

# Sustainability Master Plan

for

## Texas A&M University

Prepared by:



G R E S H A M  
S M I T H   A N D  
P A R T N E R S



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## Taking the lead in sustainability

*At Texas A&M, sustainability is a way of life.*

Our students, faculty and staff take advantage of LEED-certified facilities, solar-powered trash compactors, a community garden, a ride-sharing service, university vehicles that run on recycled cooking oil and 140 campus locations that collect and recycle 750 tons of material each year.

Thanks to infrastructure improvements and outreach, since 2002 the campus has reduced annual energy consumption by 20% while campus gross square footage has increased 20% and annual water consumption has seen a 17% decrease since 2002. To further aid in this effort, students in the university's 29 residence halls compete in the Sustainability & Energy Challenge.

In addition, research by our students and faculty has propelled Texas A&M to the forefront of national and international sustainability efforts.

Recent projects include our award-winning "solar pipe" system of transporting natural light into the interior of buildings and our participation in the biannual Solar Decathlon, an international competition to design, build and operate solar-powered homes.

*This Sustainability Master Plan will take us to the next level.*

It is time to build on our success and take our efforts to the next level through the Sustainability Master Plan for Texas A&M.

The Master Plan addresses 12 strategic imperatives known as the Sustainability 12 :

- management of climate change,
- purchasing of sustainable goods and services,
- optimization of energy use,
- sustainable food and dining,
- management of water resources,
- waste management,
- sustainable land use,
- use of green building practices,
- utilization of alternative transportation and fuels,
- improving social and economic factors,
- education and research, and
- management and funding support.

I hope that you are as proud as I am to take this bold step forward in fulfilling our land-, sea- and space-grant mission of improving the lives of people in Texas and beyond.

We owe a debt of gratitude to Kelly Wellman, our campus sustainability officer, for her commitment to this effort. She and I will keep the campus community up to date on our progress through the university website, my weekly email messages and other forums.

Dr. R. Bowen Loftin '71  
President

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PARTNERS



## Executive Summary

Texas A&M University is building on recent University-wide environmental successes by providing a framework to coordinate environmental, social and financial stewardship efforts. The Sustainability Master Plan (the Plan) details the approach and specific metrics by which to gauge progress toward achieving the established Sustainability and Environmental Policy goals. The Plan represents Texas A&M University's continued commitment to sustainability.

The Plan applies to all facets of the Texas A&M University campus, including the University's departments and facilities, students, faculty, staff, former students and campus visitors. This Plan was constructed from a variety of sources including an intensive review of sustainability programs at other leading universities, interviews with staff, faculty and students, parents, visitors and the Association for the Advancement of Sustainability in Higher Education Sustainability Tracking and Rating System (STARS).

The Plan is presented in a format to accommodate inclusion in the University's planned Environmental Management System. Objectives are organized into twelve core components and include:

- Management of Climate Change
- Purchasing of Sustainable Goods and Services
- Optimization of Energy Use
- Sustainable Food and Dining
- Management of Water Resources
- Waste Management
- Sustainable Land Use
- Use of Green Building Practices
- Utilization of Alternative Transportation and Fuels
- Improving Social and Economic Factors
- Education and Research
- Management and Funding Support

Action plans for each objective and target are included in the Plan and include a target date for completion and an associated metric. By addressing the twelve components detailed in the Plan, sustainability metrics will be tracked and progress on achieving the objectives and targets, reported. The Plan provides a roadmap by which to achieve the sustainability goals and enhanced long-term social, environmental and financial stewardship identified and committed to by Texas A&M University.

## 1.0 Introduction

### 1.1. Definition

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 Aggies, the Texas A&M University community and beyond. The university defines “stewardship” as the act of conserving precious resources for a better future.

### 1.2. Recent Successes

Texas A&M University is already taking significant steps to reduce environmental impacts and increase university sustainability. The Office of Sustainability has been established and works with the Sustainability & Environmental Management Committee (SEMC). University administration signed the Sustainability and Environmental Policy, and a greenhouse gas inventory has been conducted. A Recycling study group and a Hazardous Waste study group have been developed by the SEMC to identify additional opportunities to improve Texas A&M University’s environmental performance. The Utilities and Energy Management division has made extensive efforts over the last eight years (FY02 through FY09) to increase the efficiency of its energy production and promote initiatives to reduce energy consumption in campus buildings. Smart Energy Campus Initiative (SECI) research is being conducted in five key areas including solar generation and energy efficient computational resources. The College of Architecture developed an Environmental Protection Agency (EPA) award-winning “solar pipe” system. Through the Campus Diversity Plan, Climate Assessments for students, faculty and staff were conducted as well as the piloting of a Global Leadership Institute.

These types of initiatives led Texas A&M University to a “B-” rating on the Sustainable Endowments Institute (SEI) Green Report Card:

The following improvements in energy have been achieved since 2002:

- Reduced overall energy use per gross square foot (GSF) on campus by 33% (from 364 mBtu/GSF to 243 mBtu/GSF)
- Reduced total campus energy consumption by 23% while GSF served increased by 16%
- Achieved \$90 million cost avoidance as a result of energy efficiency improvements
- Improved overall utility plant operating efficiency by 40%
- Improved building operating efficiency by 6% per GSF

Over the eighteen year period from 1991 through August 2009, Texas A&M University has reduced total annual water consumption 50% - from a peak of 3,500 million gallons in 1991 to 1,750 million gallons in 2008/2009. This reduction was accomplished while serving a campus that has experienced a growth of 43% in square footage served (from 15 million GSF in 1991 to



21.5 million GSF in 2009). This 50% decrease in overall water consumption with a 43% increase in campus square footage represents a 65% reduction in consumption per GSF.

The following improvements in green purchasing and the use of sustainable products have been achieved:

- Custodial crews use 20-40% post consumer recycled content paper towels and tissue with up to 95% total recycled content.
- Some copy paper purchased is 30% recycled content, meeting the sourcing requirements of the Sustainable Forest Initiative.
- Purchase of EcoLogo and Green Seal products for the custodial crews to use such as floor cleaner, general purpose cleaner, tissue, roll towels and foaming hand soap.

Texas A&M University has many successes in transportation, helping them achieve an “A” rating on the SEI Green Report Card Transportation category, including:

- An extensive, free biodiesel-powered transit system
- Incentives to encourage carpooling
- Ten hybrid vehicles in the campus car-sharing program

This Sustainability Master Plan (Plan) was developed to coordinate these and future efforts under a unified vision to fulfill the University’s commitment to sustainability.

### **1.3. Plan Development**

The Plan was developed based on Benchmarking and Gap Analysis (**Appendix A**). Data on Texas A&M University sustainability were gathered through existing documents, website, and staff, faculty and student interviews. We selected 10 of 15 Vision 2020 peer institutions and reviewed and compared their programs to Texas A&M University. The results of these analyses guided the development of the Plan. Other relevant environmental and sustainability policies and programs were also consulted, such as the Sustainability Tracking, Assessment and Rating System (STARS) and the American College and University Presidents’ Climate Commitment (ACUPCC). The Plan incorporates criteria from each of these sources to allow for possible future fulfillment. Because Texas A&M University is in the process of implementing an Environmental Management System (EMS) to organize and track its environmental objectives, the Plan is presented in a format to accommodate inclusion in the EMS. Additional stakeholder involvement will be required to further refine the action plans. Faculty, staff, students, former students, local business and community members all offer important information to make this Plan relevant to the vision and mission of Texas A&M University. Stakeholder participation not only builds a sense of ownership, but can provide key insights to promote the successful implementation of the Plan.

The Office of Sustainability, along with the support of the Sustainability and Environmental Management Committee, will use this document to guide Texas A&M University’s path to promote sustainable practices both on and off campus.

## **2.0 Background**

### **2.1. *Office of Sustainability: Vision***

Our vision is to be recognized as a national campus leader in sustainability, to develop long-term programs around environmental, social, and financial stewardship for our earth that have measurable results, and for every member of the Aggie family to incorporate sustainable practices into their daily lives.

### **2.2. *Office of Sustainability: Mission***

Our mission is to educate the campus and local community about the importance of sustainability. We will accomplish this by promoting sustainable practices both on and off campus in academic and non-academic settings, providing resources and support for people who wish to incorporate sustainable practices into their work and life, and advocating for sustainable programs and initiatives.

### **2.3. *Sustainability and Environmental Policy, as Adopted by University Administration***

In line with our mission of teaching, research, and service, Texas A&M University is committed to conducting our activities as responsible stewards of the environment. Therefore, we commit to sustainable practices that protect our assets, respect the health, safety and well-being of our community, and maintain strict accountability for the natural resources entrusted to Texas A&M University and promote educational activities to enhance environmental awareness, safety and action.

In accordance with this commitment, we will conduct our affairs in a manner that complies with applicable laws and regulations and:

- Conserves, protects and maintains our natural resources;
- Minimizes adverse environmental impacts;
- Safeguards our community's environmental health, safety and well-being;
- Reduces risks associated with the use and storage of hazardous substances;
- Promotes strategies to minimize the generation of wastes and encourage reuse and recycling;
- Supports environmentally responsible teaching, research and outreach;
- Inspires environmental research and assessment;
- Encourages individuals to be aware of environmental and sustainability issues; and
- Provides open communication about the environment and sustainability.

## **2.4. Purpose and Scope**

This Sustainability Master Plan provides a framework for actions to guide Texas A&M University's path toward becoming an environmental steward. The intention is to achieve continual improvement in the environmental, social and economic areas of Texas A&M University. The Plan applies to all facets of the Texas A&M University campus, the University's departments and facilities, staff, students, faculty, former students, and campus visitors.

## **2.5. Structure**

The Plan creates a framework for Texas A&M University to take action to achieve the vision of sustainability. Because Texas A&M University is in the process of implementing an Environmental Management System (EMS) to organize and track its environmental objectives, the Plan is presented in a format to accommodate inclusion in the EMS. Broad objectives, targets, and due dates have been developed based on the benchmarking study, gap analysis and review of data from Texas A&M University's existing documents, website and staff, faculty and student interviews. The objectives are organized into twelve core components (**Section 2.6**) to guide the University's long-term efforts around environmental, social and economic stewardship.

Action plans for each objective and target have been identified, which include a target date for completion and an associated metric. The action plans are the roadmap for achieving the objectives and targets. Many employees are already involved in programs and projects tied to sustainability, and aligning these efforts will assist in coordinating a unified program.

### **2.5.1. Sustainability Report**

The Office of Sustainability will track Texas A&M University's progress on the Sustainability Plan and will prepare and publish a report to document the results on a regular predetermined basis. These results will be posted on the Texas A&M University Sustainability website.

## **2.6. Core Components**

Twelve key areas have been named to organize the sustainability efforts for Texas A&M University. There is substantial overlap and interplay between many of the core components, such as Climate Change, Energy and Alternative Transportation or Sustainable Dining and Waste Management, but each component works to achieve an increased level of stewardship at Texas A&M University. For clarity, when an objective is described under one component, it will not be listed under another. The following sections describe each of the core components.

### **2.6.1. Management of Climate Change**

Greenhouse gas emissions, typically caused from the burning of fossil fuels such as coal, natural gas, and oil, is generally recognized as contributing to climate change. United States EPA has promulgated regulations associated with greenhouse gas emissions. Texas A&M University progress in this area is dependent on many of the other core components and will be interwoven throughout the Plan.

### **2.6.2. Purchasing of Sustainable Goods and Services**

The University is committed to encouraging the purchase of renewable, reusable, recycled, locally produced and purchased and environmental preferable materials. These purchases help to prevent waste and pollution while stimulating the manufacture of more environmentally and socially sound products. Due to its size, Texas A&M University's green purchases can have a significant environmental benefit.

### **2.6.3. Optimization of Energy Use**

The great majority of energy is produced using non-renewable fossil fuels which emit greenhouse gases along with other pollutants. Increasing electricity conservation and efficiency and using sustainable sources for electricity generation are important steps to reducing pollution, increasing cost savings and promoting sustainable technologies for the future.

### **2.6.4. Sustainable Food and Dining**

Food production and food transportation can have significant impacts to surface and groundwater, wildlife, atmosphere and human health. Additionally, dining services operations consume resources, generate waste and produce wastewater. Purchasing food from local producers reduces the transportation impacts while bolstering the local economy. Third-party certified food products, such as Certified Organic and Fair Trade, have environmental as well as social and economic benefits. Texas A&M University can help promote a sustainable food system and reduce waste through its dining services operation.

### **2.6.5. Management of Water Resources**

Clean water is a limited and essential resource, especially in Texas. Managing water supply, wastewater treatment and surface water pollution is a growing concern. Many steps are available to Texas A&M University to conserve water, reduce wastewater treatment and protect surface water while reducing operational costs and satisfactorily meeting the demands of a growing campus.

### **2.6.6. Waste Management**

Landfills consume a large area and land is a finite resource. According to U.S. EPA, over half of the waste stream in the United States is comprised of recyclable or compostable materials which can be diverted from landfills, protecting land and conserving natural resources.

### **2.6.7. Sustainable Land Use**

Texas A&M University is a land-grant university with a 5,000-acre campus, containing a variety of open spaces, water resources, plant life and wildlife habitat. Sustainable stewardship over these resources will help protect the character of the campus as well as the ecological system in which it exists. In its implementation of the Campus Master Plan, the Design Review Board (DRB) should continue to serve as a key consultative body for ensuring the physical form of campus meets sustainability standards.

### **2.6.8. Use of Green Building Practices**

According to the U.S. Green Building Council, buildings in the United States account for:

- 72% of electricity consumption,
- 38% of all carbon emissions,
- 40% of raw materials use,
- 30% of waste output (136 million tons annually), and
- 14% of potable water consumption.

Green building techniques reduce these environmental impacts as well as lower total cost of ownership. Furthermore, Green buildings promote a healthier environment for the building occupants. The Texas A&M University campus has over 21.5 million square feet of building space, therefore promoting sustainable building and renovation practices has the potential for significant cost savings and environmental benefits. To further our efforts in green building practices, the DRB website offers many resources about buildings, landscapes and site furnishings.

### **2.6.9. Utilization of Alternative Transportation and Fuels**

Traditional transportation relies on non-renewable fossil fuels which emit air pollutants and consume natural resources. Developing alternative methods of transportation and increasing the use of zero-emission and low-emission vehicles reduces these environmental impacts. Additional social benefits are found in the reduction of traffic congestion, increased exercise from biking and walking, and decreased noise pollution.

### **2.6.10. Improving Social and Economic Factors**

Social and economic aspects of sustainability have a broad scope, including public service, economic justice, diversity and cultural resources. Sustainability efforts in this area lead an organization to continually evaluate and incorporate, where feasible and practical, individual and societal needs including health and well-being, nutrition, education and cultural expression. As an example, Texas A&M University holds the “Big Event”, the largest, one-day, student-run service project in the nation where students of Texas A&M University come together to volunteer on community service projects such as yard work, window washing, and painting for community members. Texas A&M University recognizes this importance by naming “Service” in its mission. Other aspects are interwoven into campus life and operations and are recognized in the Plan.

### **2.6.11. Education and Research**

Education is one of the most effective tools for changing behavior, while research advances knowledge and discovery. Both are important to increasing sustainability. Texas A&M University has an important opportunity to align its vision of sustainability with the University’s mission of teaching and research. Allowing students to apply sustainability in coursework and research can deepen their understanding and position Texas A&M University to meet a growing demand.

