MEMORANDUM

PUBLIC WORKS DEVELOPMENT SERVICES DEPARTMENT
PLANNING DIVISION

TO: Honorable Board of Supervisors, All Districts

FROM: Arlan M. Colton, Planning Director

DATE: August 21, 2013

SUBJECT: **Co8-13-02 BARRIER REDUCTIONS FOR GREEN BUILDING ZONING CODE TEXT AMENDMENT**

The above referenced Zoning Code Text Amendment is scheduled for the Board of Supervisors' **SEPTEMBER 3, 2013** hearing.

REQUEST: Zoning Code Text Amendment

OWNER: N/A

AGENT: N/A

STAFF CONTACT: David Petersen

PUBLIC COMMENT TO DATE: To date staff has received no public comment on the proposed amendment.

THE PLANNING AND ZONING COMMISSION RECOMMENDATION: APPROVAL (8 – 0; Commissioners Mangold and Johns were absent).

STAFF RECOMMENDATION: APPROVAL.

MAEVEEN MARIE BEHAN CONSERVATION LANDS SYSTEM (MMBCLS): Not applicable.

CP/DP/ar
Attachments

Board of Supervisors Memorandum

FOR SEPTEMBER 3, 2013 MEETING OF THE BOARD OF SUPERVISORS

TO: HONORABLE BOARD OF SUPERVISORS

FROM: Arlan M. Colton, Planning Director
Public Works-Development Services Department-Planning Division

DATE: August 21, 2013

ADVERTISED ITEM FOR PUBLIC HEARING

ZONING CODE TEXT AMENDMENT

Co8-13-02 BARRIER REDUCTIONS FOR GREEN BUILDING

AN ORDINANCE OF THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA; RELATING TO ZONING; AMENDING THE PIMA COUNTY ZONING CODE TITLE 18 BY AMENDING CHAPTER 18.01 (GENERAL PROVISIONS), SECTION 18.01.030 (APPLICATION OF ZONING CODE) TO ALLOW EXCEPTIONS FOR GREEN BUILDING STRUCTURAL ALTERATIONS FOR NONCONFORMING BUILDINGS AND BUILDINGS HOUSING NONCONFORMING USES; AMENDING CHAPTER 18.03 (GENERAL DEFINITIONS), SECTION 18.03.020 (DEFINITIONS) TO ADD DEFINITIONS FOR "CISTERN", "GREEN BUILDING", "RAIN BARREL", "RAINWATER HARVESTING SYSTEM", AND "VEGETATED ROOF" AND TO ADD UNDERGROUND CISTERNS AND CERTAIN CLOTHES LINES TO EXCLUSIONS TO THE DEFINITION OF "STRUCTURE" TO EXCLUDE THEM FROM ZONING REGULATION; AMENDING CHAPTER 18.07 (GENERAL REGULATIONS AND EXCEPTIONS), SECTION 18.07.030 (LAND USE REGULATIONS) TO ADD RAINWATER HARVESTING SYSTEM AS A PERMITTED USE IN ALL ZONES SUBJECT TO REQUIREMENTS AND EXCEPTIONS, AND SECTION 18.07.050 (DEVELOPMENT STANDARDS EXCEPTIONS) TO MODIFY AND ADD TO DEVELOPMENT STANDARDS

EXCEPTIONS FOR PROJECTIONS INTO YARDS AND FOR HEIGHT LIMITS; AND AMENDING CHAPTER 18.73 (LANDSCAPING, BUFFERING AND SCREENING STANDARDS), SECTION 18.73.050 (AMENITY LANDSCAPING REQUIREMENTS) TO ADD VEGETATED ROOFS AS AN AMENITY LANDSCAPE REQUIREMