APPENDIX D

Sustainability Analysis

DELTA AIRPORT CONSULTANTS, INC.

Sustainability Analysis
Las Cruces International Airport

Introduction

In conjunction with the 2016 Airport Action Plan, the City of Las Cruces (City) has developed its first Sustainability Analysis for the Las Cruces International Airport (LRU). This analysis will determine a vision for sustainability at LRU, identify relevant sustainability categories, and determine a series of sustainability goals, objectives, and initiatives to achieve each goal. Incorporation of the Sustainability Analysis into the Airport Layout Plan allows for an integrated sustainable design approach and allows solutions to be reviewed for long-range cost, savings, and impacts. Sustainability at LRU is about using innovative techniques to create positive impacts for people, planet, and profits.

Sustainability at LRU is about creating positive impacts for people, planet and profits.

Related Resources

Sustainable Aviation Guidance Alliance (SAGA)
www.airportsustainability.org

Airport Cooperative Research Program (ACRP) Report 80: Guidebook for Incorporating Sustainability into Traditional Airport Projects

ACRP 119: Prototype Airport Sustainability Rating System

ACRP 10: Airport Sustainability Practices

ACRP 66: Lessons Learned from Airport Sustainability Plans

City of Las Cruces Sustainability Action Plan 2014-2017

SUSTAINABILITY program
Nature based decisions that inspire a vibrant economy and community
© City of Las Cruces

Sustainability Overview

Sustainable decision making has set a new standard of analysis for projects and operations; a standard that moves past the traditional system of weighing alternatives purely on the basis of economics, and uses instead a triple bottom line analysis of economic, social, and environmental factors.

Sustainability is quickly becoming a way of life in the City of Las Cruces. The City adopted a Sustainability Action Plan 2014-2017 in June 2014 to guide staff and department actions over the three year life of the plan. The Action Plan uses the principles of the triple bottom line (Economic Viability, Environmental Health, and Social Responsibility) as the overarching goals guiding the development of the plan, and organizes the plan objectives into four themes: Energy, Water, Materials, and Community. Several three-year objectives are identified for each theme, with collaborating City departments associated with each objective listed. For example, under the theme Energy, a three-year objective is, "Decrease energy consumption and greenhouse gas emissions in City buildings and streets by 7 percent of the end of year 2013 baseline rate" with the Public Works and Transportation departments listed as Collaborating Departments. The Transportation Department, which encompasses the Airport, is mentioned in many of the three-year objectives in the City's Sustainability Action Plan; however, LRU is not specifically named, and some of the objectives do not apply to the airport.

This Sustainability Analysis will build on the City's existing Action Plan by maintaining the four themes: Energy, Water, Materials, and Community, and will include objectives that are more pertinent to LRU.

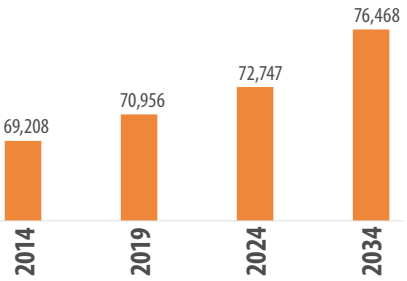
Las Cruces International Airport

LRU is a regional general aviation airport located on approximately 3,314 acres in south-central New Mexico. It is owned and operated by the City of Las Cruces. LRU serves a diversity of general aviation users, hosts military operations and unmanned aircraft systems (UAS) flight testing, and while there is no longer scheduled commercial service at LRU, it maintains a CFR Part 139 certification for commercial service operations. More detailed information on the nature of these operational characteristics is covered in the Master Plan Update.

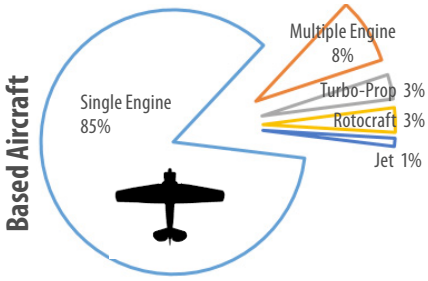
LRU **Quick Facts**

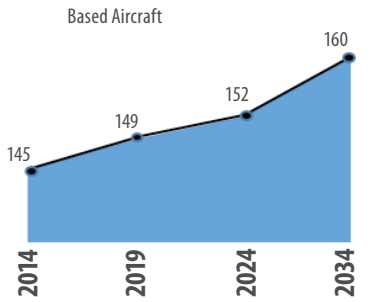
General Aviation Airport

Annual Operations
(General Aviation and Military)



Based Aircraft





Airport Characteristics

3,314 acres

As of 2016

Runway 12-30
7,506 feet long

Runway 4-22
7,501 feet long

Runway 8-26
6,069 feet long

Hawker 800

Airport Design Criteria

C-II-2400
Runway Design Code

images from manufacturers' websites

Sustainability Analysis

Sustainability at LRU

A Vision for Sustainability at LRU

The guiding principle identified in the City's Sustainability Action Plan is as follows, and includes the principles of the triple bottom line:

We provide the responsible, proactive and innovative leadership necessary for the successful growth of our community, advancement of our economy, nurturing of our environment, and realization of Las Cruces' existing future.

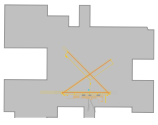
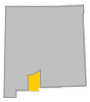
Within the airport industry, the triple bottom line definition has been expanded to include a fourth element, operational efficiency, and is therefore referred to as the EONS (Economic viability, Operational efficiency, Natural resource conservation, and Social responsibility) model. The guiding principle for this airport Sustainability Analysis has been enhanced from the City's version to include this holistic approach:

EONS Model. Developed by ACI-NA sustainability working group.
Source: SAGA Website.