### **2.6.12. Management and Funding Support**

The Office of Sustainability cannot implement the Plan without the necessary resources, staff and funding. Sufficient infrastructure in the sustainability program must be maintained in order to carry out its duties of promoting sustainability at Texas A&M University.



### 3.0 Objectives and Targets with Action Plans

The following table represents the objectives, targets, metrics and action plans for the Sustainability Master Plan.

**TAMU Sustainability**  
*Sustainability Master Plan*  
 June 2010

<b>Texas A&amp;M University</b>			
<b>Sustainability Master Plan</b>			
Prepared by Gresham Smith and Partners			
<b>MANAGEMENT OF CLIMATE CHANGE</b>			
<b>Reducing the production and release of greenhouse gas emissions</b>			
<b>Objective and Target</b>			<b>Metric</b>
<b>A</b>	<i>Develop a Climate Action Plan with associated greenhouse gas reduction targets by June 30, 2011</i>		<i>Metric tons CO2equivalents</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Review existing Baseline Greenhouse Gas Emission Inventory and update projections according to expected reductions from the Texas A&M Sustainability Plan.	12/31/2010	Completed inventory
<b>2</b>	Develop greenhouse gas emission reduction goals and document in a Climate Action Plan (CAP) with key strategies and associated reductions.	6/30/2011	CAP signed by President
<b>3</b>	Track progress and report on greenhouse gas emissions. Ensure identification of progress in other applicable Sustainability Master Plan areas, such as energy, green building, alternative transportation, etc.	Annually	Metric tons CO2equivalents

<b>PURCHASING OF SUSTAINABLE GOODS AND SERVICES</b>			
<b>Increasing the use of sustainably produced materials and services</b>			
<b>Objective and Target</b>			<b>Metric</b>
<b>A</b>	<i>Increase the use of renewable, reusable, recycled, locally produced and purchased, and environmental preferable products by December 31, 2012</i>		<i>% of total expenditures</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Review existing Green Purchasing Guidelines and develop and implement a University-wide "Green Purchasing" policy.	8/1/2010	Policy
<b>2</b>	Require the purchase of 30% post-consumer recycled content paper and paper products, at a minimum.	6/30/2011	% of total expenditures by recycled content
<b>3</b>	Increase the purchase of EPEAT-certified (Gold or Silver) computer work stations to 50% of new purchases.	12/31/2012	% of total expenditures of computer equipment with expenditures by Gold or Silver Level
<b>4</b>	Require purchase of Energy Star/energy efficiency products through development of standardized specifications or as outlined in the energy policy.	12/31/2012	% of total expenditures of related products
<b>5</b>	Increase the use of green cleaning products by expanding upon the successes of current practices and including requirements for Green Seal or EcoLogo products.	6/1/2011	% of total expenditures of cleaning products
<b>6</b>	Develop and implement a Vendor Code of Conduct outlining Texas A&M's expectations	12/31/2012	Adopted Code of Conduct
<b>7</b>	Review chemical purchases and determine if there are opportunities to reduce the toxicity, quantity and/or variety of chemicals purchased.	12/31/2011	Review completed; opportunities identified
<b>8</b>	Develop and implement specifications for fuels and equipment purchases with a focus on reducing emissions.	6/30/2011	Adopted specifications; emission reductions in tons per year
<b>9</b>	Evaluate opportunities to increase green purchasing and availability of sustainably produced products; post sustainably produced products information on the Campus Store website to increase education of both current and former students of the availability of sustainably produced Texas A&M products.	6/30/2011	Website launched
<b>10</b>	Promote the use of sustainably produced products through training and educational programs.	12/31/2012	Number of educational opportunities

**TAMU Sustainability**  
Sustainability Master Plan  
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<b>OPTIMIZATION OF ENERGY USE</b>			
<b>Increasing energy efficiency and reducing energy consumption</b>			
<b>Objective and Target</b>			<b>Metric</b>
<b>A</b>	<i>Reduce energy consumption per GSF by 5% per year</i>		<i>% energy use reduction (compare in mBtu/GSF)</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
1	Develop and publish an energy policy that sets a campus goal, outlines programs, establish building system design standards, and mandates participation.	8/1/2010	Policy
2	Implement campus-wide Energy Stewardship Program and continue efforts to secure associated grant funding.	1/1/2012	% energy use reduction (compare in mBtu/GSF)
3	Continue retro-commissioning program to identify and upgrade inefficient buildings with the potential for energy improvements.	On-going	Opportunities identified; improvements implemented
4	Complete lighting retrofit project in 32 buildings.	On-going	Completed project
5	Evaluate results of parking lot-lighting program upgrade and consider future expansion.	On-going	Results of pilot program
6	Establish and implement campus data center efficiency standards.	1/1/2012	% energy use reduction (compare in mBtu/GSF)
7	Continue efforts to reduce energy consumption during unoccupied periods by turning off campus air handler units.	Ongoing	% energy use reduction (compare in mBtu/GSF)
8	Develop and implement an outreach and education program building off of successful Residence Hall Challenge.	Ongoing	Program in place
9	Complete energy consumption reduction identified and approved in 24 facilities on campus with \$15 million budget.	12/1/2011	Performance contract awarded
<b>Objective and Target</b>			<b>Metric</b>
<b>B</b>	<i>Increase campus energy consumption efficiency by 20% by 2020</i>		<i>% Energy Use Reduction (compare in mBtu/GSF)</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
1	Complete Combined Heat and Power Upgrade project.	1/1/2012	New equipment operational by July 2011
2	Replace older chillers with high efficiency chillers.	6/30/2010	New equipment installed
3	Improve plant controls and operating efficiency through Plant Optimization Program.	12/31/2010	New program installed by 10/1/2010
<b>Objective and Target</b>			<b>Metric</b>
<b>C</b>	<i>Advocate for the increased usage of renewable energy by 5% of the University's current energy supply by 2015</i>		<i>% renewable energy purchased</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>

