

- Small incremental increases (every two years) in capture rates for freshmen (1.5%) and sophomores (0.5%) are included in the headcount projections to reflect some level of enrollment recruitment/retention strategies.
- Three Enrollment Scenarios are presented:
 - #1 - Status Quo of historical share for Freshmen & Sophomore headcount.
 - #2 - Increased Freshmen capture rate and status quo Sophomore rate.
 - #3 - Increased Freshmen and Sophomore capture rates.
- Full-time freshmen and sophomore enrollment at main campus are based on historical FT share of total freshmen and sophomore headcount on the campus.

Note: Projected ATU enrollments developed for this analysis reflect fluctuations in annual Arkansas high school graduate production, therefore annual enrollment projections expand and contract accordingly.



Housing Facilities Profiles

17 residential facility options

- 2,772 beds available in Fall 2016
- 2,564 on-campus beds
- 208 beds in leased off-campus properties
- 94% total occupancy
- Mix of traditional-style, suites, and apartments offering private and multi-occupancy bedrooms.



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2016 Housing Facilities Profiles

Hall	Fall 2016 Semester Rate	Community	Gender	Fall 2016 Capacity	Fall 2016 Occupancy	Occupancy Rate	Square footage	Square footage per bed
Baswell	\$2,213	Suite	Co-Ed	234	220	94.0%	42,768	183
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Nutt	\$2,213	Suite	Co-Ed	338	328	97.0%	89,487	265
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Commons 2 BR	\$3,508	Suite	Co-Ed	44	277	97.5%		
Commons 4 BR	\$2,824	Suite	Co-Ed	240				
TOTAL				2,752	2,582	93.8%	472,769	172





ARKANSAS TECH
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Housing Facilities Rating Concern Indicators - Details

Fall 2016 Bed Capacity	Fall 2016 Occupancy Rate	Maintenance Costs Per Bed	Replacement Costs Per Bed	Maint \$ as % of Replace \$	Facility Condition Assessment Avg	Concern Indicators	Debt
Stadium Suites 44	South 62.5%	Caraway \$37,396	M Street \$48,460	Caraway 83.0%	Caraway TBD	South 5	
South 56	Stadium Suites 81.8%	Brown \$25,821	Nutt \$47,921	Stadium Suites 80.7%	Stadium Suites 4.34	Stadium Suites 5	
Tucker 84	Critz 82.6%	Paine \$24,402	Wilson \$47,788	Brown 76.8%	Jones 4.67	Critz 4	X
Critz 86	Tucker 85.7%	Stadium Suites \$23,213	Caraway \$45,036	Jones 75.7%	Critz 5.33	Tucker 4	X
Caraway 88	Brown 89.6%	Jones \$22,391	Paine \$41,469	Turner 75.2%	South 5.67	Caraway 3	
Hughes 101	Caraway 90.9%	Turner \$22,216	Baswell \$34,178	South 68.9%	Tucker 5.67	Jones 3	
Brown 154	Hughes 93.1%	South \$20,792	Brown \$33,617	Tucker 62.1%	Turner 6.00	Brown 2	
Wilson 161	Baswell 94.0%	Nutt \$19,278	South \$30,188	Paine 58.8%	Brown 6.33	Hughes 2	X
Turner 202	Turner 94.6%	Tucker \$18,412	Tucker \$29,658	Hughes 57.4%	Hughes 7.00	Turner 2	
Jones 208	M Street 95.1%	Hughes \$14,907	Jones \$29,583	Critz 56.0%	Paine 7.33	M Street 0	X
Vista Place 208	Jones 95.2%	Critz \$13,260	Turner \$29,544	Nutt 40.2%	Wilson 8.00	Nutt 0	X
Paine 216	Paine 95.4%	Baswell \$11,128	Stadium Suites \$28,751	Baswell 32.6%	Nutt 8.33	Paine 0	X
Baswell 234	Wilson 96.3%	Wilson \$10,466	Hughes \$25,953	Wilson 21.9%	Baswell 8.67	Wilson 0	
Commons 284	Nutt 97.0%	M Street \$6,586	Critz \$23,688	M Street 13.6%	M Street 9.33	Baswell 0	X
M Street 288	Vista Place 99.5%	Vista Place	Vista Place	Vista Place	Commons	Commons	X
Nutt 338	Commons 97.5%	Commons	Commons	Commons	Vista Place	Vista Place	
TOTAL 2752	93.8%	\$18,037	\$38,128	47.3%			



ARKANSAS TECH
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Housing Facilities Concern Indicators – Summation

	Fall 2016 Bed Capacity	Fall 2016 Occupancy Rate	Maintenance Costs Per Bed	Replacement Costs Per Bed	Maint \$ as % of Replace \$	Facility Condition Assessment Avg	Concern Indicators
South	X	X		X	X	X	5
Stadium Suites	X	X		X	X	X	5
Critz*	X	X		X		X	4
Tucker*	X	X		X		X	4
Caraway	X		X		X	X	3
Jones				X	X	X	3
Brown			X		X		2
Hughes*	X			X			2
Turner				X	X		2
M Street*							0
Nutt*							0
Paine*							0
Wilson							0
Baswell*							0
Commons							0
Vista Place							0

*Facilities carry debt service.



Enrollment Scenarios

Scenario #1 – Status Quo

- Assumes no change in the recent enrollment trends moving forward

Scenario #2 - Increased Freshman Capture

- Assumes a 1.75% increase in freshman enrollments every two years

Scenario #3 - Increased Freshman & Sophomore Capture

- Assumes a 1.75% increase to capture rate of prior year HS grads for freshman enrollments and a 0.5% in increased sophomore capture of prior freshmen headcount every two years

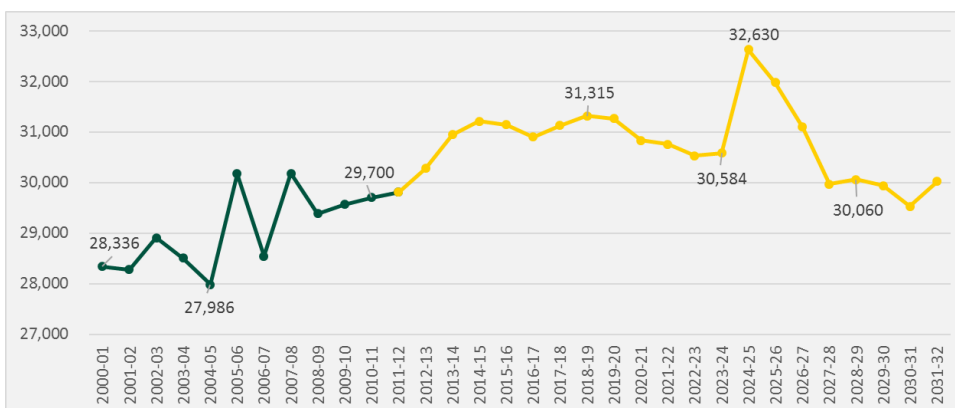


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Arkansas High School Graduation Trends and Projections



Notes: School Year refers to the K-12 calendar running fall to spring and may include graduates from any point in that school year, including the summer after the year end. The Grand Total is the sum of the Private Schools and Public Schools totals. The Private Schools Total includes schools not supported primarily by public funds, religious and nonsectarian, but not including homeschool students. Private Schools projections begin in school year 2011-12. The Public Schools Total will not exactly equal the sum of the races/ethnicities columns, which are projected separately. Prior to 2010-11, data were not available separately for Asian and Pacific Islander students, and Two or More Races students. Hawai'ian/Pacific Islander and Two or More Races counts are displayed separately in the years they were reported for informational purposes, but are included in the race categories in the projected years. For more detailed information, see Appendix C Technical Information and Methodology at www.wiche.edu/knocking.

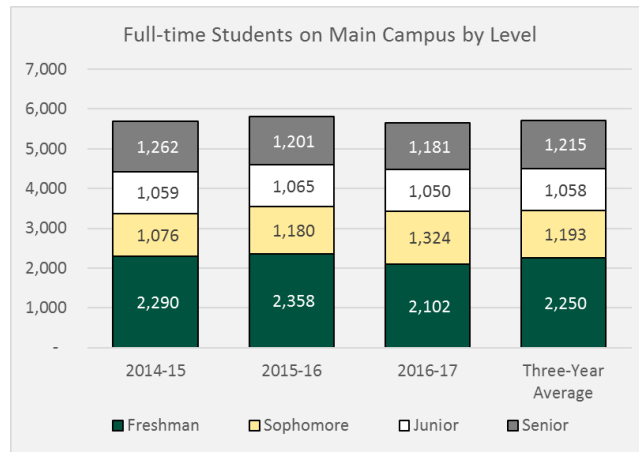
Source: Western Interstate Commission for Higher Education, Knocking at the College Door: Projections of High School Graduates, 2016.





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ATU Historical Enrollment Trends



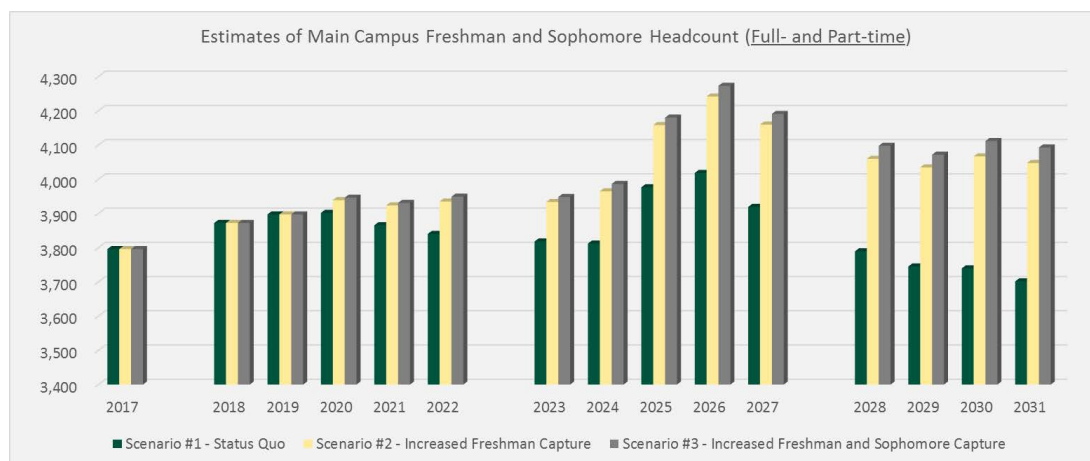
	Full-time Main Campus Non-Distance Learning Enrollments			Total Enrollments	% of Total Enrollments which are F-T in Russellville
	Fall 2014	Fall 2015	Fall 2016	Fall 2016	
Freshman	2,290	2,358	2,102	2,995	70.2%
Sophomore	1,076	1,180	1,324	1,880	70.4%
Junior	1,059	1,065	1,050	1,583	66.3%
Senior	1,262	1,201	1,181	2,069	57.1%
Total	5,687	5,804	5,657	8,527	66.3%

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ATU Enrollment Projections



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Status Quo	3,796	3,872	3,897	3,902	3,866	3,840	3,818	3,812	3,977	4,018	3,919	3,789	3,745	3,740	3,702
Increased Freshman Capture	3,796	3,872	3,897	3,939	3,924	3,935	3,934	3,965	4,158	4,242	4,160	4,060	4,035	4,067	4,047
Increased Freshman and Sophomore Capture	3,796	3,872	3,897	3,946	3,931	3,949	3,948	3,986	4,180	4,273	4,191	4,098	4,072	4,112	4,093

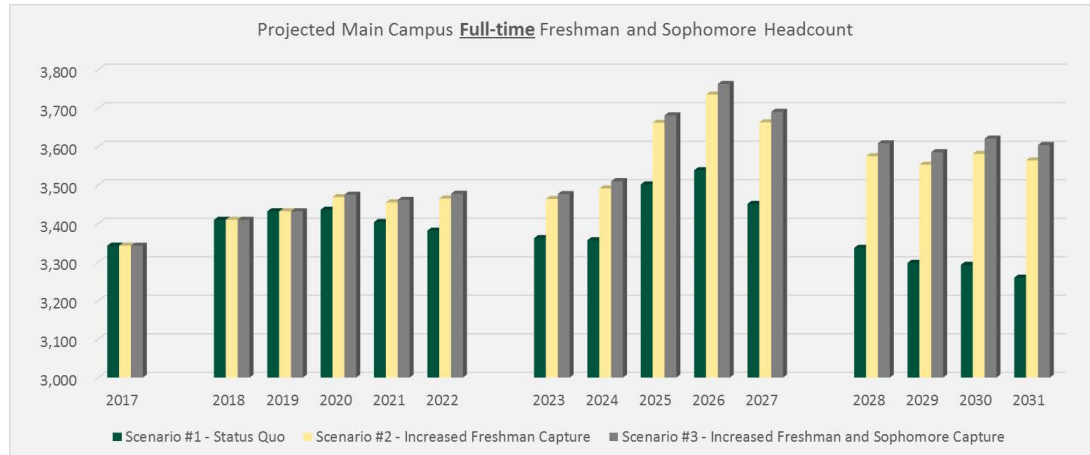
Note: Data are displayed in five-year increments beyond Fall 2017 for the purposes of demand analysis.

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ATU Enrollment Projections



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Status Quo	3,343	3,410	3,432	3,436	3,404	3,382	3,362	3,357	3,502	3,538	3,451	3,337	3,298	3,293	3,259
Increased Freshman Capture	3,343	3,410	3,432	3,469	3,455	3,465	3,464	3,491	3,662	3,735	3,663	3,575	3,553	3,581	3,564
Increased Freshman and Sophomore Capture	3,343	3,410	3,432	3,475	3,461	3,477	3,477	3,510	3,681	3,763	3,690	3,608	3,585	3,621	3,604



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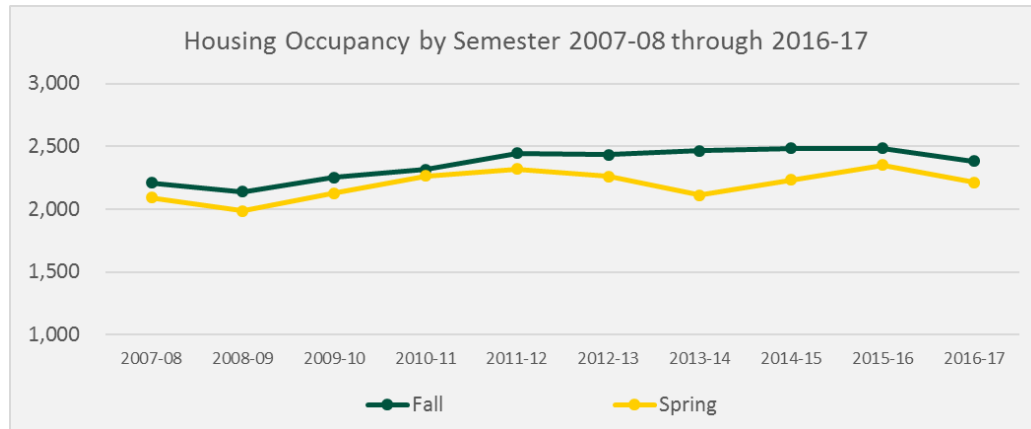
Housing Occupancy Trends





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Housing Occupancy Trends

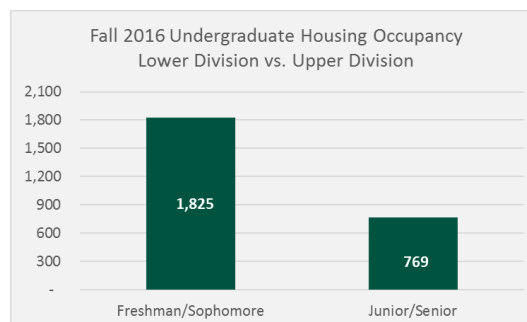
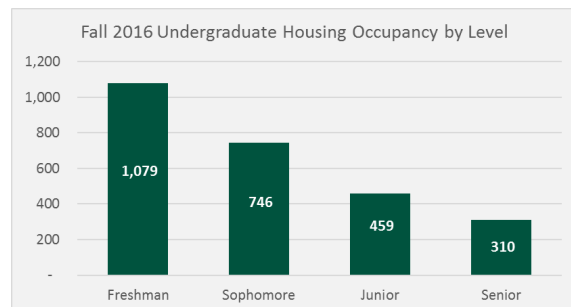


Note: Housing occupancy data were not provided for Spring 2010, therefore an average of the occupancy from Spring 2009 and 2011 was calculated for this exhibit.



