

Sustainability

Methods of Approach &
Highlights of Success

DRAFT

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DRAFT

Introduction

The Town of Oro Valley is committed to operating in a manner that balances social, economic, environmental and institutional considerations to meet our needs and those of the community. Balance brings “sustainability” to Town operations, and, by example to the larger community. Sustainability is a journey—not a destination. It requires creativity and innovation to work toward a common goal of ensuring our community’s health now and in the future.

This plan represents the Town’s first effort to guide this journey. In May 2008, the Oro Valley Town Council formally affirmed its commitment to sustainability with its unanimous passage of Resolution No. (R) 08-39. In addition to highlighting current energy efficiency and conservation practices, the need for further study to improve the sustainability of existing municipal facilities, buildings and parks was established.

The Town Council approved two significant benchmarks to measure the success of our “green” efforts: The U.S. Conference of Mayor’s Climate Change Agreement and the Environmental Protection Agency’s Energy Star Challenge are programs with specific sustainability goals. With these two efforts as our guide, the Town staff set forth to develop a plan with two key goals in mind:

1. Reduce greenhouse gas emissions seven percent below levels produced in 1990
2. Reduce overall energy consumption by ten percent

To this end, the Town formed the “Green Team,” with staff representatives from the following departments:

- Public Works
- Parks & Recreation
- Town Manager’s Office
- Water Utility
- Planning & Zoning
- Police
- Library
- Building Safety

The Green Team has worked for more than a year to develop this action plan. By working collaboratively, each participant became fully aware of the interdependency of actions required to achieve the Town’s Sustainability goals. Implementation will also require an ongoing team approach.



The Plan includes the following focus areas:

- Sustainability Program
- Transportation Efficiencies
- Land Planning & Conservation
- Buildings, Facilities and Equipment
- Water Conservation
- Renewable Resources
- Waste Reduction
- StormWater
- Procurement

Each focus area includes a descriptive statement, goals and implementation items, highlights of current success and an action timetable. Each was assembled using a process recommended by the Environmental Planning Agency's Energy Star program. The process requires a four-step approach to implement change:

1. Benchmark
2. Assess
3. Implement
4. Track

As a result, there are consistent references to benchmarks such as establishing typical paper consumption levels for a government office of similar size. Another component of benchmarking entails creating a measurable goal such as a ten percent reduction in paper use over the next year. The next step is to assess existing conditions as a baseline to measure performance improvements.

Implementation and tracking are components addressed by insuring that every initiative should result in action. To insure accountability, a yearly report will be provided to indicate performance.

The Plan is designed to establish realistic and meaningful change. With regard to cost, the Green Team has been sensitive to current budgetary constraints. There are many items in the Plan that will result in significant improvements to efficiency and conservation that simply require organization. Paper use reduction, replacement light bulb standards and consolidated building and fleet maintenance are examples. Items that require a significant budgetary commitment are generally programmed for consideration as the local economy improves.

"Sustainability" is truly achieved by balancing a myriad of considerations within a changing environment. To that end, the plan will be updated every five years to adjust to changing conditions and new technologies.

Sustainability Program

Statement

The long-term impacts of policy choices must be analyzed to ensure a sustainable legacy. Decisions regarding internal operations will impact the long-term Sustainability of Oro Valley.

Goals and Implementation Items

Internal Outreach and Education

Employee awareness, responsibility, participation and education are key elements of a sustainability initiative.

- Provide monthly Sustainability tips to Town employees. The aim is to provide employees with up to date and creative information to help make positive and sustainable choices
- Review key elements of the Sustainability Plan with all Departments on a reoccurring basis. Milestones and challenges specified in Plan must be well understood by all employees
- Publish a Town progress report that reflects performance by each department

0-3 years, Office of Conservation & Sustainability

Boards & Commissions

Raise general awareness of sustainability principles for use by decision makers.

- Provide training opportunities for the Planning & Zoning Commission, Development Review Board, and Water Utility Commission
- Promote the establishment of a Sustainability Commission to develop a comprehensive program, coordinate activities in concert with the Town's overall sustainability program, insure accountability, and implement sustainability initiatives

0-3 years, Office of Conservation & Sustainability

Green Team

The Green Team is working to integrate sustainability principals and goals into the management and operation of all Town Departments.

- Upon adoption of the Sustainability Plan by Town Council, immediately proceed with implementation
- The internal Sustainability Plan is to be revised on an annual basis

0-3 years, Office of Conservation & Sustainability

Audit and Develop Benchmarks

Develop specific baseline information regarding current levels of key indicators to measure savings created by action

- Greenhouse gas emissions generated by Town government
- Energy use and technology currently employed by all Town energy using facilities and functions
- Levels of internal recycling
- Paper use
- Water consumption of building, facilities, and landscaping
- Provide an annual report regarding progress and milestones

*0-3 years, Office of Conservation & Sustainability
0-3 years, Water Utility for Water consumption baseline*

Highlights of Current Successes

The following efforts are underway.

- The Town has been allocated a Department of Energy funding opportunity. Monies will be targeted to enable energy saving retrofits
- Retrofit funding opportunities have been identified. Advance research is underway. Results will be presented to Town Council with recommendations to implement comprehensive energy efficiency retrofit programs
- An energy audit of all Town building and facilities has commenced. Comprehensive results will be presented to Town Council in November
- Staff and the Pima Association of Governments are currently working on a Greenhouse gas emissions study. Study will address Town facilities and the entire community
- Town Council is considering formation of a Sustainability Technical Advisory Team to help develop community wide programs
- Staff is working with City of Tucson Sustainability Department and Pima County Administrators Office to bolster regional efforts, share information, and pursue opportunities
- Array of financial tools available for energy efficiency and renewable energy projects are being evaluated
- A new Office of Conservation & Sustainability has been established in order to focus on development and implementation of related programs

T

ransportation Efficiencies

Statement

Vehicle use in general is a significant contributor of greenhouse gas production. Use of vehicles will always be necessary for employees to fulfill specific tasks and every effort should be made to reduce the number of vehicle trips. Furthermore, the Town must insure that vehicles utilized meet acceptable efficiency standards.

Goals and Implementation Items

Facility Placement

All public facilities that include heavily utilized services should be located in a manner to minimize vehicle trips by citizens and employees.

- Proposals for new sites must include an evaluation of population density in the immediate service area and anticipated miles traveled by customers and Town employee
- As part of identifying new locations for Town facilities, consider the availability of nearby services such as restaurants, banks, drugstores etc. to reduce customer and employee vehicle miles traveled
- Site design is to emphasize safe and efficient pedestrian movement and multi-use paths to encourage walking and biking

Ongoing effort, Building Safety, Planning, Public Works, and Parks & Recreation

Fleet Management

Carbon emission capability of all Town owned cars, motorcycles, trucks, transit vehicles, and heavy equipment must be reduced.

- Responsibility for vehicle purchase, monitoring, storage, and repair responsibility must be consolidated into one team

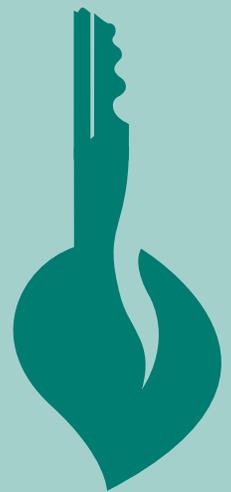
3-5 years, Public Works

- An inventory of all vehicles by year, make, EPA rated average miles per gallon (mpg), and actual mpg must be completed. Mileage evaluations are to be analyzed on an annual basis with the aim of increasing efficiency

3-5 years, Public Works

- Systematic repairs must be conducted to reduce diesel and gas consumption

3-5 years, Public Works



- The frequency and type of vehicle use must also be tracked by one team. The aim is to identify suitability of vehicle type, specific users, and opportunities for fleet consolidation by establishing a pool

3-5 years, Public Works

- Vehicles are to be evaluated on a cost per mile basis at least once a year. Low efficiency and aging vehicles must be systematically replaced as budgeting permits

3-5 years, Public Works

Reduce fuel consumption by at least 10%

- A fleet management team is to monitor gasoline consumption and establish current needs to establish a consumption baseline. This information is to be utilized to monitor success of fuel saving programs

3-5 years, Public Works

- Enable all vehicles to utilize gasoline and diesel from one source to insure quality and enable consistent monitoring

3-5 years, Public Works

The Town must adopt specific standards for gas mileage, safety, number of passengers accommodated, and functionality.

- Criteria must be adopted by Town Council prior to any new vehicle budgetary requests. Specific allowances are to be made for police patrol cars and heavy machinery requirements to insure functionality

3-5 years, Public Works with support from Procurement

- The average of regular duty passenger cars in the fleet must be at least ? mpg by year 2016 for all staff passenger vehicles

3-5 years, Public Works with support from Procurement

- The fleet of light trucks must average at least ? mpg by year 2016

3-5 years, Public Works with support from Procurement

- Large truck and patrol vehicle purchases are to reflect best available functionality and fuel efficiency

3-5 years, Public Works with support from Procurement

- Use of recycled materials and extent of waste production by the manufacturer must be considered as part of new vehicle purchase

3-5 years, Public Works with support from Procurement

- All diesel trucks must be converted to exclusively utilize clean diesel

3-5 years, Public Works

- The quality of gasoline utilized must be analyzed relative to vehicle mileage and actual maintenance costs

3-5 years, Public Works with support from Procurement

- Ten percent of the fleet is to utilize alternative technology by year 2016. Clearly identify Town vehicles that use alternative fuels to promote the Town's commitment

5-10 years, Public Works with support from Procurement

- Use of flex fuel will be discouraged until more sustainable non-food sources are readily available

0-3 years, Public Works with support from Office of Conservation & Sustainability

Educate employees regarding best fuel efficiency driving practices.

- Post information on all vehicle use sign in and sign out logs
- Develop a brochure to be included in all vehicles and posted at fuel stations
- Clearly mark appropriate Town vehicles so they can be easily identified by the public and, in doing so, reduce the potential for unofficial use
- Prohibit practice of letting vehicle idle while employee completes a function outside of a vehicle unless such action compromises safety

0-3 years, Public Works

Reduction of Vehicle Miles Traveled

Develop a comprehensive plan and associated requirements to reduce one person per vehicle work commutes

- Participate in development and adoption of the Pima Association of Governments Trip Reduction Program Ordinance to reduce traffic to the worksite. The Ordinance includes a commitment to educate and encourage employees with incentives to leave their car at home – at least one day a week
- Increase use of carpooling and alternative modes by 5%

3-5 years, Public Works with support from Office of Conservation & Sustainability, Human Resources and IT

Opportunities and incentives for employees to carpool and utilize public transit are to be promoted.

- Establish an alternative mode information center for employees on the Town intranet site to facilitate carpool matching
- Provide specific intranet links to the Pima Association of Governments Sun Rideshare Match list website and Sun Tran
- Sponsor rideshare fairs, carpool sign-ups, or brown bag lunches at the work place
- Establish "carpool" only parking in the few spaces that are truly afforded tree shade in the Town Hall parking lot
- Require use of a carpool to conferences when two or more employees are scheduled to attend an off-campus training session
- Promote carpooling to off-campus training sessions or conferences that will be attended by colleagues in nearby jurisdictions
- Work with PAG/RTA to enhance transit alternatives to better serve OV Employees by establishing reverse commute alternatives

3-5 years, Public Works with support from Office of Conservation & Sustainability, Human Resources and IT

Special programs to encourage employees to use alternative transportation modes to reduce the carbon footprint of travel to and from work must be implemented:

- Participate and promote the yearly Clean Air Days and Bike Fest (work commute) that is held throughout Pima County and seek privately funded donations from local businesses to provide incentives/awards
- On the Town intranet site, recognize those who use alternative modes of transportation and share cost savings realized
- On the Town intranet site, promote bring your lunch campaigns and lunch bunch carpools
- Increase awareness of bike parking, shower, and dressing facilities in the Town Hall Administration Building

0-3 years, Public Works with support from Office of Conservation & Sustainability, Human Resources and IT

Schedule and location work adjustments should be encouraged to reduce the carbon footprint of travel to and from work.

- Enable and promote use of compressed work weeks, telework, and off-peak commuting times at discretion of each Department
- Allow employees to go to different work sites from home and/or return directly home from different work sites when there is a reduction in miles driven in Town vehicles
- Encourage meeting and conference participation via teleconference

0-3 years, Human Resources with support from Office of Conservation & Sustainability

Transit Stops and Park & Ride Facilities

The promotion and development of regional and local transit routes and Park & Ride facilities is a priority to increase use.

- All new public facilities with high levels of customer and employee traffic are to provide Park & Ride facilities and encourage transit
- Update the Town Transit Development Plan and specifically identify needs, locations, and funding opportunities for such facilities
- Update the Bike and Pedestrian Plan to work seamlessly with the requirements of a Transit and Park & Ride Plan
- Update the Town zoning code to require provision of Park & Ride spaces in larger developments as accomplished within the Steam Pump Village PAD
- Add at least one transit stop and Park & Ride opportunity

3-5 years, Public Works with support from Planning and Parks & Recreation

Road Maintenance and Operational Functions

Use recyclable material to the greatest extent feasible for roads in a manner that insures durability.

- Continue to utilize asphalt and chip seal with recycled rubber
- Review selective use of pervious pavement options and actively test products for potential use

- Review options to minimize use of pavement as part of subdivision street standards etc.
- Research and possibly implement use of light colors – opposed to black - in paving to minimize heat island effects

3-5 years, Public Works

Incorporate renewables or high efficiency technology into traffic operation facilities requiring power.

- Use of light emitting diode traffic signals is the standard
- Use of Solar powered flashing school zone lights is the standard
- Work with all surrounding jurisdiction to maximize traffic light synchronization to reduce gas consumption
- Implement use of round-a-bouts in lieu of stop signs where appropriate.
- Solar powered parking lot lights are to be utilized

3-5 years, Public Works

Highlights of Current Successes

- A traffic round-a-bout has been designed for future implementation at the intersection of Buena Vista and Hardy Roads
- Twenty five Sun Shuttle stops have been established, including one at Town Hall and the Municipal Operations Center
- The Public Works Department is utilizing clean diesel for operations equipment
- Since 2003, the Police Department has purchased “administrative use” vehicles—not normally associated with Law Enforcement use—rated for high fuel economy and low maintenance. As of 2009 almost all of the “administrative use” vehicle fleet has been converted accordingly
- The Police Department is prepared to utilize “flex fuel” in vehicles when/ if it is identified as a Town preferred fuel. The current fleet includes 29 “flex fuel” patrol vehicles. Beginning with the 2009 model year, all Ford Crown Victoria patrol cars will be “flex fuel” capable
- In FY 2008-2009, the Police Department has implemented the efficiency replacement program by reducing the fleet by two vehicles
- In 2009, the Town opened its first dedicated Park and Ride facility in Rancho Vistoso and established a second location at Riverfront Park. Both facilities support the new Sun Shuttle and Sun Express bus services.
- The Oro Valley Marketplace transit facility was made fully operational with bus service
- Steam Pump Village shopping center now includes dedicated Park & Ride spaces. It is currently being served by the new Sun Shuttle
- The Police Department currently has two Ford E150 passenger vans that other departments use when needed for efficient transportation of groups
- The Public Works Department uses rubberized asphalt and chip seal on all new road projects (including La Cañada) when possible

Land Planning & Conservation

Statement

The Town's desire to preserve, protect, and enhance the Sonoran Desert environment, visual resources, natural open space connections, and significant cultural resource sites is clearly expressed in the General Plan. Internal measures must be oriented to achieve these objectives.

Sustainable development strategies save taxpayer money, improve the profits of local businesses, and make the community much more livable. Economic progress and environmental quality are compatible goals.

Goals and Implementation Items

Land Acquisition

Institute a Town program for the acquisition, management and maintenance of public open space with significant natural, visual, and/or cultural resources

- Develop a specific inventory of environmentally sensitive lands and cultural resources to further the objectives of the General Plan, Environmentally Sensitive Lands Ordinance and Sonoran Desert Conservation Plan

0-3 years, Planning

- Establish a cost-benefit analysis methodology to determine acquisition priorities

5-10 years, Planning

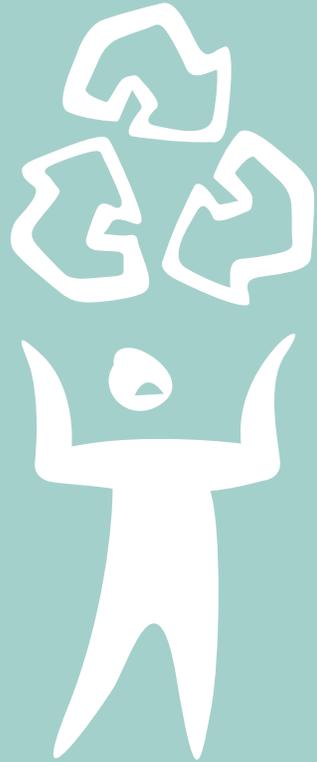
- Research and seek formal consideration of potential funding partnerships and mechanisms identified in the General Plan. Funding opportunities include targeted development fees, Town funds, sales taxes, or highly focused bond measures to meet Environmental Sensitive Lands planning objectives

5-10 years, Planning

Identify and require protection of significant natural and cultural resources as a part of the planning and zoning process

- Implement an Environmentally Sensitive Lands Ordinance that has been integrated with the objectives of the Sonoran Desert Conservation Plan

0-3 years, Planning



Facility and Infrastructure Placement

New facilities and infrastructure must be designed to avoid impact to environmentally sensitive lands, which include designated riparian habitat, significant resource areas, floodplains and cultural resources.

- All Capital Improvement Projects are to be reviewed for compliance with environmentally sensitive lands and native plant salvage ordinance requirements
- If impacts to environmental sensitive lands are unavoidable, mitigation is to be provided to the same extent required of private development

Ongoing, Planning with support of Public Works and Building Safety

Promote dedication of facilities, such as a police substation, in large scale developments where public need is anticipated.

- Establish criteria to seek such dedications upon private land owner request for rezoning or development plan
- Identify new facility costs and benefits prior to dedication

0-3 years, Planning with support of OVPD and Parks & Recreation

Systematically reduce capital outlays by encouraging smart growth decisions to promote the most efficient use of infrastructure.

- Conduct an analysis of the Town utilizing the Arizona Smart Growth Scorecard and review areas of "improvement" with Planning & Zoning Commission and Town Council
- Staff reports relevant to new land use are to include analysis of current and future infrastructure impacts. Infrastructure includes roads, sewer and water
- Emphasize General Plan objectives to limit sprawl and facilitate development in areas with high capacity infrastructure. In particular, locate new Town facilities used by the public in areas where high capacity infrastructure already exists

Ongoing, Planning with support of Public Works and Water Utility

Land, Facilities and Infrastructure Management

Monitor and manage Town land, facilities and infrastructure to achieve the goals of the General Plan, Environmentally Sensitive Lands Ordinance, and Sonoran Desert Conservation Plan

- Develop long range maintenance plans for the grounds of all Town properties
- Implement long term maintenance and evaluation of restoration areas that may have been disturbed in construction of facilities and infrastructure

0-3 years, Public Works and Parks & Recreation with support of Planning

Manage biological and cultural resources to ensure their integrity, diversity, and long term viability.

- As specified in the General Plan, the Town shall prepare, adopt, and periodically update a Natural Open Space Management Plan to determine the appropriate level of use and protection of the environmentally sensitive opens space areas within and surrounding the Town
- Review and inspect lands on a yearly basis and conduct a needs assessment. The assessment is to be utilized to formulate a specific action plan

3-5 years, Planning and Public Works

Implement educational programs to improve the environmental and cultural resource literacy in the Town.

- Dedicate space on the Town website with appropriate level of information and links

0-3 years, Planning with support of Town Manager's Office

- Provide regular seminars as part of the Citizen Planning Institute Continuing Education series

0-3 years, Planning

- Host annual cultural resource celebration events in locations such as Steam Pump Ranch or Honey Bee Village

0-3 years, Town Manager's Office

Highlights of Current Successes

- In 2008, the Town Council adopted smart growth policies for the Arroyo Grande planning area, including adoption of General Plan policies and a land use map to assure preservation of wildlife habitat, linkages and open space
- The Town adopted policies in the General Plan Focus 2020 for instituting programs for acquisition, management and maintenance of environmentally sensitive lands and public open space
- In 2008, the Town Council adopted and implemented the Sonoran Desert Conservation Plan. It will be utilized to guide the development of Environmentally Sensitive Lands ordinance
- The Town applies Native Plant Preservation, Salvage and Mitigation and the Riparian Habitat Protection Overlay District regulations to all new development projects
- The Town actively manages cultural resources at Steam Pump Ranch and Honey Bee Village
- Work has commenced on development of an Environmentally Sensitive Lands Ordinance to comprehensively address preservation of key habitat, riparian areas, visual, and cultural resources
- All Environmentally Sensitive Lands and Cultural/Historic sites are currently being inventoried

- Water harvesting has been incorporated into areas between Development Services and the Library
- Innovative water harvesting riparian channel design concepts have been developed by Public Works and incorporated into private sector developments such as Oro Valley Marketplace

***B*uildings, Facilities & Equipment**

Statement

Green building systems and operational practices are dependent on siting, solar access, light penetration, architectural design, product specification, and maintenance. Green buildings must take all of these factors into consideration on a “whole-building,” integrated basis. This approach is not linear; rather it is circular and multi-dimensional.

High-performance buildings use less energy, cost less to operate, and have less of an environmental impact than conventional buildings. To successfully achieve these goals, the process of designing, constructing, or renovating a high-performance building must be different from traditional design/build methods.

The greatest opportunities for incorporating energy efficiency and sustainability into a building come in the design phase, but there are many opportunities during construction and renovation. All improvements must be judged on a cost effective basis – both in the short and long term. Viewed over a 30-year period, initial building costs generally account for approximately two percent of the total, while operations and maintenance costs equal six percent, and personnel costs equal 92 percent.

Use of high efficiency facilities and equipment is also a significant step to achieve energy and budgetary savings. The Town is committed to make the most of gains in energy efficiency technology to reduce our carbon footprint.

Goals and Implementation Items

Building Design and Construction

A building project and its components must be viewed on a full life cycle basis. This “cradle-to-cradle” approach considers a building’s total economic and environmental impact and performance. These range from material extraction and product manufacture to product transportation, building design and construction, operations and maintenance, and building reuse or disposal.



- Design must incorporate recommendations of the Sustainable Building Technical Manual, produced jointly by the U.S. Department of Energy (DOE) and Public Technology, Inc. (PTI). The manual entails specific methods to design, operate and maintain environmentally friendly buildings
- Employ a design, construction, and maintenance team that utilizes the whole building integrated design approach. Design and maintenance teams must include LEED certified professionals with specific experience in sustainable design
- To set a community and building industry standard, promote Town building and renovation efforts as Green Building demonstration projects
- Balance environmental and economic considerations when selecting building and replacement/renovation materials

Ongoing, Building Safety, Planning, and Public Works

- Insure key project management, building and maintenance staff received training and opportunities to become LEED certified

3-5 years, Public Works and Building Safety

All new buildings are to achieve maximum efficiencies in energy use and energy performance.

- Buildings will meet the LEED standard of Silver per the Town Council resolution
- Key review staff must achieve accreditation as LEED Certified Professionals
- Increase building longevity through durable construction elements and adaptable design
- Solar energy to heat water must be utilized when hot water demand is high and interior use areas are concentrated
- All structures must include solar photovoltaic technology as an energy source or be designed to readily accommodate it in the future
- Passive solar orientation must be a primary consideration in building design. Building orientation must take advantage of solar access, solar cooling, solar shading, thermal storage and natural lighting
- Evaluate effects of micro-climate on building
- Buildings must be insulated to achieve an R34 or higher rating utilizing environmentally friendly materials
- All windows and doors on south and/or west elevations must incorporate screening via awnings, overhangs and/or vegetation to minimize summer sun exposure
- Buildings must be designed to minimize emissions and negative indoor and outdoor air quality impacts by utilizing a 20% over minimum code design values
- Building design shall maximize the quality of the indoor environment for the comfort, health, safety and productivity of occupant and visitors by exceeding minimum code design values by 5%
- Select materials such as carpets, glues, adhesives, etc. with aim of eliminating vapor emissions. Plan to minimize use of water by occupants and mechanical systems and maximize on site water harvesting and graywater use

- Minimize electric loads from HVAC, lighting, appliances, and equipment
- Design must address the aim of reduced and simplified maintenance
- Design shall minimize the extent of exterior impervious surface area (such as pavement)
- Grading plans and implementation must include extensive water harvesting elements
- Promote energy conservation by establishing below grade office and storage space

Ongoing, Building Safety, Planning, and Public Works

Green building concepts are to be applied during the construction process.