1	Evaluate potential for on-site renewable energy production.	6/30/2012	Complete feasibility evaluation
2	Identify and acquire grant funding to support development of renewable energy sources.	12/31/2015	Grant funding in dollars

**TAMU Sustainability**  
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<b>SUSTAINABLE FOOD &amp; DINING</b>			
<b>Strengthening sustainable food systems, increasing healthy food options, reducing waste generation</b>			
<b>Objective and Target</b>			<b>Metric</b>
<b>A</b>	<i>Increase the use of locally grown and third party certified foods in Campus-operated cafeterias to 20% of food purchases by 2015</i>		<i>% food purchases (compared by cost)</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
1	Identify opportunities to develop new or expanded programs to increase purchases of locally grown and/or organic foods; evaluate and develop a list of criteria to be used to define sustainably produced dining products.	6/30/2012	% food purchases (compared by cost) or number of products purchased that meet the selected criteria
2	Collaborate with local growers and producers to develop appropriate agreements and infrastructure to facilitate local food purchases.	12/31/2014	% food purchases (compared by cost)
3	Enhance and formalize the community garden on campus and coordinate with other local efforts in Bryan and College Station.	12/31/2012	Number of community gardeners (on-campus and off-campus); land area of gardens
4	Develop a student farm program to supply cafeterias.	12/31/2014	% food purchases (compared by cost)
<b>Objective and Target</b>			<b>Metric</b>
<b>B</b>	<i>Reduce waste to landfills at Campus-operated cafeterias by 20% by December 31, 2013</i>		<i>% waste reduction (compare in tons)</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
1	Increase number of water bottle filling stations on campus to increase the use of reusable water bottles.	8/1/2010	Number of water bottle filling stations
2	Develop and implement plan to reduce cafeteria waste from trays, plates and utensils.	12/31/2011	% waste reduction (compare in tons)
3	Develop and implement composting plan for pre-consumer food scraps at all Cafeterias. Consider adding post-consumer food scraps in future.	12/31/2013	Tons of waste diverted from landfill; % waste reduction (compare in tons)
<b>Objective and Target</b>			<b>Metric</b>
<b>C</b>	<i>Increase the offering of diverse, healthy food options by December 31, 2012</i>		<i>% healthy options on cafeteria menu</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
1	Provide students with access to educational materials to support their food choices.	6/31/2011	Materials distributed
2	Increase the amount of vegetarian options on dining hall menus.	12/31/2012	% vegetarian options on cafeteria menu

<b>MANAGEMENT OF WATER RESOURCES</b>			
<b>Reducing consumption of potable water, preventing pollution of water resources</b>			
<b>Objective and Target</b>			<b>Metric</b>
<b>A</b>	<i>Reduce Potable Water Consumption by 15% by 2015</i>		<i>% potable water used (compare in gallons/GSF)</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Install at least one water consumption meter to evaluate usage.	6/30/2011	Installed meter
<b>2</b>	Document water conserving equipment replacement policy and report and monitor results.	12/31/2012	Number of units upgraded; gallons of water saved, annually (estimated)
<b>3</b>	Develop and implement a water conservation plan for campus buildings focusing on cost-effective methods.	6/30/2014	potable water gallons per gross square foot
<b>4</b>	Evaluate implementing additional landscape level water conservation practices, such as xeriscaping, rainwater harvesting and recycled water, to reduce the use of potable water.	12/31/2013	Gallons of non-potable water used
<b>Objective and Target</b>			<b>Metric</b>
<b>B</b>	<i>Manage storm water in a proactive and ecologically sensitive manner by integrating storm water management in campus planning and development</i>		<i>Number of storm water BMPs</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Update Storm Water Management Plan with a focus on continual improvement of storm water best management practices.	6/30/2011	Plan completed
<b>2</b>	Increase the use of low-impact development (LID) methods on campus either through development of a policy or inclusion in the Storm Water Management Plan.	12/31/2012	Number of projects utilizing LID methods