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Housing Occupancy – Fall 2016



Housing Demand Models

Housing demand is based on the three enrollment scenarios previously described.

Five-year groupings indicate periods of time during which existing housing facilities could be taken offline.

- Phase I: 2018 through 2022
- Phase II: 2023 through 2027
- Phase III: 2028 through 2031

Note: Arkansas high school graduation projection data ended in 2031, therefore Phase III only covers a four-year period.

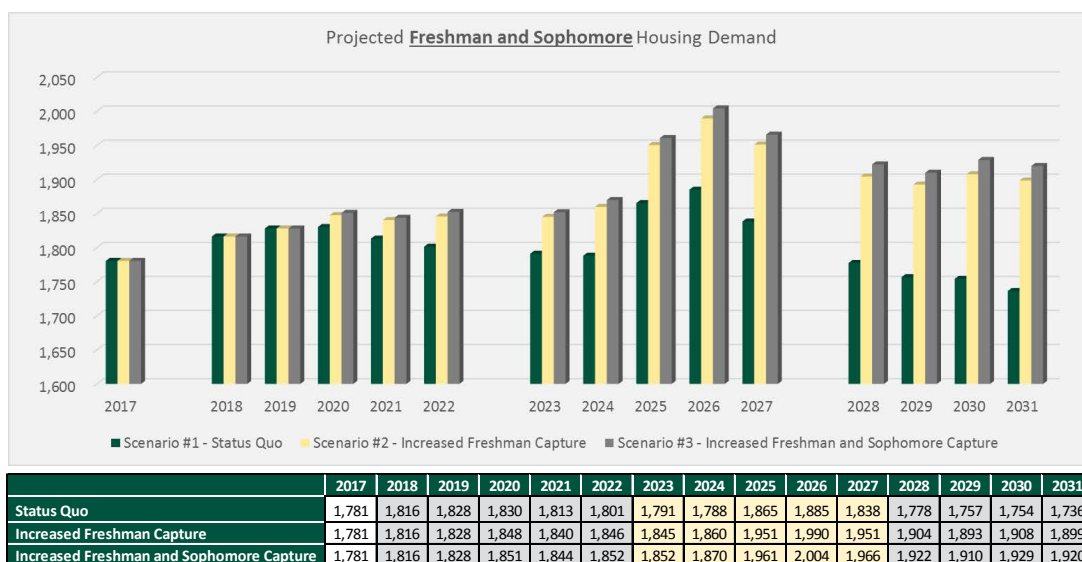


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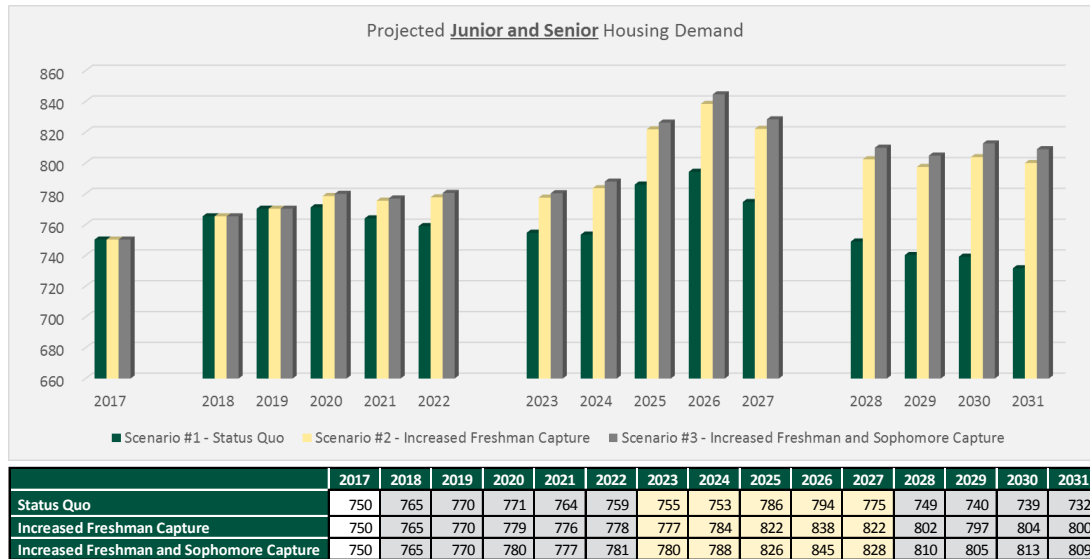
Projected Housing Demand





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Projected Housing Demand

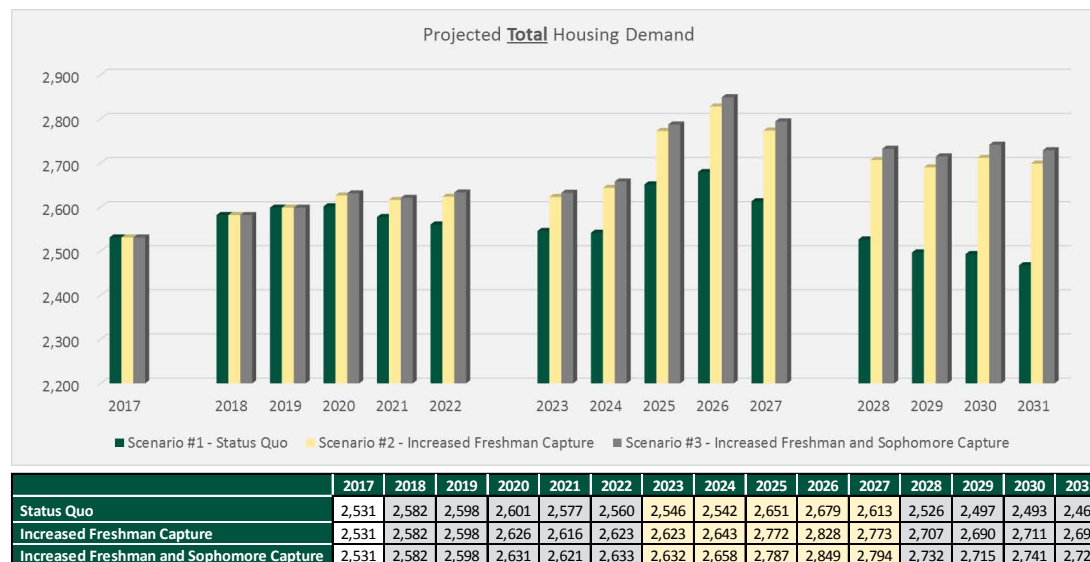


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Projected Housing Demand



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Projected Bed Deficits

Beds Offline During Each Hypothetical Phase



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- **Phase I:** Caraway, East Gate, Jones, and South
- **Phase II:** All of the above and Critz, Hughes, Stadium Suites, and Tucker
- **Phase III:** All of the above and Vista Place



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Bed Capacity Planned for 2017

Housing Facility	Planned Bed Capacity
Baswell	234
Brown	154
Caraway	88
Critz	86
East Gate	20
Hughes	101
Jones	208
MStreet	338
Nutt	388
Paine	216
South	42
Stadium Suites	44
Tucker	84
Turner	202
University Commons	284
Vista Place	208
Wilson	161
TOTAL	2,858

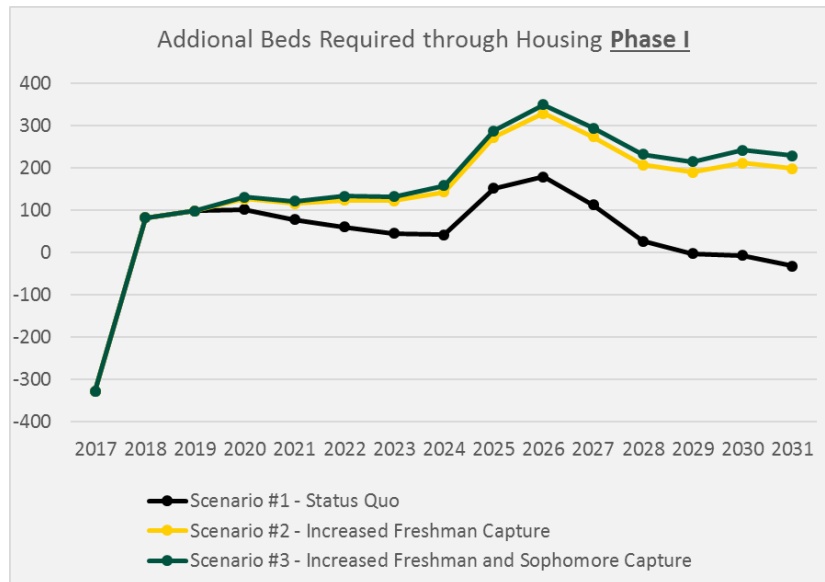
- No new buildings are included in the Fall 2017 inventory.
- Additional bed capacity (compared to Fall 2016) is generated by increasing multi-occupant rooms in Nutt and M Street.
- Assumes all existing facilities remain online for Academic Year 2017 - 2018.

Note: Fall 2017 bed capacity provided by ATU.





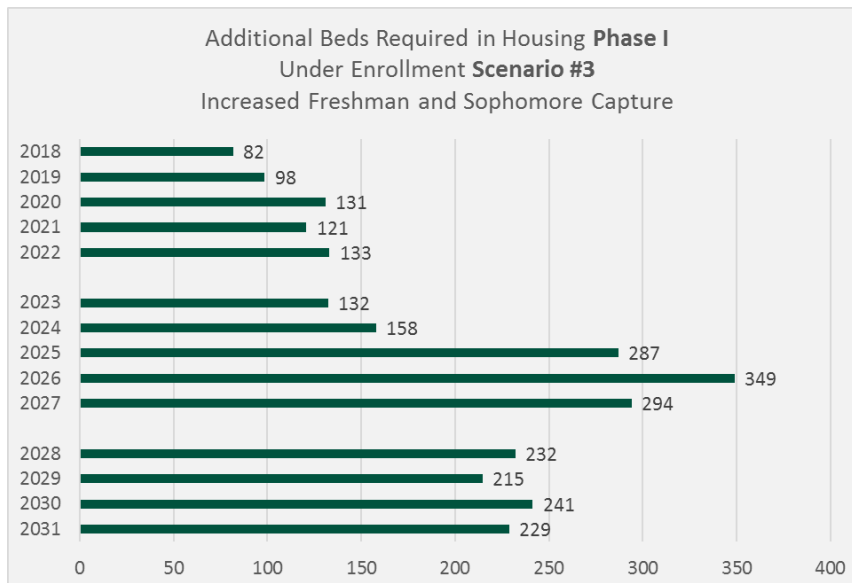
Projected Bed Deficit: Housing Phase I



Note: Current (2017) housing facilities which will be offline in Phase I: Caraway, East Gate, Jones, and South.



Projected Bed Deficit: Housing Phase I

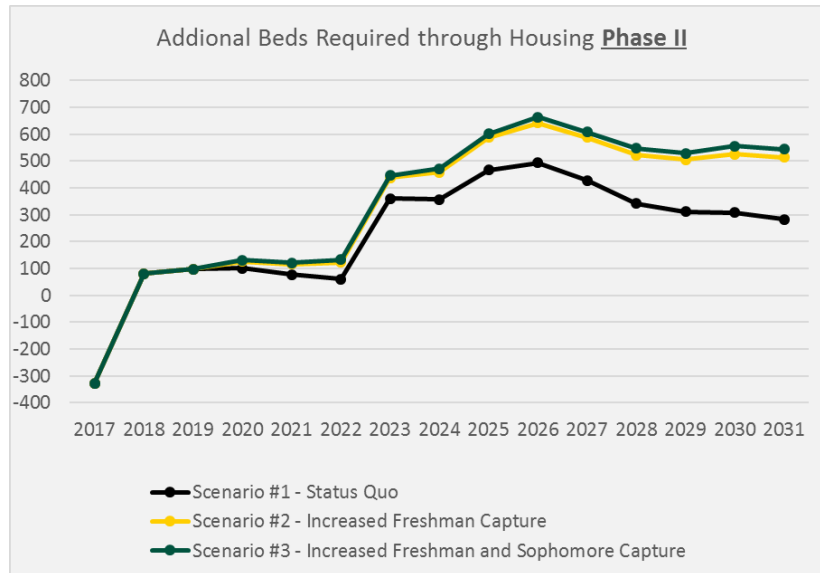


Note: Current (2017) housing facilities which will be offline in Phase III: Caraway, East Gate, Jones, and South; Critz, Hughes, Stadium Suites, and Tucker; along with Vista Place.





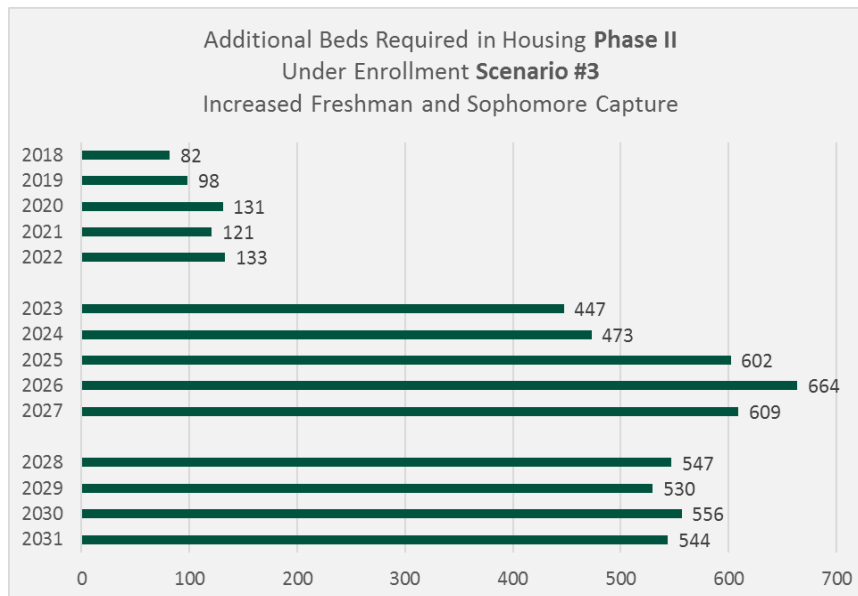
Projected Bed Deficit: Housing Phase II



*Note: Current (2017) housing facilities which will be offline in Phase II: Caraway, East Gate, Jones, and South; along with **Critz, Hughes, Stadium Suites, and Tucker**.*



