



Texas Parks and Wildlife Department

Energy & Water Management Plan

(A.K.A. The 2020 Sustainability Plan)

5-year plan Established November 2014

Updated October 2018

OFFICE MEMORANDUM

COORDINATION - ROUTING			
DIV.	NAME	INITIAL	DATE
EO	Carter Smith		
INF	Scott Stover		
INF	Andee Chamberlain		
REMARKS:			
RETURN TO: Andee Chamberlain			

TO: Carter Smith

FROM: Andee Chamberlain
Sustainability Programs Manager

SUBJECT: Approval of 2020 Sustainability Plan

RE: Executive Approval to implement the TPWD 2020 Sustainability Plan

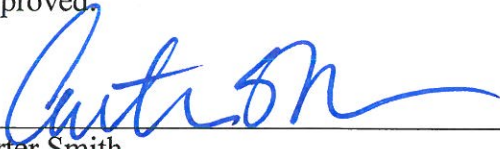
DATE: November 3, 2014

Attached for your review and approval is the Texas Parks and Wildlife 2020 Sustainability Plan.

If approved, this will serve as the guiding document toward implementation of a plan by Texas Parks and Wildlife to address opportunities that will improve environmental sustainability within the agency. This plan is intended to address sustainability opportunities and initiatives over the next 5 years; 2015-2020.

A presentation was given and the TPWD 2020 Sustainability Plan was discussed at the TPWD Division Directors meeting on November 3, 2014. The plan was circulated to the Division Directors and Deputy Executive Directors for review and comment on July 18th, 2014. All comments received have been addressed and the plan has been revised in response.

Approved:



Carter Smith
Executive Director



Date



Texas Parks and Wildlife Department

2020 Sustainability Plan

EXECUTIVE SUMMARY

TPWD Sustainability Program Mission

To manage and conserve the resources of the Texas Parks and Wildlife Department through recycling and waste reduction efforts, energy efficiency investments, and water conservation practices in order to protect and preserve natural resources and to set an example as a resource agency.

Executive Summary

Texas Parks and Wildlife Department (TPWD) is a conservation agency, therefore resource conservation holds significant importance in all that we do, from our agency mission to our Land and Water Resource Conservation and Recreation Plan. TPWD leaders recognize that environmental sustainability has an impact on both the fiscal budget as well as the public's perception of our agency. **As a conservation agency we must be frontrunners in the area of sustainability, encouraging our visitors and constituents to follow our lead in their own homes and in their day to day lives.**

The 2020 Sustainability Plan focuses primarily on actions that can be taken in the next 5 years. However, the commitment to conservation is ongoing effort that will continue to require thought, input, and dedicated action well into the future. This will be an ongoing process requiring regular evaluation of where we are as a conservation agency and how we plan to grow in our sustainability efforts.

Within this plan there are broad, agency level goals that require participation of all divisions to be successful. They will provide structure and guidance toward achievement of our agency sustainability goals. In addition to the overarching agency goals, there will **also be divisional action items developed, managed, and tracked by each division.** These actions will support the broader agency-level goals by identifying more focused, specific action items.

Each division will assign a Point of Contact (POC) to represent their Division on the TPWD Sustainability Committee. These team members will work to share information about how their division is working to carry out the sustainability action items that they have developed. Additionally, they will voice concerns, discuss obstacles, and share success stories to help advance ongoing work. The Sustainability Committee representative will **provide bi-annual updates to the Executive Office** about how each division is meeting their self-prescribed sustainability action items and how those are helping meet the goals set forth in this plan.

Sustainability for TPWD can be addressed in three major categories: Energy Efficiency, Water Conservation, and Waste/Recycling. Just as the Land and Water Plan provides strategic vision for TPWD, the Sustainability Plan offers strategic direction for the agency to increase and advance resource conservation efforts. Additionally, the **agency mission is supported by the mission of the TPWD sustainability program, offering a more detailed focus on how we can conserve the natural resources of Texas.**



Texas Parks and Wildlife Department

2020 Sustainability Plan

TPWD Agency Mission

To manage and conserve the natural and cultural resources of Texas and to provide hunting, fishing and outdoor recreation opportunities for the use and enjoyment of present and future generations.

TPWD Sustainability Program Mission

To manage and conserve the resources of the Texas Parks and Wildlife Department through recycling and waste reduction efforts, energy efficiency investments, and water conservation practices in order to protect and preserve natural resources and to set an example as a resource agency.

Introduction

Texas Parks and Wildlife Department (TPWD) is a conservation agency, therefore resource conservation holds significant importance in all that we do, from our agency mission to our Land and Water Resource Conservation and Recreation Plan. Furthermore, TPWD Executive Director, Carter Smith, and other leaders within the department have established sustainability as an agency priority. Texas State Parks Division leaders have also shown the importance of sustainability to staff by encouraging a Regional Green Team, discussing the topic at their state-wide conference, and establishing a category for sustainability in their employee recognition award program. TPWD leaders recognize that environmental sustainability has an impact on both the fiscal budget as well as the public's perception of our agency. As a conservation agency we must be frontrunners in the area of sustainability, encouraging our visitors and constituents to follow our lead in their own homes and in their day to day lives.

"What is Sustainability? Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations."¹

¹ <http://www.epa.gov/sustainability/basicinfo.htm#sustainability>

Sustainability considers our use of resources so that we will continue to have the water, materials, and resources needed to maintain human and environmental health.

The 2020 Sustainability Plan focuses primarily on actions that can be taken in the next 5 years. However, the commitment to conservation is ongoing effort that will continue to require thought, input, and dedicated action well into the future. While much of the plan may remain relevant over the years, this plan will require periodic re-evaluation and updates. As programs and solutions are developed to deal with current obstacles new obstacles may arise. These issues that have not yet been identified need to be addressed through a new or updated plan. This will be an ongoing process requiring regular evaluation of where we are as a conservation agency and how we plan to grow in our sustainability efforts.

Within this plan there are broad, agency level goals that require participation of all divisions to be successful. They will provide structure and guidance toward achievement of our agency sustainability goals. In addition to the overarching agency goals, there will be divisional action items developed, managed, and tracked by each division. These actions will support the broader agency-level goals by identifying more focused, specific action items. Some examples of divisional level sustainability goals may be found in the **Appendices** of this document.

Each division will assign a Point of Contact (POC) to represent their Division on the TPWD Sustainability Committee. These team members will work to share information about how their division is working to carry out the sustainability action items that they have developed. Additionally, they will voice concerns, discuss obstacles, and share success stories to help advance ongoing work. The Sustainability Committee representative will provide bi-annual updates to the Executive Office about how each division is meeting their self-prescribed sustainability action items and how those are helping meet the goals set forth in this plan.

Background

Through an examination of the past efforts that have been taken toward achieving sustainability within Texas Parks & Wildlife, we can begin to develop achievable and targeted goals for our future. The agency developed a facilities specialist position in 2009 to manage energy usage reporting and management. That position has grown to encompass leadership of the TPWD Green Team and targeted sustainability projects. There is a wide opportunity for growth as the agency enhances its efforts in recycling, energy efficiency, and water conservation.

As we develop future plans and measurable sustainability goals, we continue to review what has worked in the past and what measures are currently in place, working to capitalize on our prior successes and learning from our less successful ventures.

Sustainability is a Strategic Part of the Land and Water Resources Conservation and Recreation Plan

“The Land and Water Resources Conservation and Recreation Plan (known as the Land and Water Plan, or “the Plan”) serves as the strategic visionary document guiding the TPWD in achieving its mission to conserve land and water resources and to provide outdoor recreation opportunities for all Texans.” This guiding document for TPWD provides supporting documentation as to why sustainability is an agency priority.