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<b>WASTE MANAGEMENT</b>			
<b>Reducing the generation of waste, increasing waste diversion from landfills</b>			
<b>Objective and Target</b>			<b>Metric</b>
<b>A</b>	<i>Reduce waste to landfills by 20% by December 31, 2013</i>		<i>Tons of waste diverted from landfill; % waste reduction (compare in tons)</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Develop recycling strategies and goals which include recycling services in all campus buildings, accompanying educational materials, signage and staffing.	12/31/2010	Tons of waste diverted from landfill; % waste reduction (compare in tons)
<b>2</b>	Conduct a waste management audit and identify opportunities to reduce, reuse and recycle. This should include waste streams such as landscaping, construction debris, chemicals, and building and vehicle maintenance wastes.	12/31/2010	Audit report complete
<b>3</b>	Enhance athletic event recycling program. Encourage student involvement and leadership in the program.	6/30/2011	Tons of waste diverted from landfill; % waste reduction (compare in tons)
<b>4</b>	Expand existing program with Twin City Missions and Salvation Army to reduce student waste generation in the move-in and move-Out process at dorms. Develop Aggie Swap Store as a sustainability enterprise.	12/31/2012	Tons of materials diverted from landfill
<b>Objective and Target</b>			<b>Metric</b>
<b>B</b>	<i>Increase electronic waste recycling by 25% by December 31, 2013</i>		<i>Tons of e-waste diverted from landfill; number of computers and monitors recycled</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Develop and implement a policy to increase recycling of university's electronic waste.	12/31/2011	Tons of e-waste diverted from landfill; number of computers and monitors recycled
<b>2</b>	Provide resources and outreach to increase recycling of students' electronic waste.	12/31/2012	Tons of e-waste diverted from landfill; number of computers and monitors recycled

<b>SUSTAINABLE LAND USE</b>			
<b>Maintaining and developing land while protecting natural resources</b>			
<b>Objective and Target</b>			<b>Metric</b>
<b>A</b>	<i>Promote sustainable land use practices through establishing policies and planning by June 30, 2014</i>		<i>Number of practices/policies</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Identify sustainability goals to integrate into the Campus Long Range Plan, such as developing the "Green Reserve" concept, student farm, or others.	6/30/2014	Goals identified and adopted
<b>2</b>	Establish and implement a policy and plan for sustainable land use including management of green spaces, invasive species management, construction impacts, and native plants.	6/30/2012	Policy/plan adopted
<b>3</b>	Implement a policy of Integrated Pest Management and provide necessary training for grounds maintenance staff.	12/31/2012	Policy adopted and implemented

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<b>USE OF GREEN BUILDING PRACTICES</b>			
<b>Designing, constructing and maintaining healthier and resource efficient structures</b>			
<b>Objective and Target</b>			<b>Metric</b>
<b>A</b>	<i>Implement green building maintenance practices by December 31, 2013</i>		<i>Number of practices</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Evaluate and prepare a list of green building practices to be incorporated into building renovations.	12/31/2011	Recommendations
<b>2</b>	Develop and implement preventative maintenance program for buildings.	12/31/2011	Program in place
<b>Objective and Target</b>			<b>Metric</b>
<b>B</b>	<i>Integrate Sustainability Plan component green building goals for new campus buildings by December 31, 2011</i>		<i>Number of buildings</i>
<b>Action Plan</b>			<b>Metric</b>
<b>1</b>	Ensure architects and engineers are familiar with this Sustainability Plan, and buildings designed to this Plan will meet or exceed the Plans requirements. Using ASHRAE 90.1 and/or 189.1 (dependent on building type) as a comparative base requirement metric, establish goals to exceed these defined metrics by a factor of 30%.	12/31/2010	Number and type of green building practices Incorporated into each building design
<b>2</b>	Prior to and throughout the construction phase of the project, maintain a goal of 30% of key construction personnel (Managers, Superintendents, Lead Estimators and Project Engineers) to have documented industry sustainability training in construction means and methods, including procurement of sustainable materials to the largest extent possible. **	12/31/2011	Program in place
<b>3</b>	Monitor, measure and publish results for future consideration of building design and renovation.	12/31/2010	Results by area

<b>UTILIZATION OF ALTERNATIVE TRANSPORTATION AND FUELS</b>			
<b>Reducing the use of fossil fuels and associated emissions</b>			
<b>Objective and Target</b>			<b>Metric</b>
<b>A</b>	<i>Reduce emissions and/or fossil fuel use in fleet by 10% by December 31, 2014</i>		<i>Tons per year</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Expand on existing alternative fuel fleet program by developing and implementing a plan for choosing alternative fuel and/or low-emitting vehicles when replacing outdated fleet. Consider purchasing policies and/or specifications.	6/30/2011	% of alternative fuel/low-emitting vehicles
<b>2</b>	Evaluate fleet and replacement program for age of vehicle, emissions and vehicle needs by job activities. Consider conducting a fleet specific emission inventory.	6/30/2011	Program in place
<b>3</b>	Implement fleet inspection and vehicle preventative maintenance program.	12/31/2012	Program in place
<b>4</b>	Implement fleet policies and associated education program including no idling policies and preventative maintenance tracking programs.	12/31/2012	Policies and educational campaigns
<b>5</b>	Evaluate expanding the use of Biodiesel in fleet vehicles.	12/31/2011	Gallons
<b>Objective and Target</b>			<b>Metric</b>
<b>B</b>	<i>Increase the number of faculty, staff and students using alternative transportation methods by 25% by December 31, 2015</i>		<i>% of faculty, staff, and students participating; tons per year of emission reductions</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Conduct a survey of the participants transportation decisions. Use information to build a commute solutions campaign and align transportation alternatives.	12/31/2010	Completed survey
<b>2</b>	Provide and promote alternative transportation networking resources.	6/30/2011	Number of networking opportunities
<b>3</b>	Develop and implement incentives to increase use of alternative transportation, including carpooling, bicycling and public transit, etc.	12/31/2012	Number of employees using alternative transportation
<b>4</b>	Develop and implement a reporting, tracking and award system for participants using an alternative mode of transportation.	12/31/2012	Number of employees using alternative transportation
<b>5</b>	Develop a bicycle plan and associated bicycle maps to increase use of bicycles as transportation to campus. Consider bicycle storage, shower and lockers. Coordinate with local municipalities on bike lanes.	12/31/2011	Plan developed
<b>6</b>	Develop a bicycle sharing program to encourage use of bicycles on campus.	6/30/2012	Program in place
<b>7</b>	Evaluate the potential for a Zip Car program at Texas A&M.	12/31/2011	Completed evaluation
<b>8</b>	Implement the elimination of traffic in the heart of campus as outlined in the Campus Master Plan.	7/1/2014	Completed

