Sustainability Master Planning from All Perspectives

18 September 2019
Howdy!

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Two Sustainability Plans – Macro and Micro Lenses
Sustainability’s Legacy at Texas A&M
Sustainability Defined at Texas A&M

Texas A&M University defines sustainability as the efficient, deliberate, and responsible preservation of environmental, social, and economic resources to protect our earth for future generations of Texas Aggie's, the Texas A&M University community, and beyond.
Springboard - 2010 Sustainability Master Plan

• Entirely verbal
• Identifies the “Sustainability 12”
• Charts 25 Goals and Targets and 113 Actions
• Approximately 18% of actions have been completed
• Approximately 42% of actions are ongoing
Planning Document Building Blocks

2012 Biennial Report

2012 UES Master Plan

2013 State of Diversity Report

2014 Biennial Report

2015 Bicycle District Strategic Plan

2016 STARS Report

2016 State of Diversity Report
2017 Campus Master Plan

Focus Areas:

• Campus Development Plan
• Mobility and Safety
• **Sustainability and Wellness**
• Campus Guidelines
• Heritage Conservation
• Wayfinding and Signage
A Comprehensive Approach

05
SUSTAINABILITY AND WELLNESS

A stand-alone chapter & Embedded across other focus areas
Sustainability Themes in the 2017 CMP

**Operational Matters**
- Energy Use and Greenhouse Gas Emissions
- Campus Mobility
- Built Environment and Site Design
- Waste Management
- Social Sustainability
- Administrative Support
- Pedagogy, Research, and Innovation

**Non-Operational Matters**
- Energy Use and Greenhouse Gas Emissions
- Campus Mobility
- Built Environment and Site Design
- Waste Management
- Social Sustainability
- Administrative Support
- Pedagogy, Research, and Innovation

**Included in the Campus Master Plan Update within multiple focus areas**
- Supported by the Campus Master Plan Update
- Reinforced by the Campus Master Plan
Texas A&M’s
2018 Sustainability Master Plan
Goal #1: From Siloed to Woven

- PLANET
- PEOPLE
- PAYBACK

[Diagram showing interconnected blocks for PLANET, PEOPLE, PAYBACK, and a composite structure]
Goal #2: Advance TAMU’s Sustainability Tracking, Assessment & Rating System (STARS) Rating

as of June 2018

Goal #3: Engage the UN SDGs

Aggies think the 5 most important sustainability-related issues for Texas A&M are:

- Conserving Energy
- Conserving Water
- Reducing Waste
- Using Renewable Energy
- Recycling

Aggies think the 5 most important sustainability-related issues for our world are:

- Access to Clean Water
- Access to Clean Air
- Public Health
- Food Supply
- Access to Quality Education
Plan Overview

4 Focus Areas

9 Themes
16 Evergreen Goals
47 Targets
162 Actions
Plan Timeline: 2018 - 2038

- **Short Term Targets**
  - 2018
  - 2023

- **Medium Term Targets**
  - 2024

- **Long Term Targets**
  - 2028
  - 2029
Sustainability Themes

Physical Environment
- Energy Use and GHG Emissions
- Campus Mobility
- Stormwater Management
- Built Environment and Site Design

Institutional Effort
- Administrative Support
- Education, Outreach, and Engagement
- Pedagogy, Research, and Innovation
- Social Sustainability
- Waste Management
Achieve a 50% reduction in greenhouse gas emissions per weighted campus user by 2030; achieve net-zero emissions by 2050.

Texas A&M University is committed to achieving net-zero greenhouse gas emissions per weighted campus user by 2050.

**Goal 1: Decrease campus energy use intensity.**

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>Target</th>
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<td>192</td>
<td>182</td>
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Energy use intensity (EUI) is a measure of how much energy is consumed per square foot in campus buildings each year. Cutting down on energy use intensity requires efficient buildings and changes in Aggie behavior that use energy.

**How will we do it?**

Campus buildings can decrease energy use by:
- Increasing effectiveness of air-side heat recovery.
- Updating building automation systems.
- Communicating system feedback to end users.
- Upgrading lab fume hoods.
- Meaningfully integrating exterior shading solutions, such as those provided by trees or architectural features.