- Lower energy costs by installing energy monitoring equipment, energy-efficient lamps and fixtures, and using occupancy sensors to control lighting fixtures
- Lower water costs by monitoring consumption and reusing stormwater and/or construction wastewater where possible
- Lower site-clearing costs by minimizing site disruption and movement of earth and installation of artificial systems. The footprint of buildings can be minimized by using two or three stories
- Lower landfill dumping fees and associated hauling charges, through reuse and recycling of construction and demolition debris
- Lower materials costs, with more careful purchase and reuse of resources and materials

Ongoing, Building Safety, Planning, and Public Works

Existing buildings must be retrofitted to utilize cost effective technology to achieve a high standard of efficiency and low energy use.

- A comprehensive energy audit must be conducted for all Town structures to identify current performance and specific opportunities for energy saving upgrades. The audit will specify conservation and renewable energy opportunities, costs, and priorities based on anticipated budgetary return on investment

0-3 years, Office of Conservation & Sustainability with support from Public Works, Water Utility, and Parks & Recreation

- Town must develop a facilities maintenance plan that includes methods to systematically upgrade facilities in accord with energy audit results. The plan must include a specific schedule of improvements

0-3 years, Office of Conservation & Sustainability with support from Public Works, Water Utility, and Parks & Recreation

- Retrofits to heating, cooling, and lighting are the number one priority. In general, approximately 50 percent of the energy use in office buildings is devoted to producing an artificial indoor climate through heating, cooling, ventilation, and lighting

- Buildings must be re-used rather than demolished and replaced to the maximum extent thereby conserving resources and the embodied energy from prior construction. Structures must be rehabilitated and adapted using LEED standards for existing buildings

5-10 years, Office of Conservation & Sustainability with support from Public Works, Water Utility, and Parks & Recreation

- Water use fixtures must be replaced with modern low use fixtures recognized by the EPA Water Wise program to reduce water consumption

5-10 years, Public Works

Building Operation and Maintenance

Successfully meet the ENERGYSTAR Challenge by reducing energy consumption by 10%.

- All energy billing and records must be reviewed on a regular basis by one facilities management team. The team will then be able to quickly respond to repair needs or further educating building/facility occupants or users

0-3 years, Public Works, Water Utility, and Parks & Recreation

- The utility rate structure assigned to the Town must be evaluated to derive savings. There are multiple rates being assessed on different buildings and facilities

0-3 years, Finance Department with support of Office of Conservation & Sustainability, Public Works, Water Utility, and Parks & Recreation

- Install separate monitoring devices on all Town Hall buildings to measure monthly energy use. Data is to be utilized for benchmarking, planning “high return on investment” efficiency upgrades, and identify maintenance issues

0-3 years, Public Works

- Install and utilize technology to enable centralized control and programming of all heating & cooling, lighting (internal and parking lot), copying machines, computers etc.

0-3 years, Public Works

- Utilize ENERGY STAR tools and Town internal marketing to educate and motivate Town staff to employ basic energy saving practices. Practices to include:

- Instituting a “lights out at night/when not in use” policy
- Insure conference rooms remain closed while cooling/heating systems are in operation
- Presentations to all departments regarding energy conservation practices – and follow-up with documented results

0-3 years, Office of Conservation and Sustainability and Town Manager’s office

Establish specific standards for thermostatic controls and non-essential plug in use to insure energy savings and comfort.

- Consistently maintain the following heating and cooling building temperatures in accord with time of actual building use:
 - Heating = 68 degrees (occupied) and 55 degrees (unoccupied)
 - Cooling = 75 degrees (occupied) and 85 degrees (unoccupied)
- Prohibit use of personal space heaters and refrigerators in Town buildings

0-3 years, Public Works

Overall performance of buildings must be regularly monitored and systematically addressed.

- Development, adoption, and funding of an overall maintenance plan for all Town facilities must be accomplished
- A proactive building maintenance schedule and action must be implemented to not only enhance energy efficiency but to insure building longevity

3-5 years, Public Works

Utilize products and maintenance methods to reduce indoor-air pollution, smog-forming particles, odor and occurrences of eye, nose, throat and skin irritation.

- Low-VOC paint products are to be utilized for indoor spaces

0-3 years, Public Works

- Least harmful pest and rodent sprays must be utilized. Sprays are to be applied when buildings are not being utilized – and preferably on a Friday afternoon to allow dissipation over the weekend

0-3 years, Public Works

Emphasize use of recycled materials for building maintenance.

- Use of recycled latex paint (exterior) when available

0-3 years, Public Works

Facilities

Save energy and cost by using energy-efficient lighting technology.

- Audit and systematically upgrade all lighting systems with an emphasis on building, parking lot, street light, and traffic lighting to insure energy efficiency gains. Extent and schedule of upgrades is dependent on completion of a “return on investment” based analysis
- Standardize, replace and retrofit lamps and ballasts. The most efficient new lamps produce ten times as many lumens per watt of power as a conventional incandescent bulb
- Incorporate use of low-voltage lighting where appropriate
- Plan and provide for renewable energy sources for lighting and other outdoor power

0-5 years, Public Works

Minimize impacts to the night sky and surrounding property owners.

- Meet and exceed Town ordinances relative to preservation of dark sky conditions by using outdoor lighting fixtures that reduce sky glow impacts

Ongoing, Public Works

Light the minimum area for the minimum time to achieve safety objectives.

- Limit all-night illumination to areas with actual all-night use or security concerns

0-3 years, Public Works

- Utilize simple timers or photocells that can be used to turn lights on and off at seasonally appropriate times. For security lighting, motion-sensors can spotlight intruders without operating constantly

0-3 years, Public Works

- Use cut-off fixtures, shades, or highly focused low-voltage lamps to avoid spillover

Ongoing, Public Works

- Use Linear “tube lights” and fiber-optics to light the way for pedestrians without illuminating a whole area where appropriate

Ongoing, Public Works

Equipment

All new office, kitchen, computer, and non-vehicle equipment purchases by the Town must meet a high standard of energy efficiency.

- All departments must specify and buy ENERGY STAR®-qualified products or, when ENERGY STAR products are not available, FEMP-designated products which are among the highest 25 percent of equivalent products for energy efficiency. This is the same standard utilized by all federal agencies

Ongoing, Finance Department

Use of energy efficient computer systems must be utilized to achieve energy savings.