Projected Bed Deficit: Housing Phase II



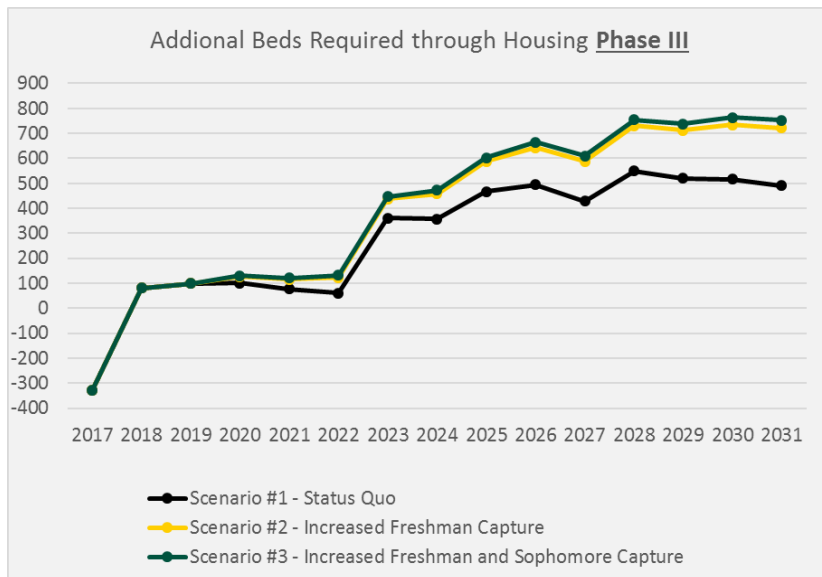
*Note: Current (2017) housing facilities which will be offline in Phase III: Caraway, East Gate, Jones, and South; Critz, Hughes, Stadium Suites, and Tucker; along with **Vista Place**.*





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Projected Bed Deficit: Housing Phase III

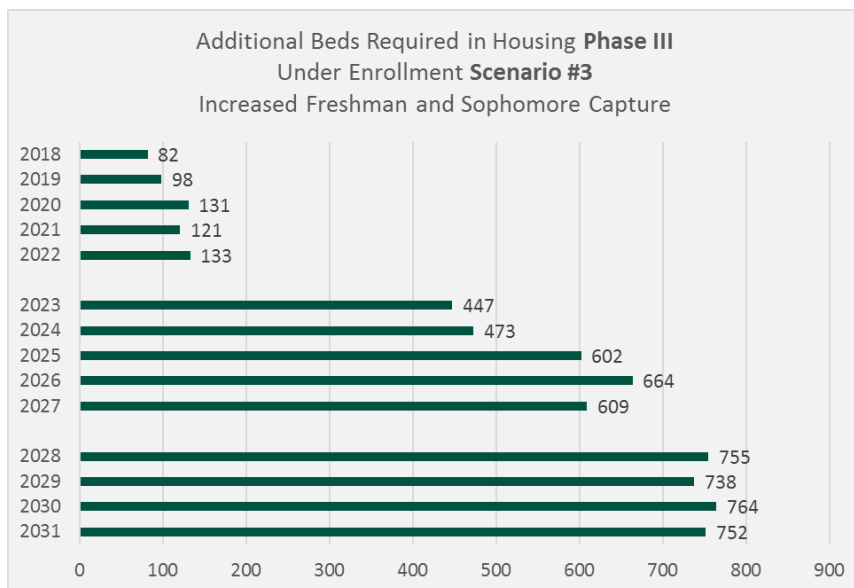


Note: Current (2017) housing facilities which will be offline in Phase III: Caraway, East Gate, Jones, and South; Critz, Hughes, Stadium Suites, and Tucker; along with Vista Place.



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Projected Bed Deficit: Housing Phase III



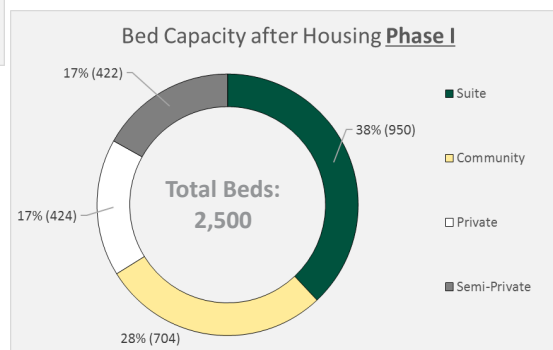
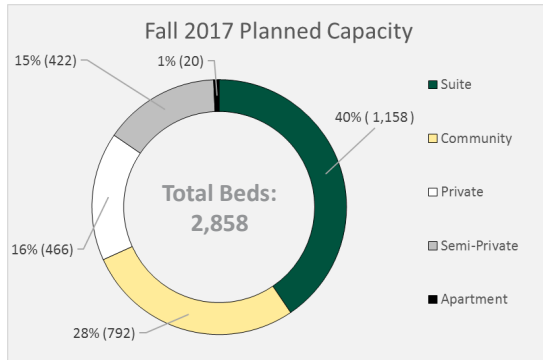
Note: Current (2017) housing facilities which will be offline in Phase III: Caraway, East Gate, Jones, and South; Critz, Hughes, Stadium Suites, and Tucker; along with Vista Place.





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Change in Housing Stock Mix

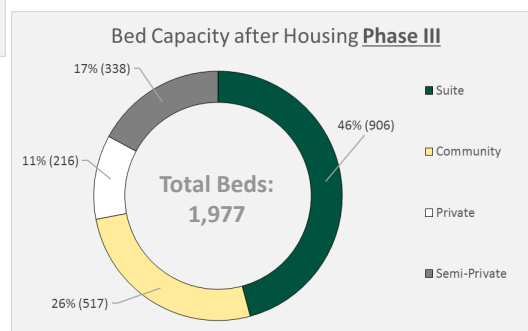
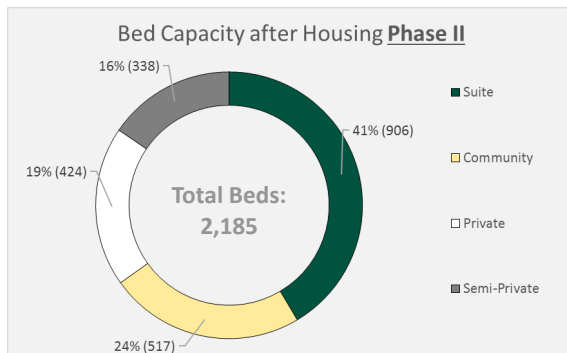


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Change in Housing Stock Mix



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Rental Rate Analysis

Impacts on ATU Semester Rental Rate Ranges Based on Housing Phases

	2016-17 Rates	2017-18 Rates	Phase I*	Phase II*	Phase III*
High	\$3,508	\$3,649	\$3,649	\$3,649	\$3,649
Average Rate (of Range)	\$2,367	\$2,463	\$2,573	\$2,704	\$2,646
Low	\$1,628	\$1,694	\$1,694	\$1,694	\$1,694

**Rental rates displayed for Phases reflect 2017 dollars, and do not account for planned annual increases.*

Note: Housing facilities changes are cumulative, as follows:

Phase I: Caraway, East Gate, Jones, and South

Phase II: Critz, Hughes, Stadium Suites, and Tucker

Phase III: Vista Place.



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Financial Implications





Financial Implications

- Must be able to cover debt service costs of halls recommended for demolition/sale – Critz, Hughes, Tucker, and East Gate.
- Impact of lost beds on central office costs for Residence Life.
- Ability to positively cashflow leased properties such as Vista Place.
- Cash flow for Residence Life possibly generated by early pay-off of The Commons, Phase I and II using reserves.
- Demolition/sale of halls will reduce deferred maintenance.
- Construction of new beds to replace beds lost to demolition/sale will increase debt service.



Conclusions

Cumulative range of beds required to meet demand at each Phase:

Phase I

Low = 82

High = 133

Phase II

Low = 447

High = 664

Phase III

Low = 738

High = 764



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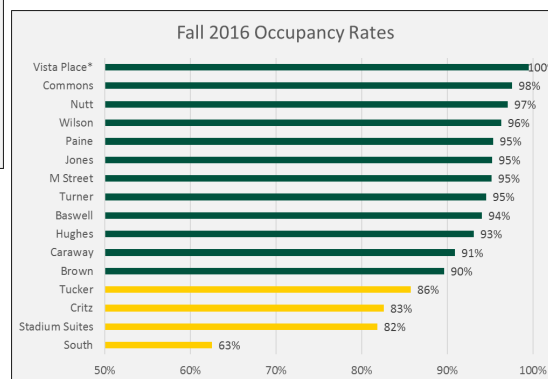
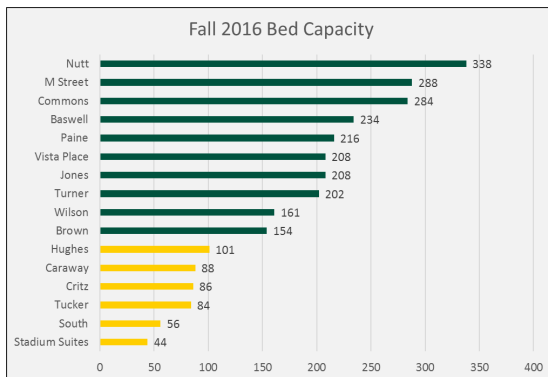
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Appendix: Housing Facilities Data Summary



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Fall 2016 Housing Capacity and Occupancy



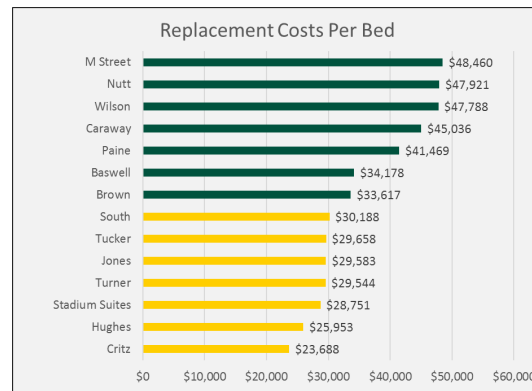
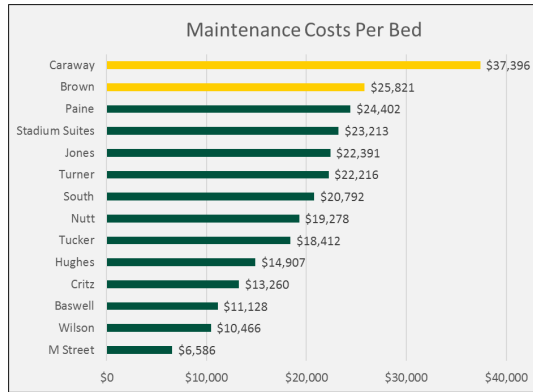
ATU rents beds as needed from Vista Place each semester, so the occupancy rate will always be 100%.





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Costs per Bed

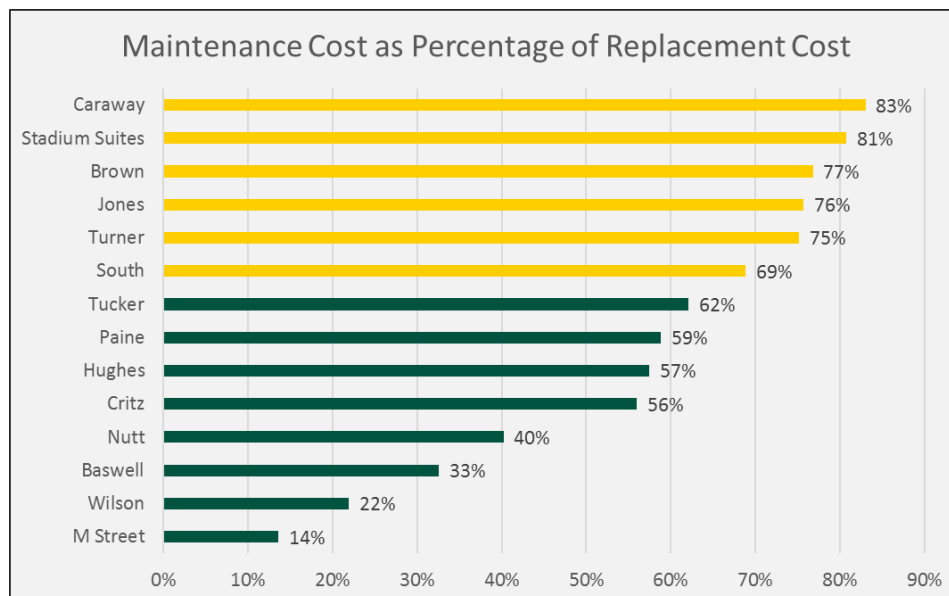


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Costs per Bed

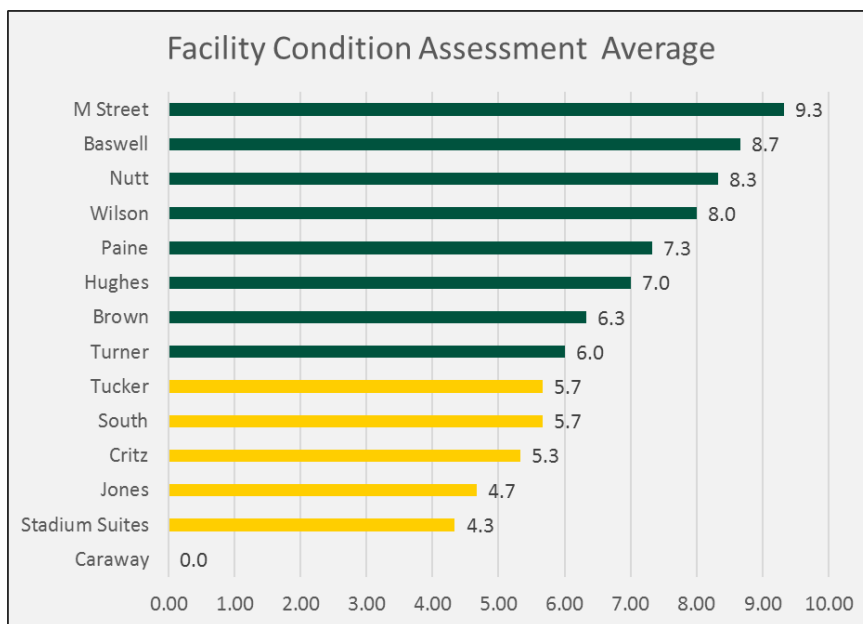


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Facility Condition Assessments



TRANSPORTATION MOBILITY & PARKING NEED

E

APPENDIX

PARKING SPACE NEED

Russellville Campus

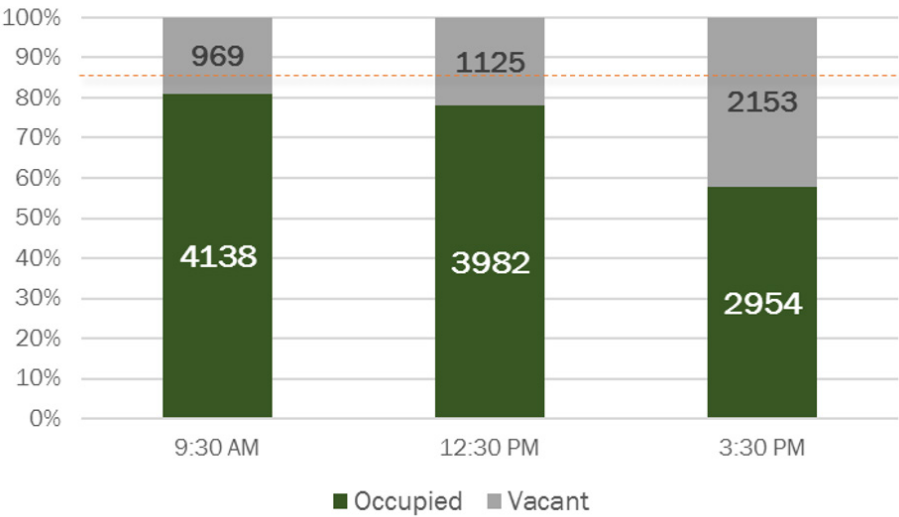
Nelson Nygaard conducted an analysis of the mobility options for the campus and made the following observations which informed the master plan.

- Heavy reliance on driving; no incentive not to
- Infrequent yet heavy use of limited transit
- Little awareness of transit & bike options
- Walking conflicts with cars in heart of campus & at prime gateway of O Street & Arkansas
- Concerns about poor condition of sidewalks
- ADA access issues to some buildings
- Gateways and wayfinding are not well defined

Parking discussion also included implications of campus events which change parking demand and availability and the access to key visitor activities on campus such as the football stadium and performing arts venues.