“As our population grows, so will the impacts and pressures on our lands and waters. The growing number of Texans seeking outdoor experiences will call for new recreational opportunities. Emerging energy technologies will require us to balance new energy sources with their potential impacts on wildlife habitat. Conserving adequate water for healthy communities, economies, and our environment will be of paramount importance in the years to come. As we tackle these many challenges, we will continue to utilize the best available science-based research and staff expertise and will rely on the input of state leaders and our public and private partners.”²

“Texas Parks and Wildlife Department manages over 770,000 acres of wildlife management areas and 600,000 acres of state parks, natural areas and state historic sites. With 12 distinct ecoregions covering approximately 268,500 square miles, Texas has an astounding array of climates, soils and habitats. High plains, wetlands, mountains, deserts, forests and coastal marshes provide habitat for the fish and wildlife resources that help define the landscape.”³ As an agency we are responsible for an expansive amount of public lands. This plan will help TPWD sustainably manage our state’s natural resources and provide an example to all Texans, which directly supports the vision of the TPWD Land & Water Plan.

Overarching Plan Goals

Just as the Land and Water Plan provides strategic vision for TPWD, the Sustainability Plan offers strategic vision for the agency in how it can increase and advance resource conservation efforts. Additionally, the agency mission is supported by the mission of the TPWD sustainability program, offering a more detailed focus on how we can conserve the natural resources of Texas. Sustainability for TPWD can be addressed in three major categories: Energy Efficiency, Water Conservation, and Waste/Recycling.

² Letter to the People of Texas

https://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_pl_e0100_0687_2013.pdf

³ https://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_pl_e0100_0687_2013.pdf (p. 4)

Energy efficiency is one of the easiest and most cost effective ways to reduce operational costs for our facilities and has the added benefit of combating climate change. It is the backbone of sustainable building and makes smart business sense as it provides a quick return on the initial investment in most cases through energy savings. Systemic issues result from TPWD's continued use of outdated, inefficient equipment, which is due to a short-term, needs focus on initial costs rather than seeking long-term savings and benefits of investment in efficient equipment. It is in TPWD's best interest to address this issue and take action as soon as possible to remedy the situation. While much of the opportunity for energy efficiency comes from smart choices in building construction and renovation, there are many opportunities for divisions outside of Infrastructure to modify behavior through purchasing practices, transportation, and operations that will positively impact energy use. Each division will be able to best identify areas for energy savings within their own daily operations.

Water conservation is especially important to TPWD because the lack of water resources has a severe and direct impact on agency operations. In addition to traditional water services for visitors including drinking water and bathing facilities, TPWD uses water for irrigation, wetland enhancement, and fish hatcheries. Severe drought has led to low water tables and devastating wildfires which have resulted in site closures across TPWD divisions impacting Wildlife Management Areas, State Parks, and even Fish Hatcheries. The State of Texas is facing exceptional or extreme drought resulting in prolonged, dry conditions that put a strain on water supplies. TPWD must educate its visitors and lead by example in water conservation to help alleviate the negative impacts of drought. Water conservation practices and conservation messaging can be integrated into many areas of TPWD work. Again, each division and program will be able to best identify opportunities for water conservation.

Finally, **waste mitigation and recycling** are areas ripe for improvement at TPWD. As recycling programs in urban areas have become well established, rural areas (where many of our facilities are located) are just beginning to offer recycling programs. As a result, many TPWD facilities in those areas have struggled to implement recycling programs, typically citing cost as the major obstacle. TPWD operates in a vast range of areas and each one presents unique challenges and solutions to the waste and recycling issue. Recognizing that one solution will not fit all, each division will set their own actions toward meeting TPWD waste reduction efforts.

Although these categories of sustainability are discussed in separate sections of this document, it is important to acknowledge that they are interconnected. Conserving water for instance also saves the energy needed to clean and pump water for distribution. Recycling uses less energy to generate base materials for new products than processing virgin resources. Processing virgin materials is also often water intensive and recycling materials uses less water to produce the same end product. Like our environment, conservation of resources is inter-connected and small efforts to conserve can make a rippling impact.

Energy

Background:

Texas Parks and Wildlife Department spends nearly \$5 Million dollars annually on electric utilities. Energy prices are at a historic low today but market changes and new regulations have created projections that utility rates will increase rapidly over the next decade. This means that TPWD could double or even triple the amount of public dollars spent in operation of its facilities. The cost of postponing energy efficiency upgrades will rise as we delay investment. In addition, many TPWD buildings were built in the 1980's or earlier. They require attention and investment to be brought up to today's efficiency standards.

Investments in more efficient equipment are often delayed because they may cost more initially compared to less efficient alternatives. Inefficient equipment may be used because it continues to function, even when the new efficient equipment will pay for itself through energy savings and may provide a more comfortable environment. One example is the continued use of inefficient T-12 fluorescent tube lighting throughout TPWD facilities when more efficient upgrades have a return on investment of 3 years or less.

Overall savings from more efficient equipment is realized as the apparatus continues to operate over time. It is worth noting that savings are typically achieved within operational budgets, separate from construction or repair budgets which normally fund these upgrade projects. This would impact how the return on investment in energy saving equipment is considered and may require a shift in agency accounting.

Every work group within TPWD makes daily decisions about how they will use energy. Choices may include whether to purchase EnergyStar rated or energy efficient equipment, what vehicles are purchased and how they are driven, or when to power down equipment. Simply turning things off when they aren't being used can have a significant impact on energy consumption. Everyone can play a part in helping to conserve energy.

TPWD must make investment in energy efficiency a priority both for cost savings and to reduce environmental impact. Power plants and natural gas use are currently responsible for about 50% of greenhouse gas emissions, which contribute to the risks of global climate change.⁴ Power plants are also a major contributor to the amount of mercury found in waterways. This leads to increased levels of mercury in fish populations. Energy efficiency and energy conservation will have a direct and positive impact on TPWD.

⁴ http://www.epa.gov/cleanenergy/documents/suca/consumer_fact_sheet.pdf

Goals:

- By 2020, reduce TPWD net consumption of electric energy and natural gas by 10% from 2010 levels through investment in energy efficient equipment and through behavioral changes.
- By 2020 install or acquire over 1MW of solar photovoltaics used by TPWD facilities
- By 2020 track the energy use of all applicable facilities⁵ through the EnergyStar Portfolio Manager⁶
- By 2020 each division will develop and implement an educational based plan to educate staff and/or constituents about energy conservation and/or efficiency.
- By 2020 convert 75% of all vehicles to alternative fuel or low-emission vehicles.

Several opportunities for targeted or specific action are identified in **Appendix A** of this document. They serve as a guide for divisions as they develop their own goals and actions for energy use reduction. Many of these actions seek to set sustainable building standards in construction. Although establishment of building standards is mainly Infrastructure related, each division may find these helpful in developing directly applicable actions. These will help TPWD take a step toward additional sustainable construction and more sustainable operation of those facilities.

Finance Plan:

Typically, funding for operating budgets and construction is provided through general fund appropriations provided by the Texas Legislature. However, there are several alternative financing options worthy of consideration when the proposed project will yield energy savings. There is good reason for considering these alternatives when traditional funding sources are not available. Many times energy efficiency projects will pay for themselves in energy savings long before traditional funding sources can be allocated. Moving forward on energy efficiency projects not only helps TPWD conserve resources, it helps TPWD reduce operation costs thereby saving money during the operational life of the equipment. The following are a few financing options to consider in energy efficient upgrade projects.

⁵ The EnergyStar portfolio manager sets parameters, such as size and building use, for the types of buildings that may be analyzed.

⁶ <http://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager?s=mega>

Return on Investment (ROI) - Set a minimum payback or standard for selecting or rejecting an energy efficiency project. For instance, if a project will result in a simple ROI of less than 3 years, that project receives the green light to move forward using dedicated agency resources.

Dedicated Agency Resources – Create a project funding source to move projects forward that have a quick return on investment. Establish a sustainable funding source to replenish this fund by requiring projects to contribute a portion of their energy savings. Set policies that direct a portion of funding received from grants, incentives, and energy savings toward future efficiency projects.