We promote the successful advancement of our Airport's economic viability and operational efficiency in a way that fosters social and environmental capital- and we continue to expand the realm of impact of sustainable decision-making to align with local, regional, and global initiatives.

LRU Sustainability Vision Statement

To promote economic viability and operational efficiency while fostering social and environmental capital and continue to expand the realm of impact of sustainable decision-making to align with local, regional, and global initiatives.

Organizational	Local	Regional	Global
			
Revenue and Expense	Community Initiatives	Resource limitations	Resource Consumption
Employee Relations	Local Economy	Environmental Sensitivities	Carbon Emissions
Customer Satisfaction	Infrastructure Updates		Social Fairness
Site Ecology	Community Outreach		

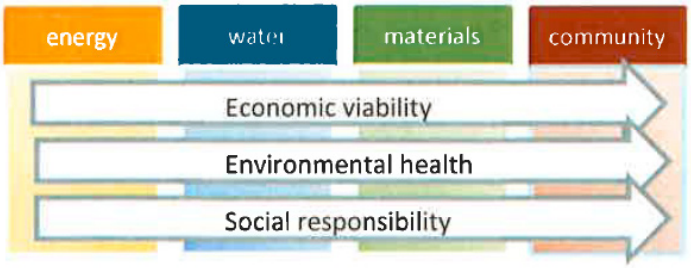
Sustainability Goals

In order to continue operating, LRU must remain economically viable. Sustainable measures should therefore seek to strengthen the economic viability of LRU through decreased cost, increased revenue, and the sound management of resources. The primary function of the Airport is to provide a safe and effective facility for the operation of aircraft. Ecological function both on the Airport and in larger realms of influence can have direct or indirect impacts on LRU. For this reason, sustainability initiatives should seek to promote environmental stewardship to the degree that it is not in conflict with economic viability or the primary function of the Airport. As the City's Sustainability Plan points out, healthy ecosystems provide many "services" for free that would be expensive for humans to duplicate, such as providing flood control and producing clean air and water.

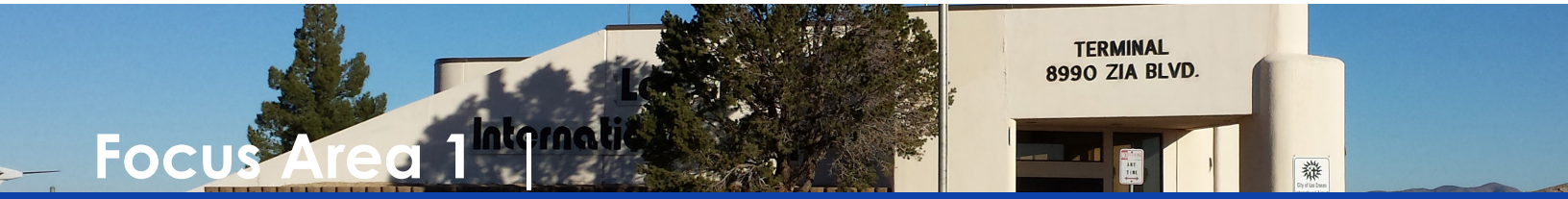
Sustainability initiatives should seek to promote social equity, minimizing undue impacts to the community during operations and construction, and to promote a balanced workplace. Likewise, sustainability initiatives should continue to foster community participation and partnership for alignment of goals and initiatives. In this way, sustainability should improve the quality of life for every member of the community.

There are four focus areas for sustainability at Las Cruces International Airport, which are the same focus areas included in the City's Sustainability Action Plan:

- *Energy*
- *Water*
- *Materials*
- *Community*



images from City of Las Cruces Sustainability Plan p8



Focus Area 1 | Energy

Overview

LRU receives electrical power from El Paso Electric; natural gas is provided by the Rio Grande Natural Gas Association. Electricity costs at LRU have increased 14 percent over the last two years, and natural gas consumption has decreased by 9 percent over the last two years. The center table on page 7 shows LRU's cost for electricity in 2013, 2014 and 2015 and how the cost continues to increase. LRU's energy (electric and gas) consumption could increase with future growth unless energy reduction measures compensate for the growth. LRU should focus its efforts on reducing energy consumptions through benchmarking and monitoring consumption, improving education and communication, using more energy efficient equipment, and changing to renewable energy sources.

Below are some potential Energy objectives for the City to consider for LRU:

Related Resources

ACRP Report 141 Renewable Energy as an Airport Revenue Source

National Renewable Energy Laboratory for State and Local Governments at http://www.nrel.gov/tech_deployment/state_local_governments/stat.html

energy objectives

1. **Reduce Electricity** usage
2. **Improve Education** and **Communication**
3. **Evaluate Renewable Energy** opportunities

Energy Baseline & Monitoring

It is important to measure energy use on a frequent and consistent basis; therefore, LRU should set a baseline for future comparative analysis. The comparative analysis process is described below. The baseline can be the energy consumption by type (electric, natural gas, etc.) of a current or past year.

To evaluate energy costs, it is good to have the total consumption, but it is best to track consumption by each meter on a monthly basis. Installing SmartMeters will allow LRU to monitor usage more accurately. By knowing where energy is being consumed, LRU can conduct a comparative analysis of the baseline to current data to identify spikes or trends. Spike and trend analysis will indicate where and when energy use is increasing or decreasing. LRU can determine what areas need more attention as well as what energy strategies are working best. If there is an unusual spike, then LRU will notice it quickly, preventing extra energy consumption and high energy costs.