Overall it was concluded that the campus provides sufficient number of parking spaces in its total provision. However, as is typical with the convenience of parking there is always a desire to park close to buildings making some lots far more popular than others.

Extrapolated Parking Utilization Sample, Mondays, Wednesdays, and Fridays, Spring 2017

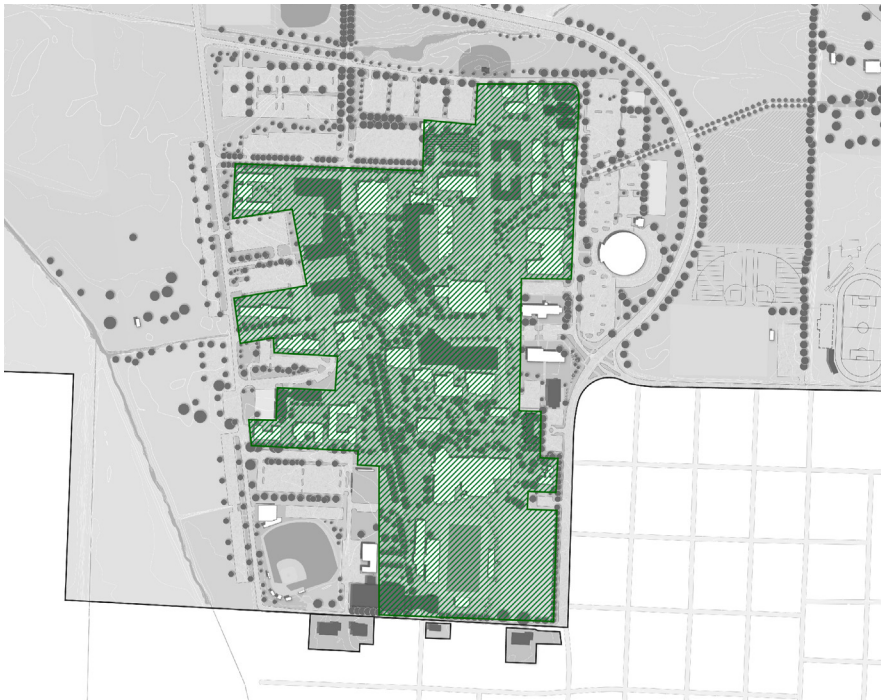


- The orange line represents 85% parking utilization which is a functional target for campus design.
- Lowest Parking Utilization Gap Documented: 280 out of 1,476 spaces (or 81% occupied)
- 1.9 open acres documented
- Extrapolated to entire Inventory (5,107 spaces):
- 969 open spaces
- 6.3 open acres calculated

PARKING POTENTIAL EFFICIENCIES

This concept begins with the idea to remove parking from the core of the campus, which is also part of the landscape approach proposed to pedestrianize the campus core. It also requires consideration of the impacts on parking locations.

Further information on associated parking policy changes which will support these moves is contained in the on going monitoring and engagement section.



STEP 1

Area in green is campus core, seeking to reduce vehicle movements in this area for safety and quality of spaces



STEP 2

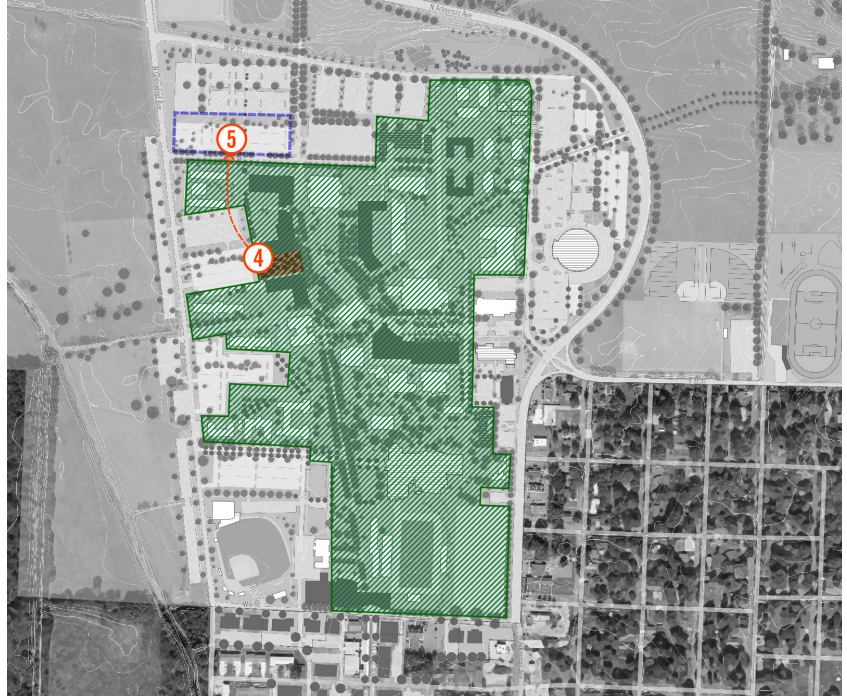
New entrance configuration coupled with new parking and closing of parking on O street and Boulder Avenue

APPENDIX

PARKING POTENTIAL EFFICIENCIES

STEP 3

Improved parking efficiency in north lot and removal of parking on Academic Quad, coupled with STEM 1 construction



STEP 4

Hull and hospitality parking moved to re-configured 'events' and visitor focused lot. Residence parking moves north of Critz in reconfigured lot, extra capacity provided when Critz and Tucker are closed. If overflow is required, reconfiguration north of Turner provides capacity

Proposed Merge:

Lots CC, DD, EE, FF (Currently 223 spaces) into 1 Residential Lot

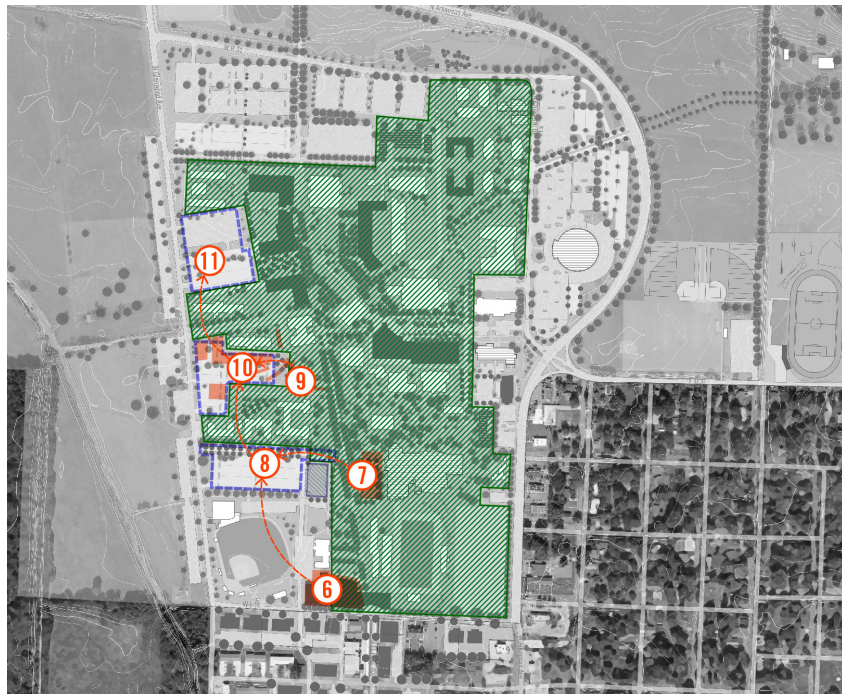
Can add ~30 spaces without affecting trees on Glenwood and N Streets

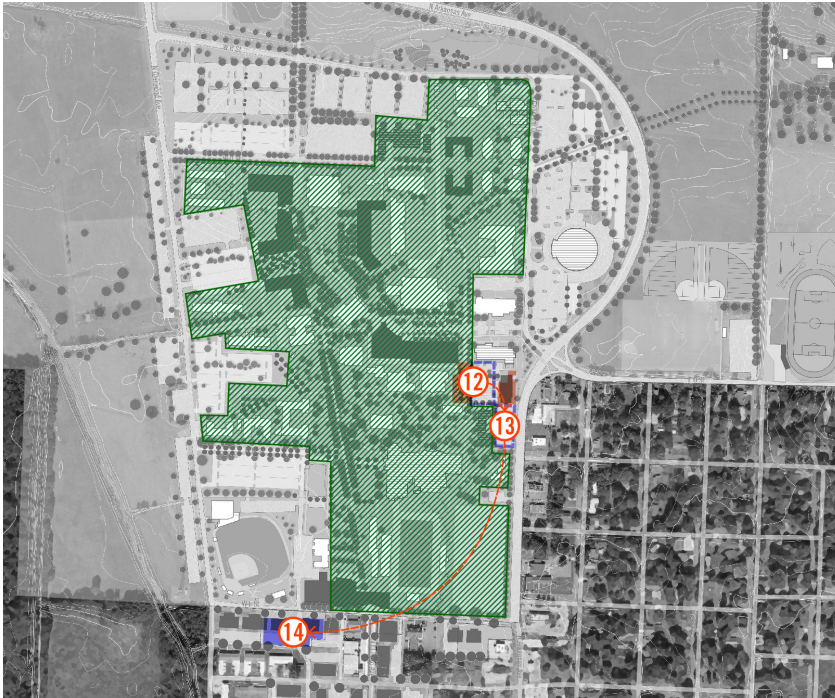
Lots and circular access road have an asphalt condition of 73 to 79 (out of 100)

Lots U, W, X, Y (Currently 416 spaces) into 1 Residential Lot

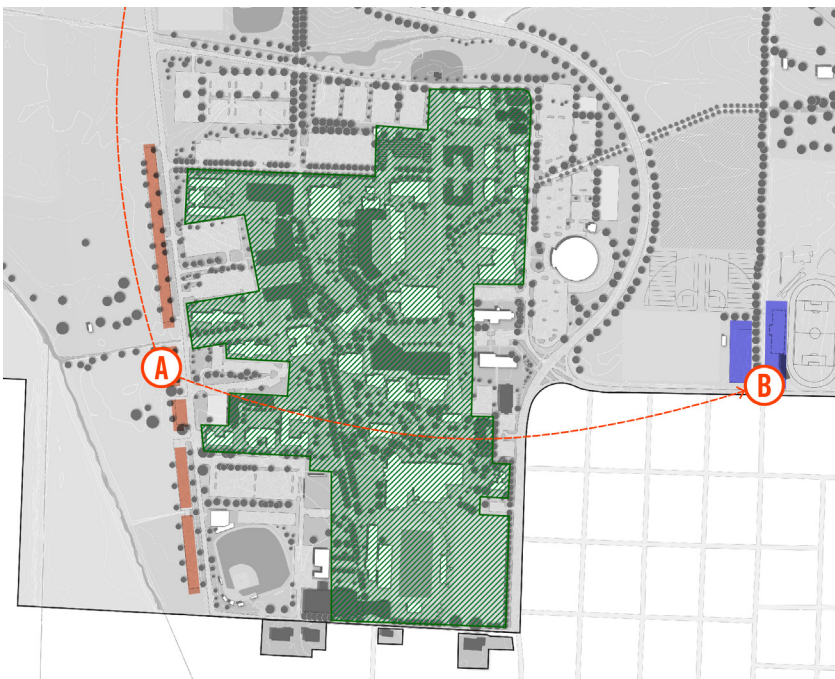
Can remove X lot and provide approximately the same number of spaces through improved efficiency and consolidation of lots U, W, and Y.

Lots have an asphalt condition of 79/100



**STEP 5**

Admin parking takes over Caraway parking as Greek life relocated to L Street. Campus police will have already moved to El Paso Street reducing parking demand in this location.

**STEP 6**

Opportunity to remove all parking spaces from the 100 year flood zone initially a temporary or 'grass paved'.

To north trail and sidewalk connections are planned to be improved as part of better connections to the farm.

Proposed Expansion:

Lot K (Currently 191 spaces)

Lot could be extended to provide additional ~ 80 spaces.

Lots VV and NN into 1 Flex (Resident and/or Visitor) Lot

Lot could be used for residential parking with conditions for vehicles to be removed to alternative lots should larger evening and weekend events like Homecoming or Party on the Plaza require close parking.

Proposed Relocation:

Lots Q, M, G (Currently 151 spaces) to Lot J expansion

Lots had an asphalt condition of 72 to 74 out of 100

SUMMARY

In summary, the master plan allows for growth in parking numbers, however, it recommends that these are not implemented until tests in demand are carried out.

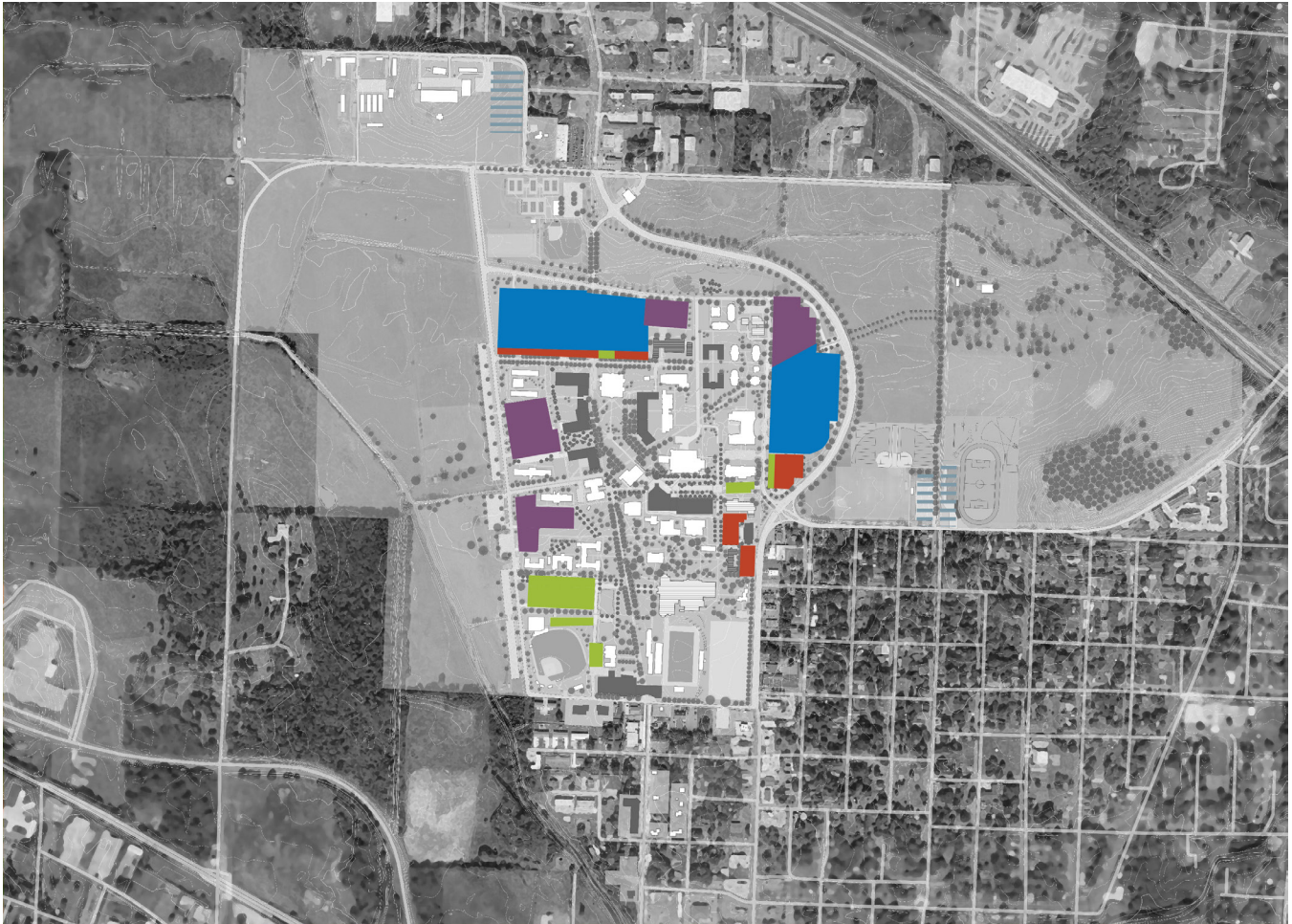
- Proposed gain of ~ 450 spaces
- Proposed loss of ~ 200 spaces
- Net growth of ~ 250 spaces
- Net approx. \$3 million capital cost (assuming \$10,000 per surface space and \$500,000 in milling and overlay cost for merged lots)

POTENTIAL PEDESTRIAN AND BICYCLE CONNECTION IMPROVEMENTS



Blue routes are principal pedestrian and ADA connections for investment. These align with the evacuation routes and resiliency considerations for the campus as a whole. The red routes identified are potential additional opportunities for cycle connections and the El Paso connection north to south through campus is a recommended processional route for remote parking north of the library on game days.