- All CRT computer screens must be replaced with LCDs
- All Town PC's must include devices that sense periods of inactivity and automatically power down after 30 minutes of inactivity
- Use of the Energy Star rated computer equipment, including servers, must be heavily emphasized in purchase of Information Technology equipment
- Achieve power savings by migrating from the use of several servers to one
- The data center requires air conditioning twenty four hours a day and seven days a week. Only the most efficient air conditioning units available should be utilized for this function

- Utilize cell phones and similar devices that include highly efficient battery technology that enables extended time between charges and relatively low energy use for recharge

0-3 years, Information Technology

As the greatest energy use in the Town, water well and reservoir distribution pumps must meet high efficiency standards.

- NEMA Premium™ label, a program sponsored by the National Electrical Manufacturers Association (NEMA) and endorsed by the Consortium for Energy Efficiency (CEE), must be consistently applied

0-3 years, Water Utility

Highlights of Current Successes

- The OV Water Utility consistently upgrades pumps and motors utilizing the NEMA Premium™ label. The majority in operation currently meet this standard
- To date, 99% of all computer screens have LCD technology. The remaining CRT's have been scheduled for replacement
- An Energy Audit of all buildings, facilities, and wells is being conducted
- The Town has installed lower wattage bulbs in street lights

Water Conservation & Management

Statement

Conservation and efficiency programs result in substantial decreases in the use of water. Water-efficient appliances and fixtures, behavioral changes, and changes in irrigation methods can reduce consumption by up to thirty percent or more.

Goals and Implementation Items

Buildings and Landscaping

Manage water use in a comprehensive manner.

- Designate one team to review all Town water utility bills on a consistent basis to address changes in consumption

0-3 years, Public Works with support of Parks & Recreation and Water Utility



- Establish water use benchmarks for all Town facilities by utilizing EPA WaterSense, ENERGY STAR, and Arizona Department of Water Resource standards. Benchmarks are to be utilized to assess operational issues, under performing systems and enable measurable results of conservation measures

0-3 years, Water Utility

- Establish a specific water budget for interior and exterior water consumption

0-3 years, Water Utility

- All parks, buildings and associated landscaping must be on separate meters—or sub-meters—in order to accurately monitor use. Separate meters are not required if landscaping no longer receives irrigation

3-5 years, Public Works and Parks & Recreation

- Using the ENERGY STAR Portfolio Manager, track water use alongside energy use in order to understand how these resources relate to one another, make integrated management decisions that increase overall efficiency, and verify savings from improvement projects in both energy and water systems

0-3 years, Public Works with support from Office of Conservation & Sustainability

Buildings

Specific water conservation measures must be incorporated into designs of all new Town facilities.

- EPA WaterSense approved (or equivalent) fixtures, lavatories and toilets must be utilized
- Design, installation and use of graywater is required in all new Town buildings

Ongoing, Building Safety and Public Works

Retrofit existing Town facilities in a cost effective manner to reduce water use.

- Audit all interior and exterior water fixtures and devices. Identify type, water use, age, performance and condition

3-5 years, Water Utility with support of Public Works and Parks & Recreation

- Develop a maintenance plan to insure optimal performance and replacement of outdated or damaged water fixtures and devices

0-3 years, Public Works and Parks & Recreation

- All new fixtures and devices must be EPA WaterSense approved or the equivalent in performance
- Incorporate use of motion sensors for sinks and toilets in areas of high use

5-10 years, Public Works

Town Landscaping and Parks

Reduce the amount of potable and reclaimed water used for landscape irrigation at Town facilities and along public roadways.

- Landscaping must meet all requirements of the Oro Valley zoning code, which includes water harvesting, water planning and monitoring, plant type, irrigation and maintenance standards

Ongoing, Public Works and Parks & Recreation

- Roadway landscaping must be designed to survive without irrigation. Irrigation may be enabled for a five year plan establishment period. After establishment, water is not to be applied on landscaping unless severe plant stress occurs due to drought

Ongoing, Public Works

Minimize use of landscape irrigation, herbicides, pesticides, and fertilizers.

- Systematically stop irrigating landscaping in all areas with drought tolerant vegetation. Irrigation may be resumed to account for drought or plant disease

0-3 years, Public Works and Parks & Recreation

- Develop a summary report to identify additional opportunities to extend reclaimed water lines to all parks and identify funding mechanisms

0-3 years, Water Utility

- Plant species that are indigenous to the local area must be utilized when landscaping next to natural open space or riparian areas

Ongoing

- Require that turf only be used for functional landscapes, such as play areas and ball fields. Turf shall not be used for purely aesthetic purposes

Ongoing

- Implement the use of water-conserving practices and technologies including “smart” irrigation timers and controls, moisture sensors, drip irrigation, flow meters, master valves through water audits and encourage hydro zoning and rainwater harvesting

5-10 years, Public Works and Water Utility

Employee and Citizen Education

- Explore a public education component in major Town landscape projects where feasible, such as native plant demonstration gardens and rainwater harvesting techniques
- Develop programs that educate businesses to conserve water by self evaluation. Ratings could be similar to the LEED criteria

3-5 years, Water Utility and Office of Conservation & Sustainability

Tracking and Monitoring

- Track water consumption and water utility expenditures for each Town facility on a regular and ongoing basis. Use the data to evaluate, make improvements, and track the water efficiency of each facility

0-3 years, Water Utility, Public Works, and Parks & Recreation

Highlights of Current Successes

- The new landscape in the medians and edges of the La Cañada Drive roadway from Tangerine Road to Naranja are being irrigated with reclaimed water as part of the new roadway widening project
- A hydrant was installed on the new 24-inch reclaimed water line in La Cañada Drive that will provide reclaimed water to contractors for use as construction water for compaction of soils and dust control
- A hydrant was installed on the existing 16-inch reclaimed water line next to the reclaimed water reservoir to provide reclaimed water to the Town's Public Works Department to use for roadway sweeping and cleaning
- A connection has been provided to the new 24-inch reclaimed water line in La Cañada Drive to provide irrigation water to the Town campus
- The Town currently uses native or low water use plant choices on Town properties and landscapes as set by the current landscape code standards
- The Parks & Recreation Department closely monitors water use within Town parks and landscapes
- The Parks & Recreation Department uses smart timers that are capable of factoring in evapo-transpiration and have multiple programming capabilities for seasonal changes
- All public restroom faucets within parks include automatic push button shut off valves

Renewable Resources

Statement

Solar technologies diversify the energy supply, reduce the Town's dependence on imported fuels, improve air quality, and offset greenhouse gas emissions. A growing solar industry also stimulates our economy by creating jobs in solar manufacturing and installation.



Goals and Implementation Items

Within the Town Hall complex, use photo-voltaic (PV) arrays to offset seven to ten percent of energy use. A goal is to generate 200,000 kWh of solar energy by 2015.

- Develop a specific “solar” plan for Town Facilities

0-3 years, Office of Conservation & Sustainability

- Strive for innovative ways to procure renewable energy for the Town of Oro Valley facilities without negatively impacting the general fund, including the use of power purchase agreements and performance contracting

0-3 years, Office of Conservation & Sustainability

- Work with public and private partners to identify suitable sites for renewable energy facilities
- Conduct a cost-benefit analysis of various renewable energy resources to determine the most beneficial and cost-effective energy source for a particular site given its location, features, land use and infrastructure requirements

0-3 years, Office of Conservation & Sustainability

- Explore opportunities to coordinate with other large power users in order to maximize the use of renewable energy and expand the market for renewable energy alternatives in the community

0-3 years, Office of Conservation & Sustainability

- Identify grant opportunities and special funding sources to help offset the cost of providing renewable energy to Town facilities

0-3 years, Office of Conservation & Sustainability

Reduce gas heating costs at the Jim Kreigh swimming pool by eighty percent or 12,000 therms.

- Install solar water heating equipment to provide for seasonal needs

3-5 years, Parks & Recreation and Office of Conservation & Sustainability

Highlights of Current Successes

- The Town uses solar powered parking lot lights at the MOC and Park & Ride
- Solar panels are utilized at five Town well sites to provide minor power needs

Waste Reduction

Statement

Arizonans produce over 5 pounds of waste per person each day. It is clear that such production will burden the capacity of regional landfills and continue to increase associated operational costs.

Waste prevention is the preferred approach to waste management because waste that never gets created doesn't have any associated waste management costs. Conversely, disposal in a landfill is the least desirable alternative. The Town will lead by example by reducing municipal waste.

Goals and Implementation Items

Reduce the total amount of municipal waste produced by 10%.

- Develop comprehensive recycling and reuse programs dealing with traditional recyclables like paper, plastic and aluminum cans, and more non-traditional items like electronics waste, batteries and light tubes

3-5 years, Office of Conservation & Sustainability

- Community events planned or financed by the Town (including holiday celebrations, entertainment, and sporting venues) must minimize production of land fill waste by incorporating recyclable products and practices. The objective is to offer "no land fill" events. In all cases, the Town will achieve a standard of recycling 50% of event waste

3-5 years, Parks & Recreation, Town Manager's Office, Office of Conservation & Sustainability

Regard and treat waste as a valuable commodity, rather than garbage

- Develop a mulching program to convert landscape materials harvested as part of routine maintenance into mulch for Town and public use

3-5 years, Public Works and Parks & Recreation

- Continue to offer furniture, filing cabinets, etc. that is no longer needed by one department to others for use

Ongoing, all departments

Make waste reduction part of every Town employee's job. Resources and mechanisms will be created or strengthened to better communicate to employees waste reduction opportunities.

- Provide forums for employees to suggest new ways of reducing waste in their work area through internal Sustainability focus groups

- Create and maintain an internal recycling marketing campaign to encourage and remind Town staff and volunteers to recycle

0-3 years, Office of Conservation & Sustainability with support from Town Manager's Office

Provide easy access to recycling facilities for building and facility users

- Include dedicated and secure space for recycling bins in all new Town facilities, as well as encourage other forms of waste reduction
- Expand recycling into park facilities
- Insure recycle bins are established in multiple locations within the Town Council chambers

3-5 years, Public Works and Parks & Recreation

Establish benchmarks for paper use to determine acceptable levels. Furthermore, current paper use must be inventoried and reduced by 10%

- Use of double-sided documents is the rule – not the exception
- Set default duplex printing on all computers with access to capable systems
- Use electronic documents (PDFs), scanned documents and email in lieu of printed documents
- Smartboard or PowerPoint agendas are appropriate to better insure paperless meetings
- Prior to meetings, distribute information electronically and notify participants that paper copies will not be provided at the meeting
- Establish a process to review electronic drafts by all reviewers – in lieu of multiple paper copies
- Use electronic transmittals for all Boards & Commissions

0-3 years, Office of Conservation & Sustainability with support from Town Manager's Office and all Departments

Procure paper that meets or exceeds the Environmental Protection Agency's guidelines for recycled content.

- All new paper orders must meet recycled-content standards

0-3 years, Finance Department

Focus on utilizing materials that may be readily recycled.

- Vendors must provide information on environmentally preferable product options as applicable
- Encourage staff and volunteers to provide their own durable drinking vessels. For guests, utilize cups and plates that have a low life cycle cost and acceptable performance

0-3years, Finance Department

Highlights of Current Successes

- The Parks & Recreation Department instituted a recycling program for aluminum, plastic, glass and paper in all Oro Valley buildings and parks, including linear river parks
- The Town sponsors an annual household hazardous waste disposal program for residents
- All Town facilities use 'green' cleaning products

Stormwater

Statement

Stormwater management applies to both the quality and quantity of water that falls during a storm event. The aim is to maximize the protection of life, safety, and property. And ensure that stormwater is free of pollutants.

Goals and Implementation Items

The Stormwater Utility will provide for the safety and welfare of citizens, property and the environment.

- Minimize disruptions caused by storm events through improved maintenance of all Storm Utility components and public roads
- Continue to develop mosquito monitoring and control programs throughout the town
- Improve the quality of all stormwater discharge throughout the town.
- Identify and protect all unique or significant environmental or cultural assets within the Town

0-3 Years Stormwater Utility

- Finalize the stormwater utility map by establishing a documented maintenance/inspection program
- Create standard watercourse maintenance requirements to be included in plats and CCR's for developments
- Finish and distribute the Watercourse Vegetation Management Plan to ensure proper drainage throughout the Town while protecting riparian and cultural areas
- Increase Community Participation in Stormwater programs such as Adopt-a-Wash, buffelbusters, etc.