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<b>IMPROVING SOCIAL AND ECONOMIC FACTORS</b>			
<b>Increasing and promoting social justice and economic security</b>			
<b>Objective and Target</b>			<b>Metric</b>
<b>A</b>	<i>Be an invaluable asset in the community through economic and social sustainability programs by December 31, 2015</i>		<i>Number of programs and participants</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Implement or expand on existing partnership networks to engage local communities, students and former students to identify, develop and track initiatives.	12/31/2011	Number of social/economic sustainability programs
<b>2</b>	Engage with existing Texas A&M networks to expand opportunities for students to engage in volunteerism.	6/30/2012	Number of students participating and associated community service hours
<b>3</b>	Continue to expand on existing Career Center resources available for students interested in pursuing sustainability related jobs, including a green career section of the recruiting website. Provide information on green careers and associated degrees.	6/30/2012	Website updated
<b>4</b>	Engage the study abroad programs to consider a green passport program and/or sustainable travel programs.	12/31/2012	Programs implemented
<b>5</b>	Develop a social networking sustainability website.	12/31/2011	Website launched
<b>Objective and Target</b>			<b>Metric</b>
<b>B</b>	<i>Accountability: Establish structures, processes, and policies that hold all units accountable, and reward units and individuals for demonstrating their current standing, plans and progress in creating an environment where the diversity of individual identities and ideas are treated equitably in a climate that fosters success and achievement by all.</i>		<i>Completed comparisons showing progress</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Develop accountability structures and processes for monitoring and evaluating progress.	3/30/2010	Structures and processes developed
<b>2</b>	Establish baseline comparisons in representation and in climate; representation to involve presenting gender, race/ethnicity, and national origin diversity of students, staff and faculty in respect to peers and aspirant peers, national averages or appropriate pools of applicants; merit funding allocation pool to be distributed to units that excel in areas of the plan.	4/30/2011	Baseline comparison completed
<b>3</b>	Update FY12 baseline comparisons in representation and in climate; study equity issues and internal intervention strategies pertaining to climate and equity (particularly retention, salary, and satisfaction); merit funding allocation pool to be distributed to units that excel in areas of the plan.	12/31/2013	Comparison and study of strategies completed
<b>4</b>	Update previous year comparisons in representation and in climate; progress against comparators and major efforts to address problems to be identified; merit funding allocation pool to be distributed to units that excel in areas of the plan	Annually	Comparison completed

<b>IMPROVING SOCIAL AND ECONOMIC FACTORS (continued)</b>			
<b>Objective and Target</b>		<b>Metric</b>	
<b>C</b>	<i>Climate: Promote a positive and supportive climate by identifying aspects in the climate of individual units and the University which foster and/or impede a working and learning environment that fully recognizes, values, and integrates diversity in the pursuit of academic excellence.</i>	Completed assessments and plans	
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Conduct climate assessments of the following units repeated in three-year cycles: graduate students, faculty, staff, administrators and undergraduate students.	Three Year Cycle Beginning Fall 2010	Assessment completed
<b>2</b>	Evaluate the effectiveness to date of implemented climate programs and interventions and self report to the Council on Climate and Diversity.	6/30/2010	Self report completed
<b>3</b>	Develop a plan to improve the improve the unit's climate for diversity.	7/31/2010	Plan developed
<b>4</b>	Evaluate actions taken to clearly communicate commitment to diversity in media.	2/28/2011	Evaluation completed
<b>5</b>	Faculty, students and staff attend a required insensitivity educational program.	Once Every Two Years	Attend program
<b>6</b>	Offer diversity-related faculty development workshops.	Annually	Number of workshops
<b>7</b>	Establish a comprehensive staff diversity education plan.	10/31/2010	Plan established
<b>8</b>	Review and enhance guidelines for student organization diversity-related education.	Annually	Number of changes to guidelines
<b>9</b>	Develop a plan to offer workshop and classroom experiences to enhance skills with conflict management and difficult dialogues.	3/30/2010	Plan completed
<b>Objective and Target</b>		<b>Metric</b>	
<b>D</b>	<i>Equity: Integrate into the mission and goals for the University and units assurance that students, staff, and faculty (tenure and non-tenure track), regardless of identity, are all treated equitably.</i>	Completed University-wide study and related plans	
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Plan and design a University-wide equity study.	10/30/2010	Plan completed
<b>2</b>	Report on equity study results and recommendations to the President and Provost.	8/15/2011	Report completed
<b>3</b>	Develop plans to eliminate systemic inequities by units.	10/31/2011	Plan completed