Aggies can cut energy use by:
- Turning off the lights when exiting a room.
- Turning off and unplugging devices prior to extended campus breaks.

**Campus Gross Square Footage vs. Energy Consumption**

While campus square footage is projected to increase 23% between fiscal year 2015 and 2019, energy consumption is predicted to increase 15% over the same period. Energy savings can be attributed to improvements in the Central Heating and Power Plant, building envelope efficiency upgrades, and improved energy commissioning practices.
Achieve a 50% reduction in greenhouse gas emissions per weighted campus user by 2030; achieve net-zero greenhouse gas emissions per weighted campus user by 2050.

Texas A&M University is committed to achieving net-zero greenhouse gas emissions per weighted campus user by 2050.

Plan Layout

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- Communicating system feedback to end users.
- Upgrading laboratory fume hoods.
- Meaningfully integrating energy saving solutions, such as those provided by fume or architectural firms.

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Evergreen Goals
Achieve a 50% reduction in greenhouse gas emissions per weighted campus user by 2030; achieve net-zero emissions by 2050.

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**O2.1: Decrease campus energy use intensity.**

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- Increasing effectiveness of air-side heat recovery
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**Measurable Targets**

Energy use intensity (EUI) is a measure of how much energy is consumed per square foot in campus buildings each year. Cutting down on energy use intensity requires efficient buildings and changes in Aggie behaviors that use energy.

**Campus Gross Square Footage vs. Energy Consumption**

While campus square footage is projected to increase 15% between fiscal years 2017 and 2035, energy consumption is projected to decrease 15% over the same period. Campus energy use is driven by different types of buildings on campus that require energy for heating and cooling. Our buildings are well-insulated and covered with efficient and energy-efficient energy management practices.

**Campus Gross Square Footage vs. Energy Consumption**

- Total Campus (Calibrated EUI)
- Total Campus (Not Calibrated EUI)
Plan Layout

Achieve a 50% reduction in greenhouse gas emissions per weighted campus user by 2030; achieve net-zero emissions by 2050.

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How will we do it?
Campus buildings can decrease energy use by:
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Actions
Plan at a Glance

## BUILT ENVIRONMENT AND SITE DESIGN (CONTINUED)

<table>
<thead>
<tr>
<th>No.</th>
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<th>Key Players</th>
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<td>05-2</td>
<td>Develop public, civic access (interior or exterior) to represent a broader cross-section of the Apple community.</td>
<td><em>The identity of a new developer to craft a sense of place within the downtown area.</em></td>
<td>Office of the Chancellor/Community Development</td>
</tr>
<tr>
<td>05-3</td>
<td>Increase pedestrian water consumption within on-campus residences.</td>
<td><em>Upgrade sustainable practices to increase water efficiency.</em></td>
<td>Department of Residence Life</td>
</tr>
<tr>
<td>05-5</td>
<td>Increase the use of non-potable water for irrigation.</td>
<td><em>Decrease the amount of water used.</em></td>
<td>Department of Sustainability</td>
</tr>
<tr>
<td>05-6</td>
<td>Increase the percentage of campus land managed with Integrated Pest Management (IPM) strategies.</td>
<td><em>Encourage sustainable practices.</em></td>
<td>Department of Sustainability</td>
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</table>

## WASTE MANAGEMENT

<table>
<thead>
<tr>
<th>No.</th>
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<th>Actions</th>
<th>Key Players</th>
</tr>
</thead>
<tbody>
<tr>
<td>06-1</td>
<td>Achieve zero waste to landfill by 2050.</td>
<td><em>Increase zero-waste initiatives.</em></td>
<td>Facilities Management</td>
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*Note: The above plan is a summary of the 2018 Sustainability Master Plan.*
Texas A&M’s
2018 Residence Life Sustainability Plan
Sustainability Themes

Physical Environment
- Energy Use and GHG Emissions
- Campus Mobility
- Stormwater Management
- Built Environment and Site Design

Institutional Effort
- Administrative Support
- Education, Outreach, and Engagement
- Pedagogy, Research, and Innovation
- Social Sustainability
- Waste Management
Four Deliverables

Document

Poster Series

Brochure

Utility Dashboard
Goal #1: Prioritize Future Efforts

All DRL Facilities – EUI FY 2017

EUI 174

EUI 89
Goal #2a: Celebrate Existing Achievements

On-campus residents used 499,478,919 KBTU of energy heating, cooling, and keeping the lights on in 2017. That's the same amount of energy that's required to keep 8,580 average cars on the road for a year.