3-5 Years, Stormwater Utility and Planning and Zoning



- Continue to support monthly street sweeping for all public roads and walkways
- Inspect all outfalls during dry weather twice per year

On-going Stormwater

Due to the occurrence of storms and other events that may cause periodic flooding of land, the Utility will ensure that the Town's stormwater conveyance infrastructure will safely drain and control the quantity and quality of runoff.

- Provide stormwater technical support to all Town departments and any commercial or residential activities in the Town that impact the stormwater infrastructure
- Ensure that all future construction projects have adequate stormwater infrastructure to meet the mission and goals of the Utility
- Improve roadway drainage to ensure all weather access throughout the town
- Improve the preventive maintenance program for both public and private stormwater drainage and stormwater quality infrastructure

0-3 years, Stormwater Utility

- Prepare Stormwater Best Management Practice Manual for Residents, Businesses and Town Properties
- Inventory all public quality and quantity stormwater infrastructure and establish preventive maintenance schedule in cartograph
- Manage floodplain development to meet all Federal, State and local requirements
- Begin reviews of all new construction drainage reports, development and improvement plans and provide advice and recommendations to the development community

0-3 years, Public Works and Planning and Zoning

- Use pervious surface materials on roads and parking lots, when practical, to increase groundwater recharge opportunities
- Emphasize the maintenance and protection of riparian areas in a natural state and avoid the use of artificial channels, levees and stream diversions
- Encourage flood control projects to serve multiple purposes, including maintaining and creating wildlife habitat and habitat connectivity

0-3 years, Stormwater Utility

- Continue to offer stormwater demonstrations to local schools and at Town forums
- Provide Stormwater quality education at Homeowners Association Forum
- Continue to participate in appropriate PAG and RCFD committees

0-3 years, Stormwater Utility, Information Technology

- Utilize Stormwater web page to disseminate program information to the public

Ongoing

Highlights of Current Successes

- The Utility increased Adopt-A-Wash participation by 20% in the last year
- Cleared dozens of public drainage channels and road culverts clogged with vegetation, debris and sediment to avoid potential flooding
- Constructed new spillways, sediment basins and rock embankments to improve roadway drainage and minimize storm cleanup
- Increased operations to speed up storm cleanup and improve roadway function including street sweeping, shoulder reshaping and wash vegetation maintenance
- Monitored for pollution incidents by inspecting all commercial and industrial drainage outlets that flow into our natural washes twice during the year
- Responded to every pollution report, inspected, and issued corrective action letters where appropriate
- Supported the installation and use of first flush technology in all new commercial construction in Town for cleaning of oil and grease deposits in parking lots
- Developed mosquito trapping, testing and abating procedures for appropriate drainage ways and began treating any public locations where the mosquitoes may breed
- Put a renewed emphasis on public participation and outreach through the adopt-a-wash, buffelgrass removal, and education programs resulting in the following:
 - A 20% increase in adopt-a-wash groups
 - Over 500 bags of buffelgrass removed from washes and roadways with over 300 volunteer hours
 - 5 interactive stormwater presentations to elementary classes in Town of Oro Valley
- The Arizona Department of Environmental Quality complimented the Town's efforts in complying with State requirements and that they appreciated the Town's efforts in meeting all six stormwater management control measures and our protecting of the environment during the last year
- Gained financial support from the Federal Emergency Management Agency and Arizona Department of Emergency Management for a \$1.85 million drainage repair and mitigation project in Town
- Gained support from the Pima County Flood Control District in accomplishing two projects costing over \$300,000 and providing another \$250,000 of support for Oro Valley hydrology studies

Procurement

Statement

Sustainable procurement means thinking carefully about what you buy: buying only what you really need, purchasing products and services with high environmental performance, and considering the social and economic impacts of your procurement.

The Town will purchase materials, products, and services in a manner that integrates fiscal responsibility, social equity, and community and environmental stewardship.

Goals and Implementation Items

Implement a Sustainable Procurement Policy.

- As part of the selection process, include evaluation of “green elements” as a part of the evaluation point system where applicable
- Participate in cooperative purchasing that leverages the Town’s buying power and provides for more cost-effective procurements
- Set standards for commonly purchased goods including paper, paper supplies, janitorial and cleaning products and office supplies that enforce the Town’s commitment to sustainable procurement

Support Town vendors and contractors that use and identify “green elements” of project approach and associated materials.

- Encourage use of products and services that have a lesser or reduced negative effect on human health and the environment when compared with competing products or services that serve the same purpose
- Encourage use of locally produced materials, products, and services, when practical, to reduce the environmental impacts resulting from transportation

Utilize best value procurement by means of a broader variety of considerations, including performance and environmental attributes, when making purchasing decisions.

- Encourage identification, evaluation and use of environmentally-friendly products, services and practices by Town staff
- Utilize independent, third-party environmental product or service label standards when writing specifications for, or procuring materials, products, or services. Such labels include EcoLogo, Green Seal, ENERGY STAR, LEED and EPEAT
- Develop life-cycle cost evaluations in procurement of goods and services where applicable



- Encourage purchase of products that optimize the use of recycled materials
- Encourage suppliers to use appropriate green supplies and environmentally-preferable products. Provide preferences in evaluations where appropriate
- Enhance employee awareness regarding opportunities to make sustainable purchasing decisions
- Consider the ultimate disposition of purchased materials and, when feasible, acquire products that can be recycled or re-used. For example, contracts for computers (PCs, laptops, servers) are to include criteria for manufacturer take-back and recycling, energy efficiency and other sustainability attributes

0-3 years, Finance Department

Highlights of Current Successes

- The Town requires its janitorial services provider to use only products certified as environmentally preferable by Green Seal, EcoLogo or Greenstar
- The Town currently recycles and/or resells surplus equipment and computers to reduce waste and create additional revenue for the Town
- In 2008, the Procurement Division created an online website for posting solicitations and addenda to reduce printing requirements
- Similarly, the Procurement Division conducts contract correspondence and negotiations via email to reduce printing and mailing requirements
- The Procurement Division provides information to Town Departments on available “Green” alternatives for their purchasing needs
- The Procurement Division now uses over 50 cooperative contracts to leverage the Town’s buying power and provide for more cost-effective procurements