Incentives -TPWD has properties that operate in both regulated and de-regulated utility areas. Incentives may be available in both areas but primarily in de-regulated areas.

LoanStar Loans - The Texas LoanSTAR (Saving Taxes and Resources) revolving loan program finances energy-related cost-reduction retrofits for state, public school district, public college, public university, and tax-district supported public hospital facilities.⁷ Low interest rate loans are provided to assist borrowers in financing their energy-related cost-reduction efforts. Applicants repay the loans through the stream of energy cost savings realized from the projects.

⁷ 10 Tex. Gov. Code §2305.032 <http://www.statutes.legis.state.tx.us/Docs/GV/htm/GV.2305.htm>

Water

Background:

Large sections of the state are experiencing exceptional or extreme drought. These prolonged, dry conditions put a strain on water supplies for all uses. An extensive study conducted by the Texas A&M Forest Service estimated that 301 million rural trees were killed by the 2011 Texas drought⁸. This is just one example of the overwhelming impact drought has had on Texas. Drought impacts TPWD negatively in a number of ways including reduction in visitation which results in a reduction of fees collected. It can impact conservation practices such as wetland enhancement and fish breeding. Drought also leads to extreme fire hazards which can have devastating results like the Bastrop or Possum Kingdom Wildfires leading to a dramatic impact on the natural resources, wildlife, and TPWD finances.

Even if the current extreme drought conditions were not diminishing Texas water supplies, the rapidly growing population in Texas is enough to seriously threaten the availability of water resources. The Texas Data Center and the Office of the State Demographer project that the state's population will increase by 71.5 percent between 2000 and 2040, from 20.9 million to 35.8 million.⁹ Across the state, as populations grow, water resources will be stretched further and be in higher demand. TPWD has an opportunity to do a better job of conserving water at our facilities and educating visitors about the importance of water conservation for the benefit of current and future Texans.

Goals:

- By 2020, establish an agency policy to only install fixtures with the WaterSense¹⁰ label and retrofit 50% of existing water fixtures with WaterSense¹¹ labeled products.
- By 2020, install 10 rainwater catchment systems in public areas for educational and landscaping or wildlife use.
- By 2020 each division will develop and implement an educational based plan to educate staff and/or constituents about water conservation and/or drought issues.

There is a fantastic opportunity to save water through efficient fixtures while simultaneously modeling efficient water use for our visitors. Through education and leading by example TPWD

⁸ <http://texasforestservice.tamu.edu/main/popup.aspx?id=16509>

⁹ <http://www.window.state.tx.us/specialrpt/tif/population.html>

¹⁰ http://www.epa.gov/watersense/about_us/watersense_label.html

¹¹ http://www.epa.gov/watersense/about_us/watersense_label.html

will be able to reduce water waste across the state, benefiting both humans and wildlife. Through the fulfilment of these goals and beginning the relatively inexpensive investment in efficient fixtures, TPWD can be a state leader in water conservation. A few specific actions that could be taken to advance water conservation efforts at TPWD have been identified in **Appendix B** of this document. These may serve as a resource for divisions as they develop their own goals and actions for water conservation.

TPWD obtains water from a variety of non-traditional, municipal sources. Most of these sources such as water right permits, groundwater, well water, and contracted supplied water are not metered or captured in current utility management systems. In order to manage what we consume we must measure it. Although metering and documenting usage from these non-traditional sources may be difficult, it will help TPWD identify how much water is being consumed. This will help the agency identify changes in consumption or compare usage which could lead to the identification of conservation opportunities and improved management of the resource.

Finance Plan:

Some funding may be available to help assist with agency water conservation efforts. Many municipal water providers are adopting conservation programs and offer incentives and rebates as part of that initiative. Additionally, both federal and state government entities recognize the impact of drought and have allocated funding to provide assistance in water resource conservation as well as in provision of educational messages. TPWD is an excellent candidate to utilize and leverage these opportunities and the agency should explore these prospects.