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<b>EDUCATION AND RESEARCH</b>			
<b>Integrating sustainability into campus life, academics, and scientific investigation</b>			
<b>Objective and Target</b>			<b>Metric</b>
<b>A</b>	<i>Demonstrate leadership in University sustainability through environmentally responsible education and research by December 31, 2020</i>		<i>Completed elements</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Support and promote sustainability elements in the development of the Academic Master Plan.	6/30/2011	Sustainability elements in Academic Master Plan
<b>2</b>	Develop a peer-to-peer outreach program and designate student educators.	12/31/2012	Program in place
<b>3</b>	Identify sustainability speakers both within and external to the University. Develop a speaker series to coincide with major sustainability events.	12/31/2012	Program in place
<b>4</b>	Develop a comprehensive list of sustainability focused and related courses by Department and publish on website. Identify any gaps and work to fill areas of importance.	6/30/2011	Website launched
<b>5</b>	Develop undergraduate and graduate degree programs on sustainability.	12/31/2020	Programs in place
<b>6</b>	Continue the efforts of the Smart Energy Campus Initiative (SECI) with research in the five areas of interest: solar generation, use of electric vehicles, use of alternative technologies for assuring continuous electricity supply, optimization of energy uses in clusters of buildings, and energy efficient computational resources.	12/31/2012	Output in each area of research
<b>Objective and Target</b>			<b>Metric</b>
<b>B</b>	<i>Raise students participation in and level of awareness of sustainability</i>		<i>Number of programs and participants</i>
<b>Action Plan</b>		<b>Target Date</b>	<b>Metric</b>
<b>1</b>	Implement launch and marketing campaign for sustainability.	12/31/2010	Program in place
<b>2</b>	Incorporate sustainability into Fish Camp and New Student/Transfer Student Orientation Programs.	8/1/2010	Program in place
<b>3</b>	Continue and build upon existing outreach campaigns. Measure results through participation and/or surveys. Consider campaigns around national environmental and sustainability awareness days such as Earth Day, Pollution Prevention Week, Texas Recycles Day, and Earth Hour.	12/31/2011	Program in place
<b>4</b>	Identify areas to incorporate student participation in campus sustainability initiatives.	12/31/2011	Ongoing
<b>5</b>	Identify, evaluate, engage, and expand opportunities to engage students in sustainability as part of student clubs and organizations.	8/1/2010	Number of programs and participants
<b>6</b>	Conduct a sustainability literacy assessment.	12/1/2011	Assessment completed
<b>7</b>	Incorporate education (signage, brochures, etc.) into sustainability campus elements such as green buildings, community gardens, and energy projects. Incorporate sustainability elements in campus tours, brochures, and guides.	9/1/2012	Number of education elements

## MANAGEMENT AND FUNDING SUPPORT

Ensuring the sustainability program is managed and funded to meet the goals of the University			
Objective and Target			Metric
<b>A</b>	<i>Develop and cultivate the sustainability program to successfully implement University priorities and establish national recognition by December 31, 2015</i>		<i>Total program funding</i>
Action Plan		Target Date	Metric
1	Evaluate the level of staffing required to achieve University priorities.	12/31/2011	Staffing level equal to staffing need
2	Evaluate endowment information for Texas A&M and incorporate sustainability elements where feasible.	12/31/2010	Review completed
3	Evaluate potential for sustainability savings to be captured into separate fund for future initiatives.	6/30/2011	Completed assessment
4	Continue evaluation and pursuit of alternative streams of funding including "Green" student fee and a green giving program.	6/30/2012	Funding
5	Identify and acquire grant funding to support sustainability initiatives.	6/30/2011	Grant opportunities
Objective and Target			Metric
<b>B</b>	<i>Promote Texas A&amp;M sustainability programs</i>		<i>NA</i>
Action Plan		Target Date	Metric
1	Collaborate with other Universities and EPA Region 6 on sustainability programs.	ongoing	NA
2	Engage and collaborate with former students on sustainability initiatives.	ongoing	NA
3	Identify and apply for sustainability award and recognition programs.	ongoing	NA
4	Insert sustainability dates and programs into campus calendar.	6/30/2011	Complete
5	Frequently update sustainability website and develop and publish sustainability report on a regular schedule.	6/30/2011	Complete

## 4.0 Conclusion

This Sustainability Master Plan represents Texas A&M University's continued commitment to sustainability. Building on recent University-wide environmental and diversity program successes, Texas A&M University is enhancing its stewardship activities to create a synergy between the University's environmental, social and economic resources through the implementation of this Plan. By addressing the twelve components detailed in this Plan, sustainability metrics will be tracked, and progress on achieving the objectives and targets, reported. It is through the continued commitment and participation by the Texas A&M University community at large to the sustainability metrics presented in this Plan that long-term environmental, social and financial stewardship will be achieved.