Did You Know?
Your room and board expenses include payments for utilities. The Department of Residence Life will have upgraded heating, ventilation, and air conditioning systems across most on-campus residence halls and apartments by 2022. These newer systems help keep energy consumption down and stabilize room and board expenses year to year.

How can you help conserve energy?
- Turn off the lights and devices when you leave a room.
- Set your thermostat when you’re out for extended periods of time.
- Unplug devices when you know for break.
- Run full loads of laundry in cold water.
- Close the blinds when it’s not outside to keep the sun out.
- Use LED bulbs in any lamps you bring into your room.

For more information visit: HTTP://RESLIFE.TAMU.EDU/LIVING/SUSTAINABILITY

On-campus residents use 384.5 million gallons of water every 4 years. That's enough water to fill Kyle Field.

How can you help conserve water?
- Low-Flow Water Fixtures: Most on-campus residence halls and apartments have low-flow water using fixtures to minimize the consumption of potable water.
- Cutting down showers to 5 minutes or less.
- Only doing full loads of laundry.
- Turning off the water while brushing your teeth.

For more information visit: HTTP://RESLIFE.TAMU.EDU/LIVING/SUSTAINABILITY
Goal #2b: Increase Resident Knowledge
Goal #3: Identify Opportunities for Residence Life to Advance Texas A&M

CAMPUS TARGET: Decrease campus EUI.

192 183 174

Today Short Term Medium Term

Energy Use Intensity (kBTU / SF / year)

136

EUI of Residence Halls and Apartments in FY 2017
(excluding buildings under construction and common buildings in FY 2017)
02 SOCIAL SUSTAINABILITY

A campus environment is comprised of both built elements and social constructs in which people live their daily lives. Residence Life has a unique opportunity to promote the importance of wellness, engagement, service, equity, and inclusion to its community of residents.

Sustainability at Texas A&M focuses on the connections between people, the economy, and the environment and how those connections work together to achieve long-term prosperity and continued quality of life. Social Sustainability is an equally weighted theme to environmental and economic aspects of sustainability. In this integrated model, Social Sustainability is not an isolated subject, but instead a thread that ties Aggies into all sustainability initiatives. To this end, Social Sustainability topics are woven throughout this document as well as centralized in this chapter. The Social Sustainability icon below highlights content in other chapters that connects to the recommendations within this topic.

Social Sustainability in this Document

Recommendations associated with Social Sustainability are marked with the icon below to connect them to the ideas of this chapter.

Social Sustainability Icon

02.1: Increase connectivity between on-campus housing and recreation facilities.

Students reported the importance of living active and healthy lifestyles and that space for physical and mental health activities is highly important. All six focus groups expressed concern about the connection between on-campus housing neighborhoods and the Student Recreation Center. Student concerns focused on the remoteness of the Student Recreation Center to all of the housing neighborhoods, especially the White Creek Apartments. It is hoped that the new White Creek Community Center will meet some of the community’s recreation needs with the addition of new basketball and volleyball courts. The recent passing of a student fee will fund additional recreation centers on campus, which will begin to address the remoteness of the Student Recreation Center for other housing neighborhoods in the longer term.

For more information on this recommendation, see Section 03 - Campus Mobility.

02.2: Develop a public art program in the residence halls that better represents current on-campus residents.

While public art appeared lower on the sustainable amenities activity completed by on-campus residents and DRL staff than most other amenities, the resulting conversations revealed that students and staff didn’t immediately make the connection between public art and sustainability. Follow-up questions, however, revealed that residents have a strong interest in creating spaces around their neighborhoods that represent their communities and cultures.

Some students commented on the importance of representation in the public realm, and that public art on campus currently lacks diversity. These focus group conversations were similar to discussions the planning team had in discussing public art on a campus scale in both the 2017 CMP and 2018 SMP. While few participants in either of those processes immediately saw the link between public art and sustainability, discussion always lead to the conclusions shared by 2018 RLSR participants - campus’s public image should reflect both the legacy of the institution as well as the current composition of the Aggie community.

02.3: Increase the number of applicants to DRL’s Hall Improvement Program.

To utilize their influence on the built environment, any member of a Community Council can fill out a Hall Improvement Form to make a permanent change to their community for the improvement of their hall or apartment. This form is hosted online through the Residential Housing Association (RHA) and financial support is provided by the Department of Residence Life. While the form is available online, some residents appeared unaware of this opportunity to shape their built environment in focus groups. Increased messaging via social media platforms and other DRL communications tools might increase the subscription rate to the Hall Improvement Program.

DRL staff participants indicated that while small projects such as requests for vacuum cleaners, cooking utensils, ping pong tables, and other similar elements can be responded to quickly, larger hall

Department of Residence Life Sustainability Plan | 7

Share Ideas, Express Concerns, and Participate in the Community

On-campus residents can exercise their voice and influence by:

- Engaging in the Community Councils’ and Residential Housing Association’s activities
- Applying for Hall Improvement Funds
- Becoming Resident Advisors (RAs)
- Taking on a leadership role in a 4+1 DRL-sponsored student organization
- Participating in the annual UChallenge

Opportunities for residents to use their voice and influence are plentiful, but all students are aware the opportunities exist.
Sustainability at Texas A&M focuses on the connections between people, the economy, and the environment and how those connections work together to achieve long-term prosperity and continued quality of life. Social Sustainability is an equally weighted theme to environmental and economic aspects of sustainability. In this integrated model, Social Sustainability is not an isolated subject, but instead a thread that ties Aggies into all sustainability initiatives. To this end, Social Sustainability topics are woven throughout this document as well as centralized in this chapter. The Sustainability icon below highlights content in other chapters that connects to the recommendations within this topic.

Social Sustainability at Texas A&M blends traditional social policy areas such as equity, diversity, and inclusion with social issues such as justice, economic opportunity, participation and influence, community and global needs, and wellbeing and quality of life. At a campus scale, Social Sustainability is defined and built around four topics. The content at left highlights how these four topics manifest within the Department of Residence Life.

Social Sustainability in this Document

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Social Sustainability Icon

ACTION ITEM

02: Increase connectivity between on-campus housing and recreation facilities.

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For more information on this recommendation, see Section 05 - Campus Mobility.

02: Develop a public art program in the residence halls that better represents current on-campus residents.

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DRL staff participants indicated that while small projects such as requests for vacuum cleaners, cooking utensils, ping pong tables, and other similar items can be responded to quickly, larger hall

Share Ideas, Express Concerns, and Participate in the Community

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- Engaging in the Community Councils’ and Residential Housing Association’s activities
- Applying for Hall Improvement Funds
- Becoming Resident Advisors (RA)s
- Taking on a leadership role in 1 of 7 DRL governance student organizations
- Participating in the annual UChallenge

Opportunities for residents to use their voice and influence are plentiful, but not all students are aware of the opportunities exist.
02 SOCIAL SUSTAINABILITY

02-1: Increase connectivity between on-campus housing and recreation facilities.
02-2: Develop a public art program in the residence halls that better represents current on-campus residents.
02-3: Increase the number of applicants to DRL’s Hall Improvement Program.
02-4: Increase the frequency of sustainability-related requests in applications to DRL’s Hall Improvement Program.
02-5: Increase the amount of durable goods donated at move-out.
02-6: Increase proactive communication on Social Sustainability topics.

03 ENERGY USE & GREENHOUSE GAS EMISSIONS

03-1: Complete planned energy efficiency upgrades.
03-2: Consider additional strategies to decrease the EUI of Davis-Gary and Moses Residence Halls.

04 STORMWATER MANAGEMENT

04-1: Continue to support campus-wide efforts to achieve better stormwater management by embracing strategies articulated by the 2017 Campus Master Plan.