In 2015, LRU used over 198,000 kWh of electricity in the three buildings:

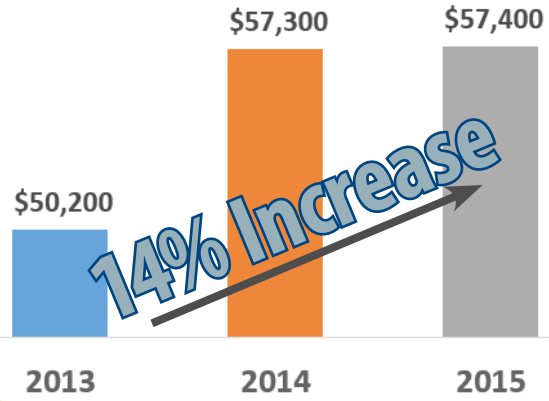
- *8960 Zia Blvd Office - Old Adventure Aviation Building*
- *8990 Zia Blvd - Airport Terminal*
- *9448 Zia Blvd Lghts - Airport Street Lights*

That represents over 64 percent of the total airport electric energy usage accordingly. LRU should concentrate energy conservation measures on these three buildings to significantly reduce energy consumption.

Electricity **Current**

ENERGY USAGE

$57,400
electricity in 2015



Sustainability Analysis

Energy Reduction

One of the most effective ways to reduce energy costs is by reducing consumption. Consumption can be reduced in many different ways, but education and communication are some of the easiest and least costly ways to reduce consumption. Educating employees, tenants and customers on energy saving best practices and communicating those best practices can have immediate results. Some best practices can be seen on the Sustainable Aviation Guidance Alliance (SAGA) sustainable practices web page at http://www.airportsustainability.org/sustainable-practices. The table below provides some examples of the 945 best practices that LRU could implement from the SAGA website.

LRU has been working on reducing energy consumption. The Airport has installed Light-Emitting Diode (LED) bulbs in the Precision Approach Path Indicator (PAPI) lights on the airfield. Similarly, the City of Las Cruces is installing LED street lights throughout the City. The street lights on the airport are slated to be replaced with LED lights, but as of the summer 2016 they had not yet been replaced.

If the opportunity arises, the next step would be to perform an energy audit of the high energy use buildings or systems. At LRU, the top three energy consuming buildings are Old Adventure Aviation Building, Airport Street Lights, and Airport Terminal in most to least consumption order. These three buildings account for 64 percent of the electrical consumption and should comprise the first audit. If an audit cannot include all three buildings, then audit as much as possible starting with the highest consuming facility first (Old Adventure Aviation Building). The audit will examine lighting, building envelope (windows, insulation, roof, etc.), HVAC, and all mechanical systems. The results of the audit will help determine the most cost effective measures to reduce consumption and energy costs.

In the meantime, replacing incandescent lights with LED lights, installing EnergyStar™ appliances and equipment when upgrading, and building energy efficient new construction are some realistic best practices. Based on an initial analysis some future projects for LRU should include installing LED

SAGA Best Practices

1. Connect monitors, printers, and other accessories to a power strip/surge protector. Turn off the power strip to prevent them from drawing power (even when shut off) when they are not in use.
2. Require a U.S. Green Building Council LEED (Leadership in Energy and Environmental Design) or equivalent building standard and green operating commitment from non-airport controlled buildings that are undergoing construction activities, including renovations.
3. Do not use computer screen savers since they consume more energy than not using one and/or they may disable power-down or "sleep mode" features.
4. Install waterless or water-efficient urinals.
5. Purchase high post-consumer recycled content paper.

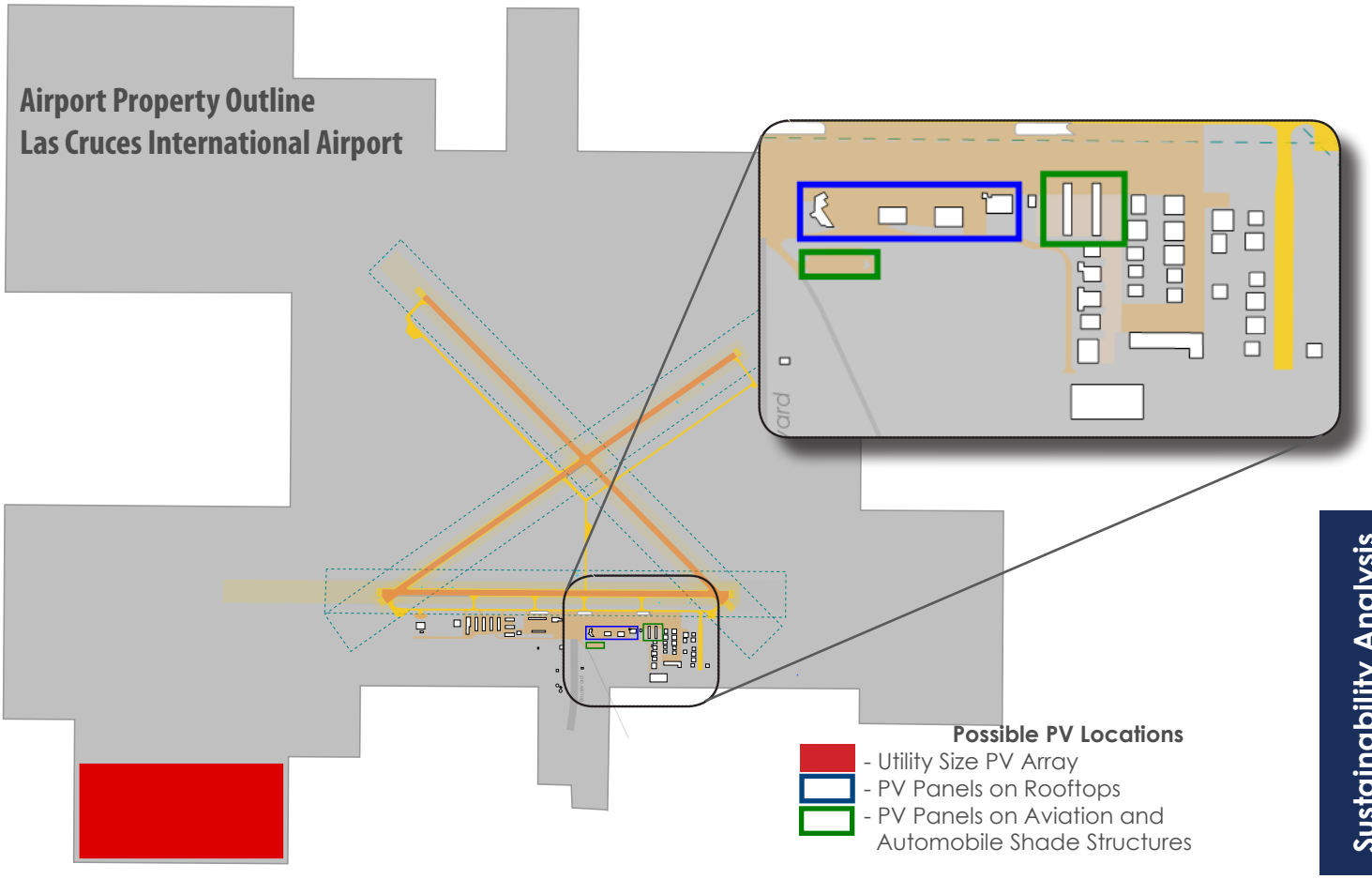
runway and taxiway lights, LED lights both inside and outside buildings, motion activated light controls in bathrooms which turn off the lights turn when the bathrooms are not occupied, and programmable smart thermostats in high energy use buildings.

As future repair, maintenance, and new construction projects are developed, every project should be reviewed for energy saving opportunities. It is almost always more cost effective to install energy saving devices during initial construction than during retrofit.

Renewable Opportunities

Renewable energy is sustainably generated energy from non-fossil fuel sources including, but not limited to: solar photovoltaic generation, solar thermal, hydroelectric, wind turbine systems, biomass, and geothermal energy. Renewable energy can be supplied to power terminal and building operations, airfield and street lighting, cargo and maintenance hangars, and other infrastructure and operations both landside and airside.

As previously noted, three buildings (Old Adventure Aviation Building, Airport Terminal, and Airport Street Lights) consume the most electricity; therefore, it is recommended that installation of a solar photovoltaic (PV) array on the roofs of these buildings or on top of the aviation shade structures be further evaluated. A separate solar PV analysis is required to properly evaluate the size, cost benefit and to determine if the buildings can structurally support the additional load of the PV panels.



Another opportunity is for LRU to partner with a local utility company to build a utility sized Photovoltaic (PV) solar array, which would generate more electricity than consumed by the airport. The airport could lease property to the utility company through a power purchase agreement. This often results in revenue and sets electricity costs in exchange for the use of the land. There are many things to consider with this opportunity, and it is recommended that it be evaluated in much greater detail.

Further evaluation is required to determine future growth priorities and if this site is the best location for a large scale PV array. ACRP Report 141: Renewable Energy as an Airport Revenue Source is a good reference for more information. The table below lists some of the evaluation factors described in ACRP Report 141.

ACRP 141

Evaluation Factors to consider for Renewable Energy Projects:

1. **Physical geography** and **location** of the airport.
2. **Airport property characteristics** - on-site energy demand, facilities, real estate, and terrain.
3. **Energy costs** - current cost of conventional electricity versus renewable electricity, cost of power trends, and heating.
4. **Public policy programs** - available tax credits, state established renewable portfolio standards, grants, executive orders, power purchase agreements and the ability to net meter.
5. **Ownership and operational arrangements** - is it going to be airport owned, third-party owned - airport host, third-party owned - airport as power purchaser, or utility owned.

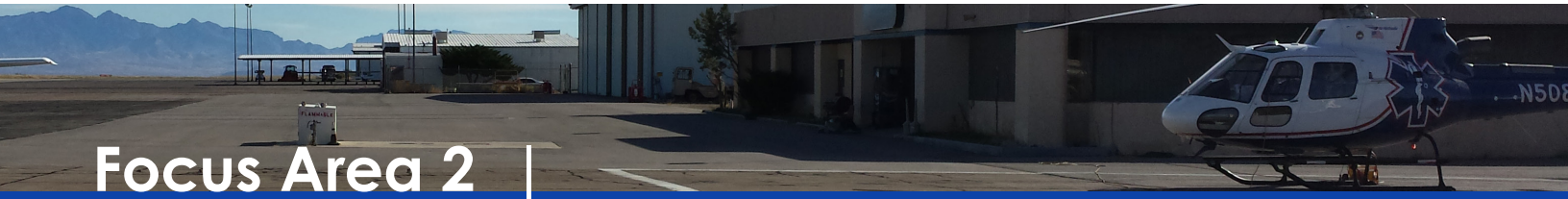
LRU's building at Old Adventure Aviation Building consumes 75 percent of the airport's total natural gas usage. This facility houses the Air Ambulance which is occupied 24/7 and the occupants occasionally take showers. Because the Navy Detachment also uses this building when they are there, the hot water use is much higher than other buildings on the airport.

A solar hot water heater may be beneficial in this building as it requires a large amount of hot water for showers, cleaning, and hand washing. Further cost-benefit analysis is required, and LRU could look into possibly having a solar hot water heater installed on or close to this building.