POTENTIAL PARKING LOT EFFICIENCY AND CONSOLIDATION



Specific focus on the stadium and the performing arts venue has been considered. The area near the PAC has been considered to hold space for 2000 person auditorium with an assumption that students attending event will come on foot and staff will not need to relocate their car to be close to the PAC. The delta of the visitors to the events will be from the community. And the university will work with the city to encourage walking and other mobility options for major events. This will be similar for events like party on the plaza.

For game day events (5-6 per year) a procession through campus will be encouraged as part of on going tailgate and event coordination discussion.

TECHNOLOGY INFRASTRUCTURE ASSESSMENT

F

TECHNOLOGY INFRASTRUCTURE ASSESSMENT

The Arkansas Tech University Office of Information Systems (OIS) is a forward thinking group determined to take advantage of the resources they have in place. OIS has sound practices and have recently become fully engaged in the planning process while continuing to maintain critical campus services. OIS demonstrates a 'can-do' attitude while "doing more with less" which may come both from working within constrained budgets but also from a resourceful and dedicated staff.

To illustrate this approach, OIS was an early adopter of server virtualization which brings cost savings and improved Data Center infrastructure management including network efficiency. Server virtualization reduces physical rack space requirements allowing OIS to work within a smaller Data Center footprint. Although it should be noted that heat output from multiple blade servers can place demands on Data Center cooling and ventilation. Leveraging its server resources, OIS has deployed a large number of vDesktops (ATU's Virtual Desktop environment) across labs which reduces utility costs (power, cooling), increases security, allows OIS to remotely manage desktops with fewer staff, improves the efficiency of software deployments and licensing, and further lowers overall costs. Thin clients at ATU have a 6 to 8 year refresh cycle compared to the 4 to 5 year refresh requirements for standard windows PCs and Apple Macs. vDesktops also allow users the ability to connect to resources at anytime from anywhere. OIS supports over 550 vDesktops and an even higher number of standard desktops. There is a high demand for computer lab use at ATU.

The Data Center in the Corley Building houses mission critical servers essential to campus operations including IBM POWER 8 servers and Storwize V7000 storage added in 2015 for the Banner environment. As a result of the upgrade, server space and energy consumption were both reduced. A second Data Center is located at the Ozark Campus. A major switching and cabling aggregation point is located at McEver Hall, Crabaugh, and M Street.

The Corley location houses the physical and virtual production servers and core telecommunications devices for the Russellville campus. It is protected by security, a new emergency generator replaced in 2015, a UPS to provide 30-45 minutes of ride through time, a level of cooling that currently provides limited redundancy, and has an aged Halon fire protection system. OIS personnel are concerned about physical space, on-going power requirements, and cooling for the Corley Data Center. They anticipate network needs growing beyond the resources of this space within 3-5 years. Given space constraints, only essential Data Center equipment should be located here. All storage of materials would be best moved outside of this space.

In addition to campus equipment, there is a presence, within dedicated cabinets, of the network provider ARE-ON (Arkansas Research and Education Optical Network) which provides core Internet services supported by CenturyLink. ARE-ON is a not-for-profit consortium of all public degree-granting institutions in Arkansas and other selected higher education organizations. ARE-ON provides a high-speed fiber optic backbone network throughout the State and beyond with 1Gb and 10Gb Ethernet connections to its members. ARE-ON's rich resources include connection to the UAMS Telemedicine Program; access to shared digital resources; connection to experts, researchers, and high end visualization tools using a global toolkit; near unlimited bandwidth to support real time video, distance learning, and collaboration between campuses; and emergency preparedness for both man-made and natural disasters. The Russellville campus is connected to the ARE-ON network via a 10Gb connection. ARE-ON is planning an upgrade to its equipment within the Data Center. While this will make it possible for ATU to upgrade their connection, OIS acknowledges that it has not yet secured funds to provide the equipment necessary for this upgrade to benefit ATU.

The edge routers reside in the Data Center allowing connection to the ARE-ON network. They in turn connect to core switches also housed in the Data Center. Fiber runs from the Data Center to most buildings on campus in Russellville. Within each building, the main telecommunications room houses one or more aggregation switches. These switches in turn connect to edge switches throughout the building. The edge switches are housed in telecommunications rooms throughout the building and connect to the wall outlets accessible to the user. Some edge servers and core equipment is at or nearing end of life. While other network devices are also end of life, failure of the edge routers and core equipment would impact service to much of campus rather than a single department or limited number of users.

Key network hub locations include McEver fiber optic cable plant closet which houses campus network switches and the video surveillance systems for the university, and Crabaugh fiber optic cable plant closet which houses campus network switches and fiber patching for some of the Russellville campus. There is a desire to unify service entry locations however other initiatives have taken precedence so this is yet to be addressed.

The Ozark Campus has a Data Center within the Ozark Technology and Academic Building. It is monitored from the Russellville campus but also has local personnel. Due to a risk of flooding at this location, all electric is provided overhead. This Data Center houses equipment for that campus as well as duplicate equipment allowing it to function as the redundant backup location to Russellville. Given the lack of direct connection of ARE-ON to Ozark, this Data Center does not provide true stand up redundancy but rather allows for recovery only.

As noted on ARE-ON's web site, "Network redundancy is crucial to providing reliable and consistent service. Building and maintaining multiple routes through the ARE-ON backbone and providing multiple connections to members reduces the potential for "hard" outages." Without redundant connectivity between Russellville and Ozark via ARE-ON, ATU remains exposed without a fallback or alternative means of connectivity in the event of an outage.

The newest building at Ozark connects via 10Gb. A 1Gb connection is provided to most other Ozark buildings, however, some connect at 10/100 Mbps (cable plant may not support an increase to 1Gb given antiquated wiring). The older HVAC building connects via wireless only.

At Russellville, the buildings Corley, McEver, Ross Pendergraft, Doc Bryan, Brown, Browning, and Crabaugh are cabled with Single Mode Fiber at 10Gb. Williamson (to bypass Stroupe), Witherspoon and the Ozark campus would benefit from the additional installation of single-mode fiber to buildings. Some buildings have Category 5 cabling which limits services able to use the existing cabling. OIS expressed a desire to create a redundant fiber loop around campus. OIS will make progress on this initiative as other projects allow them to place conduits where needed more cost effectively. Currently, OIS places and terminates the fiber to minimize impact to the budget.

Other satellite locations, such as the Vo-Tech High School, run through a Vlan on an Arkansas Department of Information Systems (DIS) network for a campus connection. Other locations such as Lakepoint connect via leased fiber.

During discovery, the desire to explore "engaging in research" was mentioned. Before data-intensive research can happen on campus, the bandwidth at the core connection must be increased and other infrastructure needs would have to be addressed including storage for big data and audiovisual requirements for data visualization. Consistency across the network in cabling and switching fabric will need to be achieved. ATU has standardized on Cat 6e materials for new construction however the specification is more of a list of materials and a diagram of typical IDF requirements rather than a design specification. Standard data closet specifications and a layout were shared and are in keeping with industry best practices. However, the provided documents would not provide enough detail to be handed to a consultant and result in a consistent design. Updated and formal CSI specifications are needed for IT, Security, and AV that would direct engineers and third-party contractors.

Although switches are proposed to be on a 5-7 year refresh cycle, one document called switches being purchased within the last 8 years "relatively new". This perspective may be based on the level of expectation for new technology purchases. Goal 3 of the ATU 2016 strategic plan calls for developing a financial plan for new buildings, technology and infrastructure and plan for renewal of existing assets in these areas. This need seems to resonate with the individuals we met during the discovery process. When asked what the key concern was, aging infrastructure was mentioned repeatedly.

Currently ATU has an important initiative providing Voice over IP (VoIP) for new buildings and major remodel projects. This benefits campus as the copper backbone required for analog voice is aging. In place of undertaking costly repairs or installation of large amounts of copper, analog voice service is being transitioned to VoIP over the network and will eventually replace the older campus Private Branch Exchange (PBX). OIS has chosen the Cisco Unified Communications (UC) platform as the standard for VoIP which is a proven, scalable and sustainable telephony system offering advanced collaboration features including long distance calling, voicemail to email, conferencing, video calling and cellular phone integration using

APPENDIX

Jabber. Many of the existing buildings lack the needed level of physical infrastructure to move to VoIP. Some telecommunication rooms lack space to house the needed racks. The PoE switches used for VoIP are deeper than previous switches and UPS units are large. Some telecommunication rooms are in unsecure locations and some buildings lack cabling capable of meeting the requirements for VoIP. Staff are overburdened and have been doing the work in-house of deploying VoIP to select departments. Finally, transitioning to VoIP requires a substantial financial investment including handsets, Layer 3 network devices, UPS systems, hardware and software licenses, and warranties. Although most buildings have UPS units, few are sized to provide the one (1) hour backup advisable for this system with its life safety implications. UC has been rolled out to approximately 20% of the campus. Infrastructure is in place to support growth to 5000 units. VoIP phones at ATU are anticipated to have a 5 to 7 year refresh cycle.

The wireless initiative has provided wireless access within the residence halls and academic buildings. Initially, the approach was to provide coverage. This strategy is being refined to prioritize areas based on impact and feasibility. Current wireless coverage may not account for the number and types of devices ATU students carry and use. As BYOD use and expectations continue to increase, there will be ongoing demands placed on the network and network resources. A careful wireless deployment strategy balances density and coverage especially given the diversity of devices and requirements. Device management and security is also necessary. ATU has a long range goal to provide a robust and reliable wireless network that is secure, easy to connect to with access which follows the user across campus both indoors and out. Older IEEE 802.11b and g units are being phased out in favor of 802.11ac to support new generation devices. (An inventory of deployed wireless access points was unavailable at the time of this writing.) Wireless Access Points at ATU are considered to have a 3 to 5 year refresh cycle. A Tech-Guest network is provided for visitors with restricted access to basic Internet usage. Staff, students, and faculty with atu.edu accounts connect via the secure ATU-Wireless network which has connectivity to ATU services. Residential students access the wireless network and ResNet through a control appliance (SafeConnect). OIS is aware that BYOD policies need to continue to be developed balancing access with security. OIS continues to make improvements to bring a better user experience. It should be noted that wireless access requires a wired network behind-the-scenes and may require upgrades to switching hardware. In a recent survey conducted by the planning team, over 90% of student respondents indicated they regularly bring a WiFi-enabled Smart Phone to campus. Over 75% of respondents bring wireless laptops to campus. Television and video entertainment is following a similar path as wired networking with transitions to wireless and use on portable devices. Across many higher education institutions, the cost and labor associated with coaxial copper and its taps, splitters, and modulators are being replaced with network-based IPTV and over-the-network streaming services. At one time, residential housing considered one drop per pillow with a CATV connection. Newer facilities are favoring wireless networking and apps that support video streaming and broadcast for improved capabilities and positive user experience.

Power over Ethernet (PoE), where power is transmitted along with data on one Ethernet cable, is typically used for integration of wireless access points, VoIP phones or IP security cameras. At ATU, deployment of PoE is occurring where and when there are funds. This is impacting the adoption of VoIP and wireless. Supporting a mixture of PoE and non-PoE devices makes planning of port use more critical and difficult.

Systems and network growth along with VoIP and wireless upgrade initiatives, increasing levels of technology due to new collaborative classrooms, and more smart classrooms in general, have put a strain on the tech personnel and their skill sets. It was stated that a lack of personnel has hindered the roll out of VoIP. Infrastructure requirements must also be met to continue to phase in VoIP services. OIS is open to outsourcing some project tasks. However, Russellville is a small town with limited qualified service providers. The University would have to look to contractors in Little Rock which would cause longer response times and higher service calls costs. OIS will continue to support internal staff training and to broaden skills sets.

The OIS Disaster Recovery Plan dated February 15, 2017, identifies major categories of threat to Information Systems such as Power/Air Conditioning Interruption, Fire, Water, Weather and Natural Phenomenon, Sabotage and Interdiction, Loss of ARE-ON Connectivity in its entirety. While ATU is in a low water area, the Data Center has never experienced a flooding event. ATU's Emergency Operations Plan clearly identifies procedures and policies for the concept of operations. Cloud computing provides opportunities for disaster recovery as a 'hot site' but also offers increased storage and computing resources at lower cost. Alternate sourcing models are dependent upon a robust network.

ATU Office of Information Systems (OIS) includes oversight for Administrative Systems (Banner Services, Blackboard Systems, Database Services, Programming and Development), Information Security, Networked Systems (Instructional Technology Services, Enterprise Services, and Network Services), Support Systems (Campus Support Center, Technical Support), and the Technology Center.

It was identified by OIS that the top three challenges for the department are aging infrastructure, instructional technology requirements, and the need for more technical support personnel.

Given the disparity in age and condition between academic buildings at Russellville, it follows that infrastructure to support teaching and learning is inconsistent with older building lagging behind newer facilities. For instance, over 60% of general education credits are taken in the Witherspoon building and at some point, every student will take a class in Witherspoon. Constructed in the 1970s, Witherspoon teaching and learning spaces were described as uncomfortable with heating, cooling and mechanical noise issues, acoustically challenging with many hard surfaces, and problematic with moisture and electrical issues. These issues were confirmed during our walk through. In addition, instructional technology across spaces were found to be outdated and heavily used.

Classrooms observed in most buildings were setup to support didactic or lecture mode instruction with rows of student chairs facing the front attention wall and instructor. The older fixed furniture, including tab arm chairs, provides little opportunity for whole or small-group collaboration in these spaces. As noted by several working groups at ATU, “engaged students are more likely to persist to graduation.” Mobile furniture will help contribute to and support the University’s goal of creating interdisciplinary project-based courses.

Historically, the investment for infrastructure and new equipment has been tied to building construction. As such, there is a lack of consistency across buildings on the Russellville campus and between Russellville and Ozark. It was shared that this initial investment may also not consider on-going maintenance, support, and lifecycle replacement requirements. Currently, there is no program for system wide upgrades. According to OIS, the last major technology upgrade was 7 years ago.

To satisfy the first goal of the 2016 ATU Strategic Plan to provide the best quality educational experience by “providing the learning environment needed for students to flourish and graduate from ATU equipped for a meaningful and satisfying future,” it is essential that classroom technology be up-to-date, appropriate to the academic discipline, and current with newer pedagogies and industry expectations. While ATU has experienced 17 years of continuous enrollment growth, facility infrastructure and technology development has lagged behind leading to a reactive approach to immediate needs and issues.

We noted three types of general purpose classrooms at ATU. The “basic classroom” uses handheld remotes to individually operate each major piece of audiovisual equipment. The basic room may be equipped with a video projector whether on a portable cart or installed in-room with input sources that include an in-room computer and possibly a DVD player. DVDs can also be played through the computer. Program audio is played out from local speakers such as computer speakers or through the projector. A flat panel display or TV may replace the projector. This setup was common at Ozark.