05 CAMPUS MOBILITY

Collaborate with Transportation Services to:

05-1: Create equitable access to on-campus destinations including the Student Recreation Center across on-campus communities.
05-2: Create equitable access to off-campus destinations including the grocery store and First Friday in Bryan across on-campus communities.
05-3: Consider adding bikeshare as an opt-in fee for on-campus residents.
05-4: Continue evaluating how to balance recommendations of the 2017 Campus Master Plan with on-campus residents’ parking needs.
Integrating Efforts
**Built Environment and Site Design**

Reduce potable water use intensity.

**TARGET:** Decrease on-campus resident domestic water use.

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<th>Year</th>
<th>Water Use Intensity (Gallons / Bed)</th>
<th>Growth</th>
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<tr>
<td>2017</td>
<td>6,700</td>
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<tr>
<td>Short Term</td>
<td>6,365</td>
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<td>Medium Term</td>
<td>6,030</td>
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*Water Use Intensity (Gallons / Bed)*
Public Art

2017 Texas A&M Campus Master Plan

Efforts should be made to represent a broader cross-section of students, faculty, and staff in public art; it is challenging for underrepresented members of the campus community to feel valued and included when their social and cultural identities are not reflected in the institution’s public image.

2018 Texas A&M Sustainability Master Plan

Target 05-2: Develop public, civic spaces (interior or exterior) to represent a broader cross-section of the Aggie community.

3 6

Short Term Medium Term

Number of Public, Civic Spaces (Interior or Exterior) Developed

2018 Residence Life Sustainability Plan

Action 02-2: Develop a public art program in the residence halls that better represents current on-campus residents.
Lessons Learned
Plan to plan.

Stakeholder Entities

- UES
- Diversity Working Group
- Sustainability and Environmental Management
- Chartwells
- SSC Services
- Transportation Services
- Residence Life
- Student Affairs
- Corps of Cadets
- Health Services
- Athletics
- Disability Services
- Faculty Senate
- Staff Council
- Procurement
- HR
- Environmental Health & Safety
- Office of the University Architect
- Office of the Provost
- Division of Research
- Rec Sports
- Others?
Plan to plan.

Stakeholder Mapping

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<tr>
<th>UES</th>
<th>Diversity Working Group</th>
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### Physical Environment

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<th>Name</th>
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<tbody>
<tr>
<td>Mr. Bill Cox</td>
<td>Assistant Director</td>
<td>Facilities and Dining Administration</td>
</tr>
<tr>
<td>Dr. Carol Binzer</td>
<td>Director</td>
<td>Residence Life and Housing</td>
</tr>
<tr>
<td>Mr. Chris Meyer</td>
<td>Associate Vice President</td>
<td>Office of Safety and Security</td>
</tr>
<tr>
<td>Mr. Dan Mizer</td>
<td>Senior Associate Director</td>
<td>Residence Life and Housing</td>
</tr>
<tr>
<td>Ms. Debbie Hoffmann</td>
<td>Associate Director</td>
<td>Transportation Services</td>
</tr>
<tr>
<td>Ms. Jasmine Wang</td>
<td>Undergraduate Student</td>
<td>Speaker of Student Senate</td>
</tr>
<tr>
<td>Mr. Jeff Heye</td>
<td>Resident Regional Manager</td>
<td>SSC Service Solutions for Higher Education</td>
</tr>
<tr>
<td>Mr. Jeff Truss</td>
<td>Assistant Director</td>
<td>Environmental Health and Safety</td>
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<tr>
<td>Mr. Jim Riley</td>
<td>Executive Director</td>
<td>Utilities &amp; Energy Services</td>
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<tr>
<td>Ms. Tracey Foreman</td>
<td>Assistant Director</td>
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<tr>
<td>Mr. Kenny Kimball</td>
<td>Assistant Director</td>
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<tr>
<td>Ms. Courtney Hill</td>
<td>Director of Marketing and Guest Experience</td>
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<tr>
<td>Mr. Les Williams</td>
<td>Director</td>
<td>Utilities &amp; Energy Services</td>
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<td>Ms. Lila Gonzales</td>
<td>University Architect</td>
<td>Office of the University Architect</td>
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<td>Mr. Peter Lange</td>
<td>Associate Vice President</td>
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<td>Assistant Vice President</td>
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</tbody>
</table>

### Social Sustainability

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Dept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Angie Hill Price</td>
<td>Speaker of Faculty Senate</td>
<td>Engineering Technology</td>
</tr>
<tr>
<td>Dr. Carol Binzer</td>
<td>Director</td>
<td>Residence Life and Housing</td>
</tr>
<tr>
<td>Ms. Casey Ricketts</td>
<td>University Staff Council Delegate</td>
<td>College of Education &amp; Human Development</td>
</tr>
<tr>
<td>Mr. Chris Emmerson</td>
<td>Assistant Commandant</td>
<td>Office of the Commandant</td>
</tr>
<tr>
<td>Ms. Courtney Hill</td>
<td>Director of Marketing and Guest Experience</td>
<td>Chartwells</td>
</tr>
<tr>
<td>Ms. Jasmine Wang</td>
<td>Speaker of Student Senate</td>
<td>Undergraduate Student</td>
</tr>
<tr>
<td>Mr. Jason Kurten</td>
<td>Assistant Director</td>
<td>Dept of Recreational Sports</td>
</tr>
<tr>
<td>Dr. Jennifer Reyes</td>
<td>Director</td>
<td>VP &amp; Associate Provost for Diversity</td>
</tr>
<tr>
<td>Mr. Joe Hartsoe</td>
<td>Student Development Specialist III</td>
<td>Disability Services</td>
</tr>
<tr>
<td>Ms. Lila Gonzales</td>
<td>University Architect</td>
<td>Office of the University Architect</td>
</tr>
<tr>
<td>Dr. Maggie Gartner</td>
<td>Executive Director</td>
<td>Student Counseling Services</td>
</tr>
<tr>
<td>Mr. Matthew Etchells</td>
<td>President Graduate &amp; Professional Student Council</td>
<td>Graduate Student</td>
</tr>
<tr>
<td>Dr. Nancy De Leon</td>
<td>Associate Director</td>
<td>Human Resources &amp; Organizational Effectiveness</td>
</tr>
<tr>
<td>Ms. Sarah Boreen</td>
<td>Customer Relations Manager</td>
<td>SSC Service Solutions for Higher Education</td>
</tr>
<tr>
<td>Ms. Barbara Musgrove</td>
<td>Public Relations/Marketing-Graphic Designer</td>
<td>SSC Service Solutions for Higher Education</td>
</tr>
<tr>
<td>Dr. Tonya Driver</td>
<td>Director</td>
<td>Multicultural Services</td>
</tr>
<tr>
<td>Ms. Jaimie Masterson</td>
<td>Associate Director</td>
<td>Assoc VP External Relations</td>
</tr>
<tr>
<td>Dr. Martha Dannenbaum</td>
<td>Director</td>
<td>Student Health Services</td>
</tr>
<tr>
<td>Mr. Dustin Kemp</td>
<td>Program Assistant</td>
<td>Honors Program</td>
</tr>
<tr>
<td>Mr. Carlo Chunga</td>
<td>Undergraduate Student</td>
<td>Student Government</td>
</tr>
</tbody>
</table>
Topics will take different timelines to mature.

Distribution of Planning Effort

- Institutional Efforts: 25%
- Waste Management: 25%
- Social Sustainability: 15%
- Physical Environment: 35%
Vocabulary Matters.

HEALTH AND WELLNESS

EVERGREEN GOALS
Long-term (really LONG-TERM), visionary. No timeline. Relies on consensus of working groups to set the direction

Create a cultural of wellness that solely focuses on physical health, dietary choice, and mental well-being.

Create a cultural of wellness recognizes all eight dimensions of wellness.

Create a culture of wellness that recognizes all eight dimensions of wellness, but focuses heavily on physical and emotional.