Below are some potential Energy Initiatives for the City to evaluate and consider implementing at LRU.

energy initiatives

		Resources Required	Economic Viability	Environmental Stewardship	Social Equity	Operational Efficiency	Community Partnership
Reduce Energy Usage							
EC01	Benchmark and monitor energy use	staff	✓	✓			
EC02	Reduce energy use in Top 3 energy use buildings	staff		✓			
EC03	Reduce energy use in overall airport by 7% from 2013 Baseline	staff	✓	✓			
EC04	Utilize renewable energy	$	✓	✓			✓
Review Projects							
EC05	Evaluate projects for energy savings	staff	✓	✓			



Focus Area 2 | Water & Stormwater

Overview

The City of Las Cruces and LRU airport are located near the southern border of New Mexico. Las Cruces Utilities Water Resources Section produces approximately 6.5 billion gallons of clean, safe drinking water annually from the Mesilla and Jornada Bolsons aquifers. To accommodate future growth, Las Cruces Utilities is acquiring surface water rights through leasing and purchasing agricultural water for municipal use. The long-range water plan calls for construction of a surface water treatment plant to extend the availability of water. Water conservation is a critical part of the City's water plan now and in the future.

Below are some potential water objectives which the City can evaluate and consider implementing at LRU.

Related Resources

Office of the State Engineer - Ground Water Use Information

2015 Consumer Confidence Report (Municipal Water Supply) - from The City of Las Cruces

Water and Wastewater System Master Plan Update - from The City of Las Cruces

water & stormwater objectives

1 **Reduce Water** consumption

2 **Decrease Stormwater Quantity** and **Improve Stormwater Quality**

Water

LRU's water service is provided by Las Cruces Utilities, a non-profit organization that provides utility services to approximately 100,000 residents and businesses within its service territory. Water is sourced from Mesilla and Jornada Bolsons aquifers. Groundwater supplies are finite so the City of Las Cruces encourages water conservation practices. The average annual water use (2012-2015) is approximately 322,000 gallons. The chart on the right shows the breakdown of water consumption by year. LRU's water consumption has remained relatively consistent with 2013 having a low consumption of only 235,000 gallons.

Potable water consumption is usually highest in the summer as is the case with LRU. Since the rate structure for water usage assumes that 100 percent of water used on-site goes to wastewater, there is a significant cost advantage to reducing water consumption.

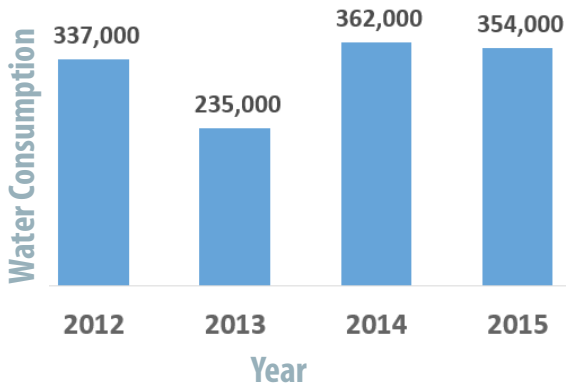
The City of Las Cruces has already taken steps to set a 3 percent water reduction goal in its Sustainability Plan. It is recommended that LRU continue its efforts to reduce consumption to meet the 3 percent water reduction goal.

Three strategies offer opportunities to reduce water usage: reduce water consumption; eliminate water losses; and use on-site water collection to defray the requirement for treated water.

water and stormwater audit **Current**

322,000 Gallons
of water used annually (average per year)

WATER USAGE



1 - Reduce Baseline Consumption

Baseline water consumption comes from water used through fixtures and appliances such as sinks, toilets, showers and washers. LRU has already replaced the toilets in the old Adventure Aviation building with low flow fixtures. It is recommended that all future projects that include water service should incorporate low flow water fixtures as well. If given the opportunity, LRU could also carry out a review of existing appliances for water efficiency. Existing high water use fixtures could be changed out with low flow fixtures, and any future appliances purchased could be required to be high efficiency. Especially, high use fixtures like those in the terminal building can have the largest immediate impact.

2 - Landscape

In the summer, when precipitation levels and temperatures are the greatest, up to 73 percent of precipitation is lost to evaporation. Smart irrigation methods such as reducing grass and plant watering, avoiding daytime irrigation, and the use of ground level drip hoses can greatly decrease water demand. Collection of stormwater for on-site use can reduce water demands and provide cost savings for both water and wastewater rates.

LRU has already taken steps to reduce landscape irrigation by using drip hoses to water specific plants and trees in front of the terminal, old Adventure Aviation building and along main entrance from I-10. The grassy area near the terminal was removed and replaced with rocks which requires no watering. They also plan to use their beautification budget to xeriscape some of their existing landscape. Xeriscape is a natural low water use landscaping method ideal for decreasing water consumption requirements. The City of Las Cruces is working on piping reclaimed water throughout the city, but it has not reached the airport at this time. If given the opportunity, it is recommended that the airport be added to the reclaimed water line distribution system so that all landscape watering will use reclaimed water reducing overall water consumption costs.

3 - Reduce Losses

Some degree of water loss is inherent to building operations; however, the impact of water leaks can be costly and wasteful of the water resource. Smart metering allows for electronic monitoring of water usage and allows for leaks to be identified quickly. Las Cruces Utilities has not offered smart metering in the past, but it is recommended if given the opportunity in the future.

Stormwater

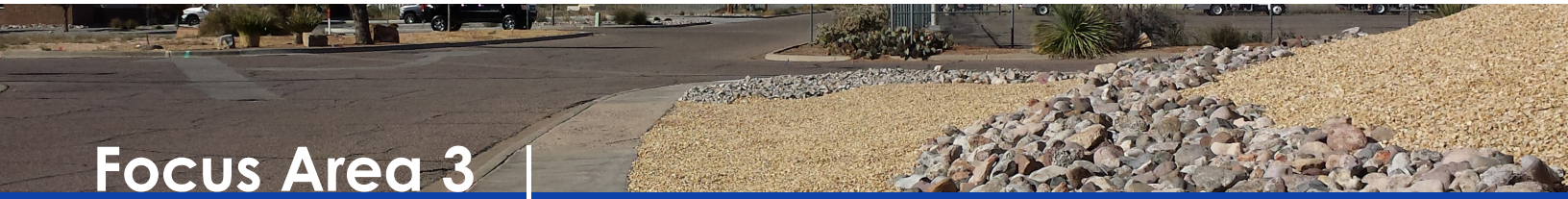
Surface water from LRU flows toward the southeast corner of the airport and the basin at the approach end of Runway 30. Airport management reports that stormwater is absorbed fairly well with no issues of standing water on the airport.

On-site stormwater reuse provides a commodity for LRU. Infiltration of stormwater can serve as a groundwater supply source. The Mesilla and Jornada Bolsons aquifers are integrally connected with and recharged by waters at the land surface and are therefore particularly vulnerable to spills and discharges of toxic and hazardous materials. Currently, LRU uses domestic water for irrigation. Stormwater collection could be another source of water for irrigation that could be looked at in the future. When LRU does water, it is recommended that it is done in the morning whenever possible.

Below are some potential Water and Stormwater initiatives for the City to consider for LRU:

water & stormwater initiatives

		Resources Required	Economic Viability	Environmental Stewardship	Social Equity	Operational Efficiency	Community Partnership
Reduce Water Consumption							
SW01	Incorporate low flow water fixtures on projects/retrofits	$	✓	✓			
SW02	Review of existing appliances for water efficiency	staff		✓			
SW03	Incorporate smart metering to the degree it is available	$	✓	✓		✓	✓
SW04	Reducing irrigation and avoiding daytime irrigation	$	✓	✓		✓	
Decrease Stormwater Quantity & Improve Quality							
SW05	Incorporate Onsite Stormwater Use	$	✓	✓		✓	✓



Focus Area 3 | Materials

Overview

There are four key waste streams at LRU: municipal solid waste (MSW), construction waste, hazardous waste, and wastewater. This section will review the feasibility of solid waste recycling, minimization of generated waste, and operation and maintenance requirements in accordance with the FAA Modernization and Reform Act of 2012.

Below are some potential materials objectives for the City to evaluate and consider implementing at LRU.

Related Resource

FAA Modernization and Reform Act of 2012

materials objectives

1. **Minimize materials** consumed and waste produced at LRU
2. **Repurpose materials** which have met the end of their intended usefulness with good material management practices
3. **Divert waste streams** using the most responsible means available where materials cannot be reused
4. **Close the loop** - create demand through the purchase of recycled goods, compost, and upcycled materials

Municipal Solid Waste

An estimated average of 1,040 cubic yards of MSW are generated annually at LRU. Currently, an average of 20 cubic yards of waste is collected weekly by the City of Las Cruces. The waste is taken to the South Central Solid Waste Authority (SCSWA) Solid Waste Transfer Station on West Amador Avenue, where it is processed and taken to the City's main disposal site, the Corralitos Landfill, located approximately five miles west of the airport along Interstate 10.

There are four dumpster locations on the Airport where MSW is deposited.

- *One 10-cubic yard bin located in the terminal area is used by Airport staff and the FBO, Francis Aviation, which is housed in the terminal building, and the U.S. Army National Guard, which leases a hangar near the terminal building.*
- *Two 8-cubic yard bins are located on the east end of the airfield along Gasoline Alley and are used by the tenants of buildings on the east side of the airfield.*
- *Two 8-cubic yard bins are located on the west end of the airfield along Zia Boulevard and are used by the tenants of the buildings on the west side of the airfield, including FBO Southwest Aviation (these are privately paid for; no expense incurred by Airport).*
- *One 10-cubic yard bin is located at the rear of Fire Station 7 for use by that City facility.*

waste audit **Current**

MSW BASELINE

Municipal Solid Waste (MSW)
Food waste, recyclables, trash

Yard waste
Grass clippings, trees, and trimmings

Hazardous Materials
Used oil, used batteries, light bulbs

Construction & Demolition (C&D)
Asphalt millings, concrete, building materials

Wastewater
Generated onsite, diverted stormwater

RECYCLING

per year shipped 5 miles to the Corralitos Landfill

1x per month

24-cubic yards recycling

No formal waste audit has been conducted; however, the City's Solid Waste Department previously conducted a review of the MSW collected at LRU and determined the need for a recycling bin at the airport to reduce the amount of solid waste.

There is one, 24 cubic yard recycling bin located at the Airport, located next to the east end dumpsters. Recycling is collected monthly by Friedman Recycling, where it is driven approximately 40 miles by truck to a processing plant in El Paso, Texas. The cost of recycling is a separate fee from the utility charge for solid waste pickup. On average, LRU spends $40 monthly for recycling pickup.

Waste Minimization and Repurposing

Opportunities for waste minimization at LRU include choosing to source products that minimize packaging waste, implementation of reusable goods such as kitchenware, and repurposing and reusing items before they enter the waste stream. Waste minimization can reduce waste collection cost and reduce the need for new materials. The City has implemented reuse on several levels. According to the 2015 Sustainability Action Plan Annual Report, 1,500 tires per year have been re-used as tire crumbs and 300 tons of glass per year are used as glass cutlets.

There are several databases for green materials, resources, and contractors in the region, including the Viva Verde Southern NM Green Directory (www.vivaverdenm.com) and Build Green New Mexico (www.buildgreennm.com).

Developing an effective waste minimization strategy will involve engaging key stakeholders in the waste management process, including:

- *Encouraging airport tenants and FBOs to recycle*
- *Encouraging airport tenants and FBOs to source recycled materials*
- *Encouraging airport tenants and FBOs to use green cleaning products*
- *Encouraging airport tenants and FBOs to reduce paper consumption, and to source recycled paper*

Recycling Feasibility

As mentioned previously, LRU does participate in the City's recycling program; approximately 24 cubic yards of recyclable material is collected monthly from the Airport. Goods that can be recycled in Las Cruces include paper, plastics, and metal. Glass is not included in the recycling program, although the City has been re-using glass to create glass cutlets for use as a rock material for landscaping. This method could be considered for use on the Airport if it is determined that it would not produce glare that would impact visibility for pilots.

Compost Feasibility

Composting of food waste allows organic materials to be diverted from the landfill and generates nutrient-rich soil. The City does offer a free "green waste" drop off at the Foothills Landfill, located approximately 20 miles east of the Airport, and offers composted mulch back to the community at no cost. As LRU does not have a restaurant or concessions, it does not generate a significant amount of food waste. Composting is not recommended as it may attract birds and wildlife to the airport.

Yard Waste

Yard waste includes grass clippings, trimmings, and vegetation removed in construction projects. The City's Development Standards for Landscaping recommends the use of indigenous or drought tolerant plants. The standards require that, for new construction within the M-2, M-1, C-2, C-1, R-4, R-3 and R-2 zoning districts, 15 percent of the "total parking area" (defined as the entire tract of land except for the building pad and fenced-in storage area) be landscaped. The airport is not within these zoning designations (it is zoned M-3C, Industrial Heavy with Commercial). Historically, airport management has encouraged airport tenants to landscape 10 percent of their tracts; however, this is not an official, written guideline for airport development. There is little grass or vegetation on airport grounds; what little that exists is maintained by the City Parks and Recreation Department.

Construction and Demolition

Past projects at LRU have diverted select construction and demolition materials (C&D) for use on-site. Millings from a previous airport project were kept on-site and repurposed into paving material for the airport perimeter road. This material re-use not only had environmental benefits, but fiscal benefits, as already purchased material could be re-used for the perimeter road project.

Uncontaminated clean fill material such as soil, rocks, concrete, bricks and asphalt can be taken to the Foothills Landfill, located approximately 20 miles east of the Airport, at no cost for residential customers, and at $3.96 per ton for commercial customers.

Currently disposal of C&D waste during projects is a discretionary opportunity. When the opportunity presents itself, further increasing waste diversion of C&D waste could include setting a project target for C&D diversion.

Hazardous Waste

Hazardous waste at LRU comes primarily from on-site maintenance. The disposal and management of hazardous waste is highly regulated and documented in the Airport's Spill Prevention, Control and Countermeasures (SPCC) Plan. Airport operations coordinates with a company out of El Paso that picks up hazardous materials in barrels for no charge.

Trash

Materials that have reached the end of their useful lives and cannot be repurposed, recycled, or composted, or require special disposal, are classified as trash. Examples of trash at LRU include bathroom waste and non-recyclable packaging.

Wastewater

LRU's wastewater consists of two sources: wastewater generated on-site, and stormwater diverted to the wastewater treatment facility from the aircraft aprons due to contamination. There is a sewer system which serves the main portion of the terminal area; most of the hangars on the east and west ends of the airport are served by septic systems. As mentioned previously, the rate structure for water usage assumes that 100 percent of water used on-site goes to wastewater. The average annual water use (2012-2015) is approximately 322,000 gallons.

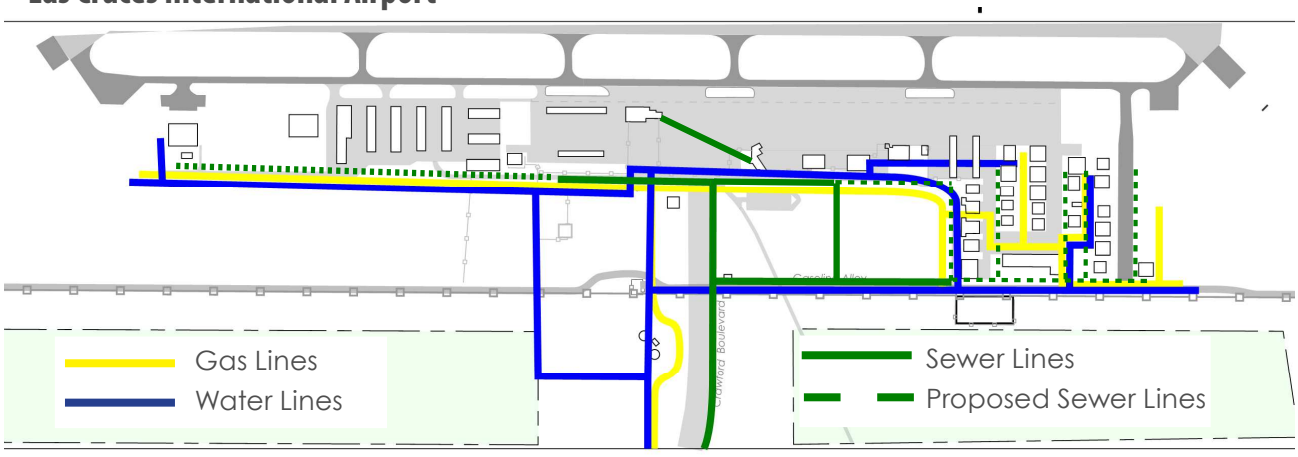
Septic

Most of the hangar buildings on the east and west ends of the airport are served by septic systems. The cost to treat and maintain the septic systems is included in the tenants' lease payments. As stated on the City's website, removal of septic tanks within City limits aids in groundwater protection by eliminating possible contamination. City ordinance requires owners or occupants within the City to connect to the City sewer system unless their premises are 200 feet or more from the nearest point of a connection, or there are insufficient grade or right-of-way limitations, except for those with currently functioning septic systems. The Airport recently expanded the sewer line to the old Adventure Aviation building and the City-owned hangar presently used by the National Guard. As the sewer lines are extended and expanded at the Airport, tenants of hangars will be able to tie into the city sewer lines at their own expense.

Recommendations

Increasing the amount of recycled waste at LRU can reduce the volume of MSW collection, offsetting some of the incremental cost for these programs. Tenants and FBOs can be trained on proper recycling techniques, and more than one recycling location could be provided to encourage tenants to use them. Incorporating a recycling requirement into airport rules and regulations and leasing contracts are ways to increase the degree of recovery.

Utilities
Las Cruces International Airport



materials initiatives

		Resources Required	Economic Viability	Environmental Stewardship	Social Equity	Operational Efficiency	Community Partnership
Minimize Use of Materials							
MA01	Choose products that minimize waste and packaging	none*	✓	✓		✓	
Re-purpose Materials							
MA02	Engage key stakeholders in waste management, set targets, and monitor progress	staff	✓	✓	✓		
MA03	Set a project target for C&D diversion	none*		✓		✓	
Divert Waste							
MA04	Expand the recycling program on airport	$	✓	✓			✓
MA05	Tenant and Staff education, update rules and regulations	staff		✓	✓	✓	
MA06	Encourage tenants to use compostable serving ware	staff		✓	✓		
Close the Loop							
MA07	Purchase products made from recycled materials	$		✓			
MA08	Use compost from local vendors when additional soil is needed	$	✓	✓	✓		✓

*These items are minimal to low cost and should be reviewed as the easiest to implement.

Focus Area 4 | Community

Overview

In order for an organization to be sustainable it must first develop sound principles for building and retaining organizational capital. Elements of this section include stakeholder engagement, socially equitable business practices, and providing access to the airport through a variety of transportation modes.

Below are some potential community objectives for the City to evaluate and consider implementing at LRU.

Related Resources

City of Las Cruces Comprehensive Plan 2040

City of Las Cruces website www.las-cruces.org/en/Departments/Transportation/Airport.aspx

LRU Facebook page@ LasCrucesAirport

community objectives

1 **Engage** stakeholders

2 **Provide** multi-modal access to the Airport

Community and Stakeholder Engagement

Airport stakeholders include airport tenants, lessors, adjacent land holders, FAA, NMDOT, the City of Las Cruces and Dona Ana County, the on-site fire station, utility providers, and airport management and staff.

The population within a 30-minute drive time of LRU has increased at an annual rate of 2.03 percent from 2000-2010, and is 138,759 according to the 2010 Census. Population within this service area is projected to grow at an annual rate of 0.67 percent through 2019. New Mexico State University (NMSU) is within the 30-minute drive time.

There is an Airport Advisory Board which includes seven members who are appointed by the mayor and confirmed by City Council. The Board meets monthly; all Board meetings are open to the public. The creation of the Advisory Board satisfies Goal 48.10 from the City's Comprehensive Plan 2040, which is "Have an Airport Advisory Board or similar board to provide policy advice to the City Council." The Airport Advisory Board was involved in the development of the 2016 Airport Action Plan, including the selection of preferred development alternatives.

The approximately 6,300 square foot airport terminal building includes a conference room, City airport management office, restrooms, and an FBO operation (Francis Aviation) which leases a large portion of the building. Historically, LRU has allowed community functions to be held at the terminal building, including hosting the New Mexico Pilot's Association regional staff meetings on weekends. With the occupation of a majority of the terminal building by Francis Aviation, there is less available space for public functions.

Socially

The Airport provides and communicates information through its page on the City's website, and through social media on its active Facebook page.

Access

The City's Comprehensive Plan 2040 includes a goal and a sub-goal involving providing a variety of modes of transportation to the airport for users.

- *Goal 48: Coordinate with others to enhance various transportation options for moving goods and people*
- *Sub-Goal 48.7: Any new passenger facilities should incorporate specific design and planning to enhance the transfer of people from private autos or shuttle buses to the airport. This may include but not be limited to coordination or partnering with local shuttles and/or the Transit Department for passenger pickup and drop off at the airport.*

Currently, there is no shuttle service to the airport and the airport is not on the City's RoadRunner transit line.

Below are some potential Community and Stakeholder initiatives for the City to consider for LRU:

community and stakeholder initiatives

		Resources Required	Economic Viability	Environmental Stewardship	Social Equity	Operational Efficiency	Community Partnership
Engage Stakeholders							
CM01	Continue to communicate and provide information in user-friendly forms such as web and social media	$	✓	✓			✓
CM02	Make the airport available for public and group meetings to establish the Airport as a community meeting place	none*	✓				✓
Promote Multi-Modal Access to the Airport							
CM03	Express support to local shuttle companies and the City's Transit Department for alternative modes of access to the Airport (when appropriate)	none*		✓	✓		✓
CM04	Encourage staff and tenants to carpool to the Airport (when appropriate)	none*		✓	✓		✓

*These items are minimal to low cost and should be reviewed as the easiest to implement.

Summary

LRU has already taken some steps toward sustainability which include best practices and projects to recycle waste, limit stormwater, decrease domestic water use, change to LED lights, and use electrical fans for cooling. However, the sustainability effort must continue. As LRU continues to grow, more energy and resources will be required. The "Initiatives" at the end of each section have recommended areas and ways to improve sustainability specific to LRU. Use the initiatives to track and reduce consumption and improve communication. These are just some recommended practices. There are many ways to improve sustainability. The tools provided herein can help LRU to impact sustainability in the community.