The “enhanced classroom” uses a central in-room controller (Extron MLC) to control power, room volume, and source selection. Instructional technology for the enhanced space includes a ceiling-mounted video projector or wall-mounted short throw projector, manual screen or whiteboard for display, and connected instructor lectern with input sources that include an in-room computer, DVD player, and document camera. Program audio is played out from wall mounted loudspeakers or through the system. The projector is used as the room switcher to select sources. All connectivity is analog using composite audio and video and VGA. We found Extron systems throughout campus although the age of many appeared to exceed the 5 to 7 year ATU recommended refresh cycle. It was unclear if Extron systems are connected to Global Configurator for remote management, asset tracking, and monitoring.

The “advanced classroom” uses an advanced control system (Crestron touch panel) to control basic and enhanced audiovisual functions and more advanced functions as needed. The advanced classroom is built on a digital media switcher platform using digital HDBaseT to convert and distribute AV signals over shielded Category 6 cable. The system electronics are mounted and secured within an instructor lectern (Spectrum) which includes an in-room computer, DVD player, and

APPENDIX

document camera. Wired connections are provided for a walk-in laptop. Wireless connections are also provided via a wireless gateway (Crestron Airmedia) to support BYOD connectivity. A ceiling-mounted pan-tilt-zoom (PTZ) camera is mounted at the rear of the classroom for use in lecture capture. ATU uses Tegrity which is integrated into the Blackboard Learning Management System for this purpose. The camera can also be used for conferencing also through Blackboard. A gooseneck microphone provides voice lift and capture. A wireless lavalier is also available for mobile presentation or to support student presentations. Audio is played back through distributed in-ceiling loudspeakers overhead. The Crestron system has the ability to control dimmable lights, motorized shades, and other building systems, including room scheduling. We found Crestron systems specific to the new Brown building with ancillary flat panel displays on side walls for group break outs and supplementary viewing. The advanced rooms we observed in Brown had raised floors with distributed floor boxes to support reconfiguration and BYOD charging at the point of use. It should be noted that ADA accessibility is an important consideration, especially if a military population is being sought. Technologies to support assistive listening are required to meet federal ADA requirements where voice amplification is provided in large gathering spaces. In addition, wheel chair accessible lecterns, control systems, and annotation are considerations for classroom design. Crestron touch-enabled reservation panels were found outside of classrooms in Brown. The system is clearly tied to the campus scheduling system for display. It was unclear how Crestron Fusion is used for remote management, asset tracking, or monitoring.

A specialized technology-enabled active learning classroom is located in the new Brown building. Multiple pods that include a flat panel display to support distributed viewing of instructor content or local connectivity by student BYODs are provided. Wall-mounted large screen flat panel displays allow student groups to view class-wide instructor presentations. Crestron Digital Media (DM) plays a large role as a matrix environment for switching and distributing sources to displays. Wireless presentation gateways support BYOD sharing. This showcase space is a benchmark for other classrooms on campus. However, this level of distribution and connectivity is not required in each and every classroom.

Technology-enabled informal spaces are lacking including in academic buildings, as part of residential housing, or in the library. These informal spaces, as either group study rooms, informal huddles, hallway niches, or dedicated meeting spaces allow students and faculty to collaborate spontaneously and as needed with their own devices. These equipped spaces may include wireless access, BYOD connectivity and charging, screen sharing to a common large flat panel display, web conferencing capabilities, or presentation and capture to encourage team-based collaboration and building essential communication skills.

Similarly, STEAM (Science, Technology, Engineering, Art, and Math) programs require specialized laboratories that support BYOD interaction. ATU is working on a pilot program that incorporates iPads into certain programs. Specialized labs should provide wireless gateways, BYOD connectivity and charging distributed displays, and capture and conferencing capabilities to further engage students, allow faculty to flip teaching and learning, and encourage students to build evidence based learning using e-portfolios.

We observed digital signage in many academic buildings including in entry ways and in lobbies of residential housing. A home grown system is used with playout from network-based media players mounted behind flat panel displays. The system does not connect to emergency communications or fire alarm system. Touch-enabled wayfinding and directories were available in Brown. This technology would be of benefit elsewhere on campus and ideally could be tied to mobile devices. ATU also provides CATV for students over standard coaxial cable. Many Higher Ed institutions are replacing these legacy systems with IPTV digital-based systems using the wired network to deliver cable television and streaming entertainment. Apps for wireless mobile devices are also available to provide these services.

Specialized laboratory space and current technology are in short supply. No formal ATU-specific instructional technology standards or strategic plans for learning technology have been provided and may not exist. OIS provided an InfoComm guidelines document which is helping ATU to set learning space objectives and benchmarks.

The Infrastructure working group will need to consider standardization of in-classroom AV equipment and facilities across campus as well as priorities for when investment in technology infrastructure will provide the greatest return on investment.

Technology funding should also be on this list. Given the present funding model, it is difficult for OIS to be proactive and to look at new technologies, especially if they are disruptive and create additional requirements in support and training. A portion of the technology budget is received based on enrollment and tied to tuition and fees. A change in state funding or an emergency need will impact instructional technology refreshes. Computers in labs are typically rotated every five (5) years but were held back the last two years given lack of funds. For 2016, the technology budget included \$1.6M in priority items. However, none of these items were supported. Regular and systematic planning with ongoing allocation of resources is needed to bring facilities and technology infrastructure related to teaching and learning up to date.

Instructional Technology Services (ITS) has a small staff currently comprised of two (2) persons that support a large and diverse pool of over 190 classrooms on the Russellville campus and a shared role of an IT staff person at Ozark. Staffing and staff development continue to be a priority for the department. Within the organizational structure, ITS is under Network Systems which is a forward-thinking alignment given the convergence of audiovisual (AV) systems over IT networks. In addition to classroom support, ITS also consults, researches, designs, integrates, configures/programs, maintains and trains staff on use of instructional technology systems including upgrades, renovations, and installation of classroom media systems, instructor stations, lecture capture/recording, conferencing, digital signage, portable setups and audiovisual equipment for lending. Per the ATU web site, ITS also installs and services campus security systems (Emergency Call Station Monitoring & Service and Security Camera Specification & Installation). However, in speaking with the Chief, the Department of Public Safety will be assuming more of these responsibilities. This arrangement will free up ITS to focus on technology that supports teaching and learning. The OIS Director indicated that the teaching spaces in the new Brown building were designed, installed and programmed internally by ITS to save costs. However, going forward, this burden and associated costs should be part of the construction budget and bid to an AV Contractor. ITS can continue to consult and coordinate classroom development for new construction.

APPENDIX

The Arkansas Tech University (ATU) Department of Public Safety (DPS) is a service-oriented agency that exists to provide safety and security services and programs that serve the entire ATU campus. DPS' philosophy of community policing looks to foster positive interactions between police, students, faculty and staff to solve problems related to crime prevention.

Historically, the Office of Information Systems (OIS) was in charge of video surveillance, access control and network-based building security systems. More recently, ATU DPS has assumed oversight for monitoring, maintenance and oversight of these building security systems. Typically, new video surveillance and access control equipment has been part of the scope of new building construction or a major campus renovation project with equipment provided and installed by outside contractors. OIS then performed the programming internally. OIS has already begun training Public Safety personnel to undertake some of the tasks previously provided by OIS such as equipment replacement and repair as well as programming. It was described that "overtime these systems have become a 'hodge-podge' with both old and new equipment, including analog and digital cameras, fixed, pan-tilt-zoom (PTZ), and low light infrared (IR) cameras." The varying types and ages of equipment with different features and requirements makes support more challenging. "There has been no formal overall strategic technology plan for building security," it was explained. Moving forward, DPS is looking to better position the University in safety and security through well-planned infrastructure, systems, services, and policies.

The Russellville campus currently utilizes two separate card access systems but share in using the same ATU campus ID card. The Stanley System serves most of the residence halls and is administered by Residence Life. This card access system is currently deployed on exterior doors of residence halls with the final five buildings slated to receive card access in the coming months. The second card access system is built on Blackboard and is used for academic and other non-housing buildings. This system is supported by DPS. The card access systems allow remote door operations, or alternately, an audit trail with reports for critical spaces. Some of the non-housing buildings with card access include the Corley Data Center and some exterior doors of Brown hall. DPS is charged with recommending access control measures for buildings under design or remodel. It was explained by the Chief that there are also some vulnerabilities which need to be addressed. In addition, neither card access system is tied to video surveillance. DPS currently recommends that where card access is installed on a door, a camera is also installed.

Reportedly, there are over 650 security cameras used on the campus. During our tour, we observed few outdoor cameras with the exception of those on emergency phones. Residence halls and some of the new buildings have surveillance at their primary entrances while other buildings seemed to lack video surveillance. We noted indoor cameras are placed at building entries and where financial transactions occur. However, we were informed that there is no refresh plan in place for cameras but rather the approach has been to replace cameras when they fail. Storage for the surveillance system resides in the McEver FOP. Storage duration is estimated to be between 2 and 4 weeks which is concerning as it would not be uncommon for crimes at a University to be reported or discovered long after this period. The current video management system, Video Insight, lacks some of the features most new systems would offer. Both DPS and OIS are unhappy with the system in place and would like to consider one of many more superior systems. The current system does not allow video recognition or a mobile application which would increase DPS proficiency and mobile access. Historically, a camera failure would not be discovered until a crime transpired and someone went to access the video footage. Per the Chief, reporting and other processes are now being developed to reduce this occurrence.

Parking lots and some other areas are subject to surveillance due to cameras integrated within the 42 outdoor Emergency Call Stations installed in recent years. Talk-a-Phone emergency phones ring to Pope County 911 after the push of the emergency button while a second button, labeled non-emergency, dials DPS. When a call is placed to 911 from these devices, county dispatch contacts campus Public Safety personnel. Flooding does impact operation. Indoor Emergency Call Stations were observed in Brown and it was reported that these stations are marked on maps near the exit of each building. Emergency Call Stations are tested every 3-6 months and it is not uncommon for this testing to discover inoperable call stations for a variety of reasons. The possibility of including Emergency Call Station locations and other security information, such as shelter in place locations, on Wayfinding maps and applications have been discussed but funding has not yet been identified for this initiative. Better campus signage and wayfinding was expressed as a priority and a safety and security concern.

There are many disparate systems for notification. Tucker Coliseum does have a fire alarm capable of providing enunciated messages including in Spanish. It is unknown if this is capable of relaying customized messages or is limited to pre-programmed messages. There are no campus-wide voice notification systems and no horns or strobes on exterior of campus buildings. A siren on campus provides weather related warnings and would activate in the case of an accident at Arkansas Nuclear One.

The new Arkansas Tech Campus Emergency and Outreach Notification (CEON) system is fully integrated with the Blackboard Course Management System. The CEON emergency alert system pushes emergency messages out via text messages, telephone calls, emails and desktop notifications. This opt-in service is tested twice a year. The server resides in the Data Center at Russellville. The major concern with this system is the delay in getting information out. It could take between 7 and 12 minutes to release information which in an emergency can be critical. Blackboard has no support and future plans for their system. More timely notifications would be possible with a move to other platforms such as the Rave Alert mobile security system, it was explained. It was also suggested that these platforms could provide cost savings. DPS also noted that policy changes will soon have the campus community required to opt-out rather than opt-in to receive messages.

Alertus beacons serve to communicate emergency messages in large gathering locations such as the Admissions area in Brown, the cafeteria, and the coliseum where high noise levels occur. These devices provide an audible alert and flashing lights to draw attention to the scrolling message.

There are 42 Talk-a-Phone Blue Light stations. Talk-a-phones must be tested every 3-4 months.

Deployment of panic devices is limited to the business office. Consideration for panic devices should include locker rooms and changing rooms. The use of asset protection, RFID, glass break detectors or motion sensors was not observed or reported. It is understood that the cost of some of these systems may be prohibitive and outweigh their need.

“Shelter in place” continues to be top-of-mind for DPS. Academic buildings do not currently have safe rooms to hold the number of occupants needed should a weather or other emergency require. For instance, it was relayed that Rothwell Hall, is the second most traveled academic building at the Russellville campus but can only shelter in place 60 people at one time.

Students have reported some safety concerns, especially on weekends when campus is lightly populated. Tech has a Safety Transport service, where student cadets from the Department of Public Safety can accompany students, faculty and staff between buildings and parking lots at certain evening hours. The Safety Transport service is not widely used in the manner it is intended. It is possible to adopt a mobile application capable of notifying others when you are walking alone which would aid with such safety concerns.

DPS is proposing a new Communication Center. Currently DPS uses the Pope County Communication Center. Such a center would allow 24/7 emergency monitoring, real time monitoring of safety applications, after hours maintenance dispatch and call center among other benefits to campus. They would like to develop a deferred maintenance plan and increase emergency preparedness.

It is understood that Ozark campus DPS personnel interacts with DPS personnel from Russellville, however, it appears that Ozark functions autonomously. The Ozark campus has deployed card access, video surveillance (indoor and outdoor), Emergency Call Stations, as well as some Alertus devices.



MEETING MINUTES

DATE: June 28, 2017
 PROJECT: Arkansas Tech University MP
 PURPOSE: Workshop 4: Facilities and IT
 LOCATION: OnSite + GTM

ATTENDEES	ORGANIZATION	E-MAIL	PHONE
See Wesley's notes or sign in sheet			

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	Overall
Information Technology	The lower the score in overall - the higher priority overall
Equipment upgrade to take advantage of Aeron upgrade*	1.9375
Upgrade building backbones*	1.375
Finish transition to VoIP before another voice outage	2.875
Outdoor wireless within new and existing gathering spaces	3.8125
Fiber connection between Russellville and Ozark campus to support disaster recovery	2.8125
Complete fiber ring*	3.25
Redundant feed to Russellville campus (Aeron feeds from two directions but they exist in a common pathway*)	2.1875
Provide wireless in all academic buildings	3.8125
Unify distributed service entrances	4.375
* items would benefit reliability of network, position campus for more data intensive programs and potentially increase grant eligibility.	
Security Technology	
Fund alternative alert method (Alertus or increased digital signage) available to visitors to campus	2.125
Increase video surveillance storage duration	3.375
Add panic devices to sensitive areas such as administration and financial aid	1.5625
Create alternative to virtual emergency operations center in case of service outage	2.1875
Addition of card access and cameras to all existing buildings	1.6875
Addition of emergency phones to all existing buildings	2
Helpdesk/Security access from room control within classrooms	2.9375
Remote access control system for campus lockdown	2.75
Audio Visual Technology	
Implementation of BYOD in all classrooms (as in Brown) – Crestron Airmedia or similar wireless gateway	1.375
Technology funding for informal learning spaces (such as equipped group study rooms and huddle spaces for team-based collaboration both in the library and elsewhere on campus)	0.75
Implement standard room controls in all classrooms and a unified and consolidated platform for remote support, and gathering metrics (utilization, asset tracking, etc.) (E.g. Use of Crestron Fusion/Global Viewer)	1.3125
Technology funding for improvement of wifi and connectivity within existing student halls of residence	1.5625
Additional Items (Info Tech)	
Redundant Internet out of Ozark	0.125

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2891 ATU MP _ Wkshop 4 Facilities + IT AV Mtg Notes_TSG_062817_twk

Meeting Date: June 28, 2017
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1. IT PRIORITIES PER ATU

1.1. #1- Add Redundant Internet out of Ozark

- 1.1.1. Ozark is secondary data center. Russellville backs up data to Ozark site. If that connection goes down and something happens at Russellville then the only exercise is a stand up data center – traveling to Ozark to stand up the facilities and do what is needed. No redundancy currently.

1.2. #2 – Upgrade bldg. backbones

- 1.2.1. This would benefit reliability of network, position campus for more data intensive programs and potentially increase grant eligibility.