TARGETS
Incremental steps, Measurable. Sets a timeline. Relies on existing data to set the benchmark

- Increase STUDENT participation in mental health programs by 20% by 2025.
- Increase student, faculty, and staff participation in physical health and nutrition programs by 20% by 2025.
- Increase STUDENT participation in a Dietary Choice program by 25% by 2026.
- Increase FACULTY AND STAFF participation in mental health programs by 25% by 2025.
- Increase student, faculty, and staff participation in physical health and nutrition programs by 25% by 2025.
- Increase FACULTY AND STAFF participation in a Dietary Choice program by 25% by 2026.
- Increase intellectual wellness programs by 10% by 2026.
- Increase financial wellness programs by 10% by 2025.
- Increase occupational wellness programs by 10% by 2026.
- Increase spiritual wellness programs by 10% by 2025.

Or share your goals!

Or share your targets!
Vocabulary Matters.
Student voices carry weight.
How easy is it for you to recycle in your residence hall?

- **Very easy, I do it all the time.** 39%
- **Very easy, but I don’t recycle.** 24%
- **I’ve heard you can recycle, but I’m not sure how to.** 20%
- **Do we have recycling?!** 16%
- **No Response** 13%

Student voices carry weight.
What is your vision for a sustainable on-campus living experience?

“that all Aggies are aware of our surroundings and what we can do to make a change”

“more convenient, available, and better labeled recycling”

“an environment for students to better themselves and the world we live in”

“improved administrative + social sustainability support”
Achieve a 50% reduction in Greenhouse Gas Emissions by 2030; Achieve net-zero by 2050.

As a signatory for the Presidents’ Climate Leadership Commitments, the University is required to establish a neutrality target date and plan to achieve it as quickly as possible. Texas A&M University has committed to achieving net-zero greenhouse gas emissions by 2050.

03.1: Decrease demand for natural gas.

How will we do it?
Keeping indoor spaces cool in Texas’s hot climate is an energy intensive process that can most efficiently serve the growing campus by maximizing the use of heat pump chillers that will decrease demand for natural gas, reduce the need for cooling tower makeup water and chemical water treatment, and minimize campus’s greenhouse gas emissions. The following actions will help Texas A&M optimize on-campus energy production:
- Replace equipment that is past its industry recommended service life.
- Increase use of heat pump chillers.
- Upgrade existing cooling towers.
- More information on the actions above can be found in the 2017 U.S. Master Plan.

03.2: Decrease campus energy use intensity.

| Year     | Energy Use Intensity
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>2017</td>
<td>192</td>
</tr>
<tr>
<td>2020</td>
<td>183</td>
</tr>
<tr>
<td>2025</td>
<td>174</td>
</tr>
</tbody>
</table>

- Reduced energy use intensity in the U.S. Master Plan.

03.3: Increase use of renewable energy.

| Year     | Percentage of Campus Electricity Consumption from Renewable Sources
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>15%</td>
</tr>
<tr>
<td>2020</td>
<td>20%</td>
</tr>
<tr>
<td>2025</td>
<td>25%</td>
</tr>
</tbody>
</table>

- Enhanced use of alternative energy sources.

How will we do it?
While Texas A&M produces no renewable energy on campus, the University purchases approximately half of campus’s annual electricity demand from the Electrical Reliability Council of Texas (ERCOT) grid which includes energy generated from wind power. Gains the volume of electricity Texas A&M purchases from ERCOT today, 15% of on-campus electricity is powered from renewable sources. To increase the amount of electricity powered by renewable sources:
- Structure appropriately-oriented new construction to accommodate solar panels in future.
- Investigate Power Purchase Agreements (PPAs) as a way to finance on-campus panels.
- Investigate Renewable Energy Certificates (RECs) as a way to increase renewable energy purchases.
- Additional action items as suggested by working group or SAC.

Equivalency graphic: If EU drops from 192 to 174, that’s the same as removing X cars from the road for a year:

- Need a percentage split of EU to electricity vs. gas and other fuel sources.

1,712
Number of EU drops from 192 to 174.

$3.1M
Enhanced Annual Control for Campus Parking Lot.

40% - 65%
Energy Savings Potential from Upgrading Parking System.