Incentives - Incentives may be available from local water companies to install water conserving fixtures

Grants - The US Department of the Interior, Texas Water Development Board, and State of Texas have offered various grants in the past to assist state agencies improve water efficiency standards. These resources are likely to be available again in the future as a potential funding source.

Waste & Recycling

Background:

TPWD does not have an established agency recycling or waste policy. Although some sites (e.g. Austin HQ and Seminole Canyon SP) have comprehensive recycling programs, there are many offices and remote park locations that do not recycle anything. As recycling programs in more populated, urban areas expand and gain popularity the recycling opportunities in rural communities are beginning to be established. TPWD state park visitors expect to recycle when they visit a facility; therefore, TPWD can play a strategic role in building the momentum needed to expand recycling opportunities in many rural areas. We can also learn from the success that other agencies have had with developing recycling programs in remote areas.

The National Parks Service has established a strong waste diversion program and currently offers recycling in every national park. The Department of the Interior (DOI) has set the current diversion rate goal at 50% per year by 2010 (Note: This goal is likely to be revised by DOI in the near future; states may have higher recycling goals). This means that 50% of all solid waste materials generated by National Parks should be diverted from disposal at a landfill through reuse, recycling, composting, or energy recovery programs.¹²

Goals:

- By 2020, establish waste diversion programs (including recycling of plastic and aluminum) in at least 50% of its facilities statewide.
- By 2020, collect and report diversion rates at all TPWD facilities annually.
- Develop partnerships with community organizations that are also working toward waste diversion, including Keep Texas Beautiful and its affiliates¹³ to leverage recycling opportunities in small or rural towns.
- By 2020 each division will develop and implement an educational based plan to educate staff and/or constituents about waste mitigation and recycling.

TPWD facility recycling can be achieved in a variety of ways, although one method of implementation will not meet the needs of every site. Partnerships with community organizations that share a similar mission of waste diversion in their community, such as Keep

¹² http://www.doi.gov/greening/waste/upload/SW_Ref_Guide_final.pdf

¹³ <http://www.ktb.org/about-us/affiliate-network.aspx>

Texas Beautiful affiliates, local municipal waste and recycling departments, and local area Councils of Government can be excellent resources to help facilities overcome recycling roadblocks. Hauling fees can often be the largest roadblock to initiating recycling programs in rural or remote areas. Aggregating materials through community partnerships may help to reduce cost-prohibitive hauling fees. Additionally, partnering with other governmental entities may offer opportunities to deposit recyclables at a more central location, saving additional hauling fees. The attached **Appendix C** includes some specific waste & recycling actions that can be taken to initiate a successful waste reduction program. These may serve as a resource for divisions as they develop their own goals and actions for waste diversion and recycling programs.

Finance Plan:

Although, the cost of establishing recycling programs and other waste diversion programs in a rural area can be prohibitive, which is currently the most cited reason sites provide for lack of participation, many times there are opportunities to offset these costs. For example, hauling charges are one of the main reasons for high costs. Cost-saving efforts are being made among rural communities to aggregate materials for hauling. TPWD could leverage partnerships with local cities, counties, Keep Texas Beautiful affiliates, and other non-profit organizations to increase and expand recycling and waste diversion opportunities within our TPWD facilities and surrounding communities. Through these partnerships, tipping fees to dump recyclables may be waived. Additionally, assistive funds may be available through the Texas Commission on Environmental Quality or the Local Council of Governments.

Summary

Texas Parks and Wildlife Department has an opportunity and a responsibility to lead Texas toward a more sustainable future. Adopting the goals set forth in this plan and establishing sustainability as an agency priority is an integral part of meeting the TPWD mission to protect and preserve the natural resources of Texas for present and future generations. Each TPWD employee has a part to play regardless of the division they work within or the job they do and each individual can make an impact. Although it will require time, effort and resources to implement this plan the result will be a more resilient and effective agency that will be prepared to face the environmental challenges ahead.