1.3. #3 – (Close between two initiatives) Upgrade equipment to take advantage of AREON upgrade and fiber connection between Russellville and Ozark campus to support disaster recovery

- 1.3.1. Fiber connection will provide fail-over.
- 1.3.2. Recently, entered into a contract with Ritter under the Rural Health Network Option provides a new fiber link between Russellville and Ozark that's at a Gigabit. Currently at 250Mbps bursting rate. Advantage is considerably cheaper (saving \$60K per year) and provides additional opportunities.
- 1.3.3. Also in conversation with CenturyLink, Pinnacle Services and others about option to get out of Ozark and back either to AERON directly or to Kansas City (or similar) and then connect to Russellville for a redundant link.

1.4. #4 – Add redundant feed to Russellville campus (Aeron feeds from 2 directions but they exist in a common pathway).

- 1.4.1. Not high on list (could be lower than #4) since have alternative emergency communications pieces.
- 1.4.2. An additional redundant feed provides additional access into campus that is not AERON related. Currently ATU has small DSL lines from SuddenLink for emergency communications.
- 1.4.3. Have never had a dual AERON failure.
- 1.4.4. VoIP and email do have alternative backup methods.

1.5. #5 – Finish the transition to VoIP.

- 1.5.1. With current Doc Brown renovation, all student facing organizations will be on VoIP when finish in August. All student services and admin buildings will be on VoIP.
- 1.5.2. Problem is living on Wind Stream PRI and have had 2 major outages last year. Wind Stream does not own these links but negotiates them and the campus spent 5 days without phone service.
- 1.5.3. Currently in conversations to move faster on SIP trunking for more channels, redundancy thru internet and capacity. Talking with Ritter,

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CenturyLink and others. This will be cheaper than independent PRIs.

1.6. #6 – Complete the campus fiber ring.

- 1.6.1. Dramatically impacted by master plan depending on location of new buildings and its impact to current ring and direction or expanding of the ring in a different way. Need to have a conversation about fiber ring and moving or relocating fiber based on changes to the campus foot print. ATU currently has conduit running to public works at El Paso and is in good shape for providing services to campus.

1.7. #7 – (tied) Provide Outdoor Wireless and Provide Wireless in all academic buildings.

- 1.7.1. The President when came on board saw dorm wireless as a priority and committed \$1.4M to putting AC wireless in all dorms. Do need to continue to plan for the future since ATU will need to replace/upgrade equipment at some point in time.
- 1.7.2. Problem is while AC wireless supports high speeds and provides good connectivity, students walk to an academic building and find speeds and connectivity that is less than adequate. Upgrades are needed in academic buildings that will result in a consistent positive user experience.
- 1.7.3. Need to address green spaces. As produce parking spaces for student gathering include wireless connectivity such as in the quad and how to mesh out the network to provide better wireless.
- 1.7.4. Greater density and better connectivity are needed.

1.8. #8 – Unified Distributed Service entrances.

- 1.8.1. Electricity was being addressed and how electricity is provided into the grid.
- 1.8.2. Voice come into one place. Network connections come into one place rather than distributed. All services should be at one location rather than multiple locations across campus where the different services enter (which is how ATU is now).
- 1.8.3. Need new data demarc for data. Current demarc is inadequate. Way laid out now is difficult to unify. Look at emergency scenarios. Both ends of AERON come into Corley now. Need additional connections to AREON such as at cell tower given so many services and choices. Bring ½ of the AREON path into Corely from this other pathway. Need about \$250K to get this done.

1.9. #9 – Emergency Op Center needed.

- 1.9.1. Need a hardened facility with its own generator and own equipment for emergency communications. Should address for new construction. Bottom of new STEM building?

2. SE PRIORITIES PER ATU

2.1. #1 – Add panic devices to sensitive areas.

Meeting Date: June 28, 2017
 Project: Arkansas Tech University MP
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- 2.1.1. Only option now is to pick-up the phone. Add in Student Accounts, HR, Financial Aid – places where potential for problem. Chief is also looking into these. Moving to new security app and off of Blackboard Connect with RAID mobile w/guardian app with panic button on it for individual student devices. App is to be used solely for emergency purposes. Implemented now and tested in fall.
- 2.2. **#2 – Add more card access and cameras.**
 - 2.2.1. Camera goes with door access unit as they are added. Close to 20+ adds over the summer. This puts pressure on the current security system. ATU has over 600 cameras that they are monitoring. System is growing. Significant system for how PD will monitor – may need review. Transferred to campus police to take monitoring and recording from IT. IT will continue to service.
- 2.3. **#3 – Add emergency phones.**
 - 2.3.1. High priority when VoIP completed. Analog based emergency phones are not dependent on the network to operate. Must have a minimum of (1) analog based emergency phone per building. Could be (1) per floor similar to Brown Bldg. Minimum (1) per bldg. due to cost.
- 2.4. **#4 – Fund alternate methods for emergency alerts such as Alertus and digital signage.**
 - 2.4.1. Rave has direct connectivity into Alertus. Alertus has connections into digital signage and desktops. Alertus server in place. Every bldg has at least (1) Flat Panel Display.
 - 2.4.2. Eventually, could have 3 buttons - 1 active shooter, 1 tornado, 1 lock down. Split decision to alert campus and tie them together.
 - 2.4.3. Lock down procedures still being worked out. Must address every door. Can't prop open doors. Otherwise lock down doesn't work.
- 2.5. **#6. Emergency Operation Ctr (EOC) put in place.**
 - 2.5.1. ATU has created a mobile operations center with trailer, generator, radios, air cards etc. developed this summer. Demonstrate this summer.
- 2.6. **#6. Every classroom should have Helpdesk/Security Access**
 - 2.6.1. Can be via VoIP
 - 2.6.2. Jabber on computer or inexpensive phone on desk for auto dial to Helpdesk or PD. Alternate alert via AV room control system (two-way).
- 2.7. **#7. Remote access control for campus lock down.**
 - 2.7.1. Long term consideration. Many issues to overcome. May not be feasible.
- 2.8. **#8. Increase storage for the Security System.**
 - 2.8.1. Currently at 30 days of storage capacity which is adequate. As add cameras there is an on-going need to keep up and add storage. Students tend to not report a crime for several wks and delay. If

Meeting Date: June 28, 2017
 Project: Arkansas Tech University MP
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 Location: OnSite + GTM



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there were more storage, campus would be more efficient to look back in time.

- 2.8.2. None of the security cameras are less than 1.3 Megapixel and some on 5 MP which makes a difference on storage and recording time. Public safety can determine which cameras should have finer grain capabilities which will impact storage.

3. AV PRIORITIES PER ATU

3.1. #1 – Add informal learning spaces.

- 3.1.1. Set classrooms up in collaborative and flexible and redesignable way including areas outside of classroom.

3.2. #2 - Implement standardized room control. Crestron should be the model.

- 3.2.1. Will require a transition from Extron.

3.3. #3 – Implement BYOD in classrooms - Wireless presentation

- 3.3.1. iPad initiatives and tests. Allowing to connect via wireless to network and AV.
- 3.3.2. In classrooms, group study rooms/huddle rooms, conference/meeting rooms.
- 3.3.3. Looking at AirMedia for sharing screens from devices.

3.4. #4 - Address technology funding for new equipment and refresh.

- 3.4.1. Will funding be addressed by the MP? Once equipment is in place, need to consider on-going maintenance and eventual refresh. These categories should be budgeted as part of OpEx and CapEx.

4. General – What additional priorities are there for upgrades, adds, changes, new, innovation?

- 4.1. The list was intended to guide but not be the end all. Are there other initiatives and priorities? Additional items? Think long term.
- 4.2. Would like to take more advantage of AERON. DMZ as separate network for research network is needed. Undergrad and graduate opportunities. AREON has own DMZ rides on top of AREON. Grant opp to make happen.
- 4.3. Address data center needs. Addition built onto Corely to create new data ctr - physical space available. Generator in place. Facilities are at this location. Physical space is available. AREON already there. Corely - data ctr 11 yrs old and upgraded twice. As academic spaces move should Corely become less academic and more service oriented – central home for IT.
- 4.4. Dr. Gunther. Initiative toward creating an Innovation Hub and exploring new technologies. STEM bldg. would be a good place to do this. Remote learning, 3D production and machining. Holograms, avatars, VR. Backbone must support the additional bandwidth. Scenario based

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- training with an interactive approach. Facilities must have a specialized studio for VR. Video cameras that read the room. A collaborative room to produce VR.
- 4.5. Gaming and app development. 3D rendering for games has heavy server load can impact data center and bandwidth if transfer data to other institutions. Currently in roche house? When produce a real rendering farm bandwidth will need to be adjusted.
 - 4.6. Autonomous vehicle program.
 - 4.7. Data recovery ctr. How long stay in Ozark? Ozark was an off shoot decision. Co-location is being discussed and moving DR equipment out of Ozark and from the storm path such as to UCA. Have 2 more years on equipment in Ozark. Change to hosted solution or co-lo? Given within 2 year decision mark would rank this as high as building backbones initiative.
 - 4.8. Long term vision for data center. Move from first floor. A Two story addition toward parking lot onto Corely with facilities there. Data center on 2nd floor. 1st floor will be new tech area and assemble scattered IT resources there. Will then be more homogeneous. Preference to add on to Corely is less expensive. Emergency operations require generator and could service data center. Emergency op will have generator anyway so could be servicing data ctr as well.
 - 4.9. Issues with available space for operational parts of IT. Currently 2-300 computers at time, need locations to receive and inventory, assemble and distribute. Have terrible luck finding on campus solutions so need to go off campus in rented facilities. On campus internal computer operations are needed. Space is tight. Security is an issue for insurance purposes.
 - 4.10. Budget advisory - gateway ctr introduced to be used as a distribution ctr and visitors info ctr. Consider putting on campus printing ctr. could be there if central located. High end copying, costs can be contained, service bureau. Post office located there, fed ex facilities, etc. A communications ctr.
 - 4.11. PD is working on establish antenna on library w/single mode fiber to where they need to be. Radio communications and reduce # of towers. Current antenna on library but one with more power for new AWIN (Arkansas wireless information network) radio systems.
 - 4.12. cable tv plant. Why continuing to run this route vs transmitting over the network? Create head end for entertainment? Bill for cable tv is substantial with a lot of physical cable. IPTV offers lower cost. (pass thru to students and most depts want cable tv). Every time request made for TV, need to add more cable. A lot of physical cable. Internet based choices. Still coax and need to run for each add. No

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measurement of how many are watching cable but can tell how much data thru internet based services. Why not use \$ to distribute own content via IPTV.

- 4.13. Monitoring for facilities are needed. Tie into central system for efficient monitoring and there is a need for technical support.
- 4.14. Campus - bring your own device but what about bring your own service? Verizon bring micro cells onto campus. Don't want one provider better than another. They want their services on campus. Negotiate head end with the providers and campus does microcells themselves. Cell faster than wifi is trend. Allow outside providers to bring microcells. In future, students may be less reliant on campus services. Have one tower only. Areas where multiple towers more feasible but more congested. Microcells need same infrastructure and bandwidth.

5. Adjourn

The above minutes constitute our understanding of pertinent issues discussed. Any additions or corrections to these minutes shall be submitted in writing to Todd Kreps within ten days or they shall stand as submitted.

Sincerely,

THE SEXTANT GROUP, INC.

Todd Kreps
Project Consultant
tkreps@thesextantgroup.com

cc: file

UTILITIES INFRASTRUCTURE SUMMARY

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ARKANSAS TECH MASTER PLAN UTILITIES SUMMARY

The following is a review of existing and future use of infrastructure for the campus at Arkansas Tech University. Each section will be discussed separately.

WATER MAINS

Existing water capacity is in good shape today. However, the existing main that bisects the campus needs to be replaced with a new updated main. That line currently runs north-south through the core of the campus where a future pedestrian plaza will be developed. As each new project develops along this path the section of line within the project zone needs to be replaced with a new 8" line. This will allow for replacement costs to be spread out over time and not create disruption across the campus all at one time. The replacement line can also be placed in a new location so as to not adversely impact the new pedestrian plaza.

SANITARY SEWER MAINS

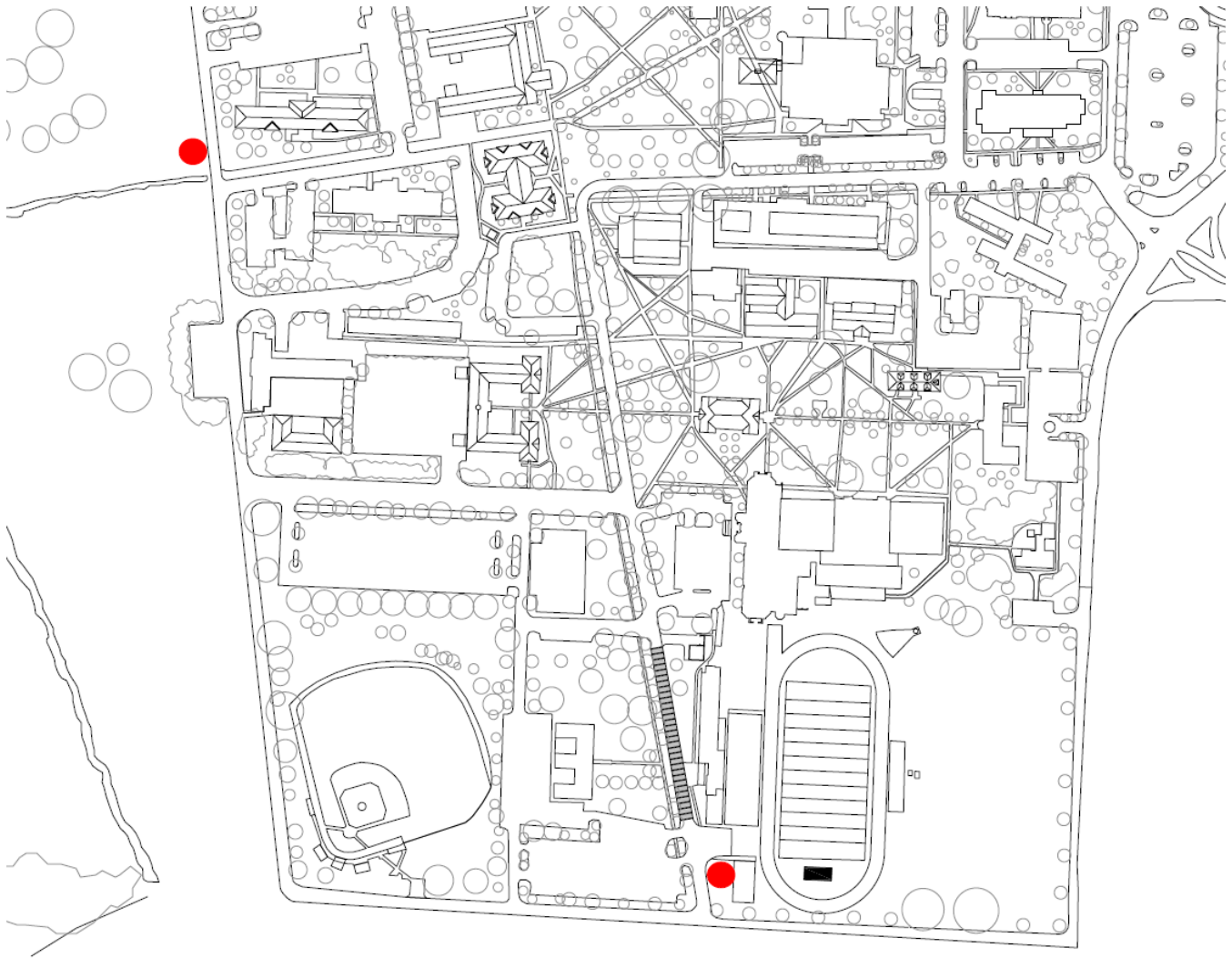
Like the water capacity, the sanitary system is in a good condition. It is not anticipated that there are any expansion needs. The main trunk line that bisects the campus is currently being upgraded through a city project by means of a pipe burst method. This will effectively replace the current main with a new main for future use without disruption to the campus. As each campus project moves forward the extension of mains through those projects areas should be reviewed to help accommodate future projects.