2017 Sustainability Master Plan | 23
Show it in print.

Achieve a 50% reduction in greenhouse gas emissions per weighted campus user by 2030; achieve net-zero emissions by 2050.

Texas A&M University is committed to achieving net-zero greenhouse gas emissions per weighted campus user by 2050.

D2-c: Decrease campus energy use intensity.

<table>
<thead>
<tr>
<th>192</th>
<th>182</th>
<th>174</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>2017</td>
<td>2018</td>
</tr>
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</table>

Energy use intensity (EUI) is a measure of how much energy is consumed per square foot in campus buildings each year. Cutting down on energy use intensity requires efficient buildings and changes in Aggie behaviors that use energy.

Aggies can cut energy use by:
- Turning off the lights when exiting a room.
- Turning off and unplugging devices prior to extended campus breaks.
- Increasing effectiveness of air-side heat recovery.
- Updating building automation systems.
- Communicating system feedback to end users.
- Upgrading laboratory furnace heads.
- Meaningfully integrating exterior shading solutions, such as that provided by trees or architectural features.

Scope 1: Emissions from energy consumed or purchased by Texas A&M, including from building air-conditioning and heating systems, electricity generated on campus, and the campus van fleet.

Scope 2: Emissions from the manufacture or purchase of fuel used to operate or heat/cool campus buildings or the campus van fleet vehicles.

Scope 3: Emissions from a wide range of Texas A&M operations that are owned or controlled by the university, including the emissions associated with water consumption and wastewater treatment.

Types of Greenhouse Gas Emissions

<table>
<thead>
<tr>
<th>Scope 1</th>
<th>Scope 2</th>
<th>Scope 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overview</td>
<td>Overview</td>
<td>Overview</td>
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</table>

The energy used for campus operations is either produced on campus and contributes to Scope 1 GHG emissions or purchased from the Energy Reliability Council of Texas (ERCOT) grid and contributes to Scope 2 GHG emissions. Since FY 2008, energy produced on campus has produced fewer GHG emissions than energy purchased from ERCOT.

D2-2: Decrease Scope 1 and Scope 2 greenhouse gas emissions per weighted campus user.

| 5.81 | 5.52 | 5.23 |
| 2017 | 2018 | 2019 |

The energy used for campus operations is either produced on campus and contributes to Scope 1 GHG emissions or purchased from the Energy Reliability Council of Texas (ERCOT) grid and contributes to Scope 2 GHG emissions. Since FY 2008, energy produced on campus has produced fewer GHG emissions than energy purchased from ERCOT.

How will we do it?

The following actions will help Texas A&M optimize on-campus energy production and purchase:
- Investigate strategies to reduce peak demand to maximize opportunities for on-campus production to meet energy needs.
- Investigate strategies to increase capacity for on-campus energy production.
- Replace equipment that is past its industry recommended service life.
- Increase use of heat pump chillers.
- Upgrade existing cooling towers.

More information on the actions above can be found in the 2017 Utilities & Energy Services Master Plan.
Celebrate existing work; encourage advancement.

10-6: Maintain the percentage of researchers that are engaged in sustainability research.

10-7: Maintain the percentage of departments that are engaged in sustainability research.
Celebrate existing work; encourage advancement.

10-6: Maintain the percentage of researchers that are engaged in sustainability research.

10-3: Increase the percentage of students who take a course with a sustainable learning outcome.

18%  20%

10-7: Maintain the percentage of departments that are engaged in sustainability research.
Many hands make light work.

3
Office of Sustainability
Staff Members

54
Working Group
Participants
Keep leadership engaged.

Distribution of Planning Effort

- 25% Institutional Efforts
- 20% Waste Management
- 20% Social Sustainability
- 25% Physical Environment
- 10% Leadership Meetings
Thank you!

Questions?

Find us after the webinar:
Carol Binzer – carolb@tamu.edu
Kelly Wellman – kwellman@tamu.edu
Allison Wilson – awilson@asg-architects.com
The 2018 Texas A&M Sustainability Master Plan and 2018 Residence Life Sustainability Plan are available online at:

2018 SMP:  
http://sustainability.tamu.edu/Data/Sites/1/downloads/2018SMP.PDF