GAS SERVICE

Gas service to the campus is accomplished by means of a master meter to the campus. Capacity is currently not an issue but use needs to be reviewed with each new project and conservation should be obtained where and when possible. The master meter gets a bulk rate for the campus that is very beneficial to the university and we cannot exceed capacity for the master meter without causing adverse impacts to the university. This meter is fixed and cannot be increased without losing the discounted rate.

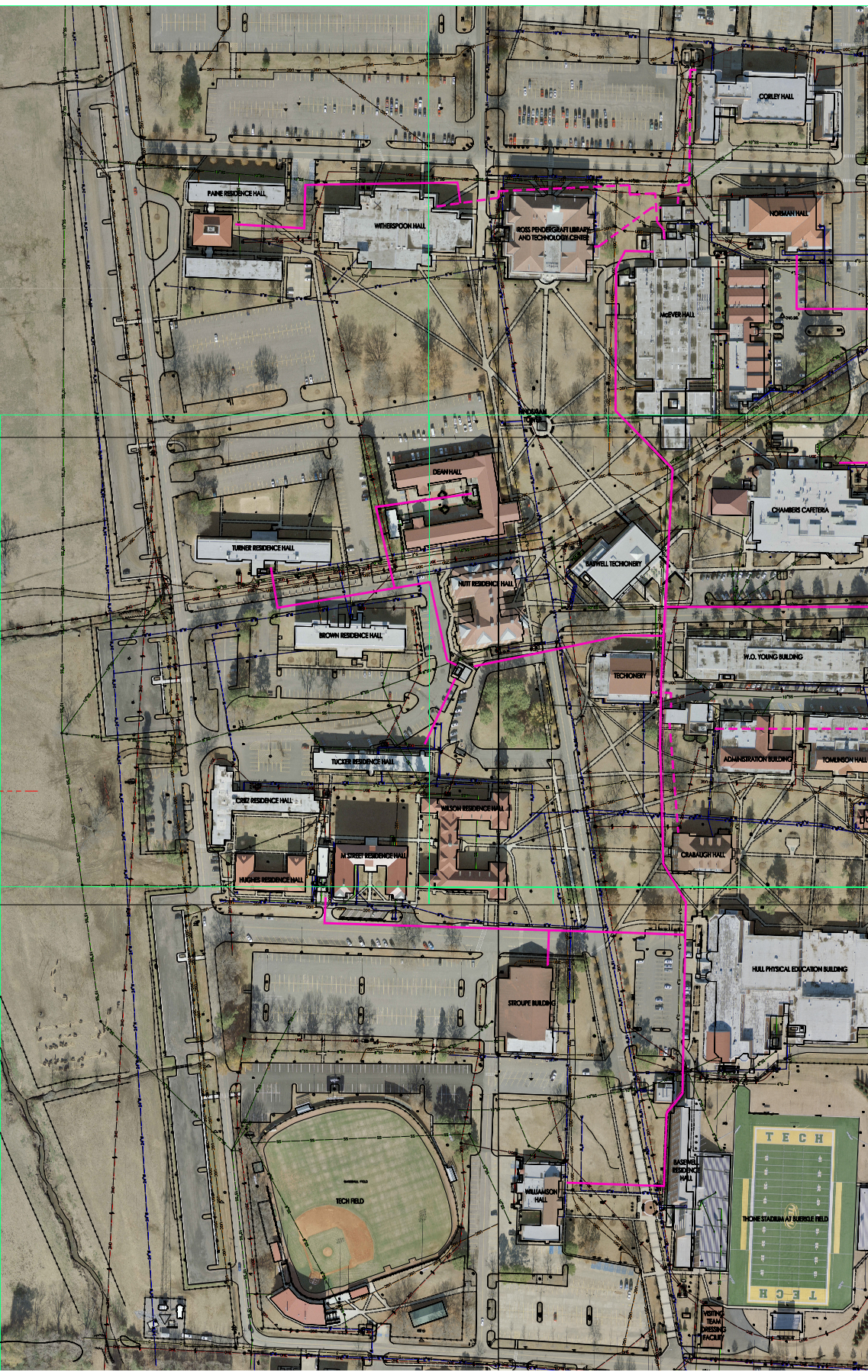
DRAINAGE SYSTEM

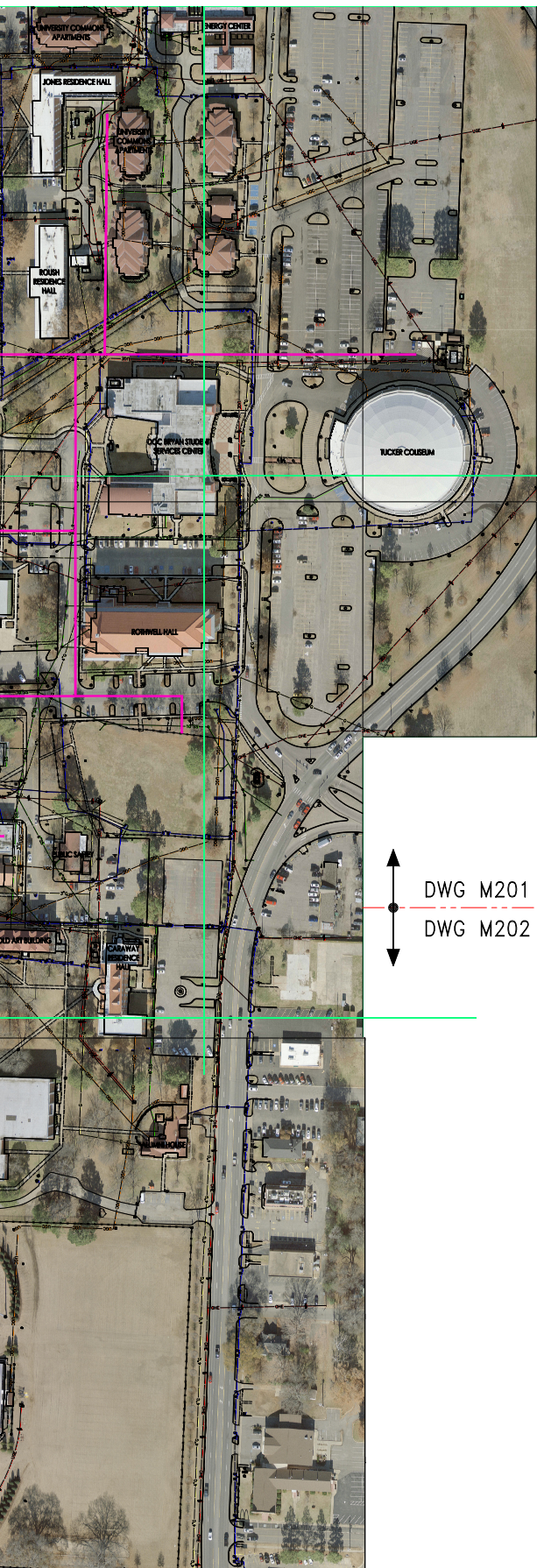
Existing drainage systems through the campus are adequate but don't have excessive capacity. The lines can accommodate smaller storm events but cause localized flooding once larger events take place. The City of Russellville has a drainage improvements project planned through AHTD but doesn't have the matching funds to let it move forward. There is a flood zone west of the main campus that can be utilized but only after addressing grades in order to use the land. As a practical matter the campus should utilize detention storage methods to help minimize the impacts of new projects within the campus. Additionally, low impact design methods need to be implemented not only to help with the storm runoff but also creating good ecological results as well.



Electrical Service Entrances

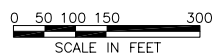
DWG M201
DWG M202





LEGEND

- EXISTING UNDERGROUND CHILLED WATER PIPING
- PROPOSED NEW UNDERGROUND CHILLED WATER PIPING



**ARKANSAS TECH
UNIVERSITY**
Russellville, Arkansas

WM Group
WM Group Services, LLC

Two Penn Plaza, Suite 552
New York, New York 10121



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NO.	DATE	REVISION

PROJECT
**ATU – RE-ENGINEERING
CHW SYSTEM**

DRAWING TITLE
**CHILLED WATER SITE
DISTRIBUTION –
PROPOSED**

SCALE	DATE 7/12/17	DRAWN
JOB No. / FILENAME 117-117		CHECKED

DRAWING NUMBER

M200

IMPLEMENTATION & COST ESTIMATE

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IMPLEMENTATION & COST ESTIMATE

COST ESTIMATING

With this master plan, Tech is strategically thinking through where it needs to invest capital expenditures over our planning horizon. Its targeted efforts to address key building, grounds and infrastructure projects are being considered comprehensively rather than independently, so that the university is better positioned to make sure every dollar invested in the future of Arkansas Tech aligns with the mission, vision and strategic plan to ensure the success of its students. - Dr. Bowen, President Arkansas Tech University

PRIORITY PROJECT COST ESTIMATE TABLE

Ref.	Project	GSF Demo.	GSF Reno.	GSF New Build	Floors	Construction Type	Construction Cost Per SQF (in todays cost - 2017)	Assumed Project Duration (Months)	Construction Cost Escalated to Mid Point (@ 4% per year)	Soft Cost + Contingency Assumption (25%)	Total Project Cost
P1	Stroupe Demolition and site remediation	23,470			n/a	n/a	\$ 12.00	2	\$ 283,518	1	\$ 283,518
P2	McEver Short Term Maintenance (fume hoods)		n/a		n/a	Install hood purchased by faculty		n/a	n/a	1.25	n/a
P3	O street and Campus Entrance			306,000	n/a	Potential for partnership with City	\$ 20.00	6	\$ 6,242,400	1.1	\$ 6,866,640
P4	Brown Academic Reconfiguration		10,000		1	Renovation of existing	\$ 55.00	3	\$ 944,350	1.25	\$ 1,180,438
P5	STEM 1 (includes, Engineering labs, Agriculture labs. and Skilled Trades labs)			91,500	3	Steel frame, brick and precast, veneer, concrete shingle roof.	\$ 475.00	12	\$ 45,201,000	1.25	\$ 56,501,250
P6	Performing Arts Center			77,250	2	Steel frame, brick and precast, veneer, concrete shingle roof.	\$ 260.00	12	\$ 20,888,400	1.25	\$ 26,110,500
P7	Purchase/lease additional farm land			n/a	n/a	n/a	n/a	n/a	n/a	1	n/a
P8	Student Union + Rec Combined	30,005		108,000	3, 2	Steel frame, brick and precast, veneer, concrete shingle roof.	\$ 275.00	24	\$ 32,436,060	1.25	\$ 40,545,075
P9	New Housing El Paso (P3)			18,600	3	Wood frame, shingle roof residential structures	\$ 180.00	12	\$ 3,481,920	1.25	\$ 4,352,400
P10	Police Facility on El Paso		7,000			Renovation of existing (does not include purchase cost)	\$ 75.00	3	\$ 530,250	1.25	\$ 662,813
P11	New Housing (Roush Site)	19,092		75,000	6	Steel frame + concrete basement / stairwells. Brick veneer, Sprinklered	\$ 275.00	12	\$ 21,679,104	1.25	\$ 27,098,880
P12	Ozark Academic/Conference			35,876	2	Steel frame, brick and precast, veneer, concrete shingle roof	\$ 275.00	12	\$ 10,260,536	1.25	\$ 12,825,670
P13	Ozark Demolish Workshop Building and site remediation	23,404			1	n/a	\$ 12.00	1	\$ 281,784	1	\$ 281,784

LANDSCAPE COST ESTIMATING

Although the exact extent of landscape improvements is not currently known for the range of potential projects identified within the master plan consideration should be given to where lower and higher range landscape improvements are needed. It is recommended that opportunities to share costs between projects types are used to maximize the value of investments in the campus. For example, utility line upgrades provide an opportunity to design and implement new ADA accessible side-walks and provision for maintenance access to utility loops. The up-front cost may be greater but the benefit to the campus in the long term would be significantly higher.

Landscape improvements/circulation:

\$1,200 - \$4,500/LF

(Includes demolition)

Lower range includes:

- Mix of street & pedestrian lighting
- Concrete pedestrian zone
- Grass amenity zone
- Trees + limited landscaping
- Limited catalog furniture

Higher range includes:

- Wider pedestrian zone
- Green infrastructure
- Structural Soils
- Custom lighting
- Bollards
- Raised planters & tree grates
- Brick or granite pavement
- Trees + landscaping + annual planting
- Custom furniture
- Custom signage
- Public art

Landscape improvements around buildings:

\$50/SF - \$180/SF

(Includes demo)

Lower range includes:

- Basic planting beds
- Concrete sidewalk
- Grass amenity zones
- Limited trees
- Standard/limited lighting

Higher range includes:

- Wider pedestrian zones
- Higher level of planting zones and trees
- Green infrastructure
- Specialty paving
- Efficient Lighting
- Site furniture
- Stairs and railing
- Retaining walls

New Parking:

\$15/SF - \$35/SF

(Includes demo)

Lower range includes:

- Grass areas
- Limited lighting
- No planting/trees
- Asphalt paving
- Curbs

Higher range includes:

- Specialty paving (permeable paving for parking bays)
- Higher level of planting zones and trees (rainwater gardens)
- Green infrastructure
- Efficient Lighting
- Directional signage

Other:

- Amphitheater: \$2M to \$5M depending on size and quality of space

APPENDIX

TECHNOLOGY INFRASTRUCTURE COST ESTIMATING

IT Priorities

Project	Detail	unit cost
Redundant Internet - Ozark	10-20K varies with bandwidth	\$ 15,000
Building Backbone Upgrades	fiber upgrade from MM to SM	\$ 30,000
	up graded aggregation switch	\$ 10,000
	upgrade of core device in data center	\$ 150,000
	redundant device	\$ 150,000
Upgrade equipment to take advantage of AREON upgrade	Router upgrade	\$ 110,000
	firewall upgrade (100k-300k)	\$ 200,000
fiber connection between Russellville and Ozark campus to support disaster recovery	\$10 to \$20 K per month plus installation costs	\$ 15,000
Redundant feed to Russellville campus		\$ 250,000
Finish the transition to VoIP		\$ 2,000,000
Complete the campus fiber ring	If done in conjunction with #2 above, could add \$15-20k per segment	\$ 17,500
Outdoor Wireless (Per Green Space)	Outdoor adjacent to building (4 AP per bldg)	\$ 10,000
	Outdoor away from distance (depends on many factors)	\$ 17,500
Wireless in all academic buildings		\$ 1.70
Unified Distributed Service entrances	extending existing voice would be significant, new duct bank, extending high pair count copper	n/a
Emergency Operations Center	Standalone	\$ 4,000,000
	Shared	\$ 2,500,000

Security Priorities

Project	Detail	unit cost
Panic Devices		\$ 1,000
Card Access and Cameras (Per Door)	Card Access	\$ 2,000
	Camera	\$ 2,000
Emergency Phone	Indoor	\$ 4,000
	Outdoor	\$ 17,500
Emergency Alert	Alertus Device	\$ 1,300
	Software	\$ 5,500
Emergency Operations Center	see above in IT section	
Helpdesk / Security Access in all Classrooms	VoIP soft phone client licensing cost	\$ 100
	VoIP handset (if needed)\$300-600	\$ 450
Remote access control for campus lock down	if building access is controlled per above	\$ 20,000
Storage Increase for Security System		\$ 12,000

AV Priorities

Project	Detail	unit cost
Informal Learning Spaces	5 person pod (5 per room)	\$ 5,200
	Projector	\$ 3,000
	Screen	\$ 3,000
Standardized Room Control	Creston Model	n/a
BYOD in Classroom		\$ 1,700
AV equipment refresh	3-5 year increments	n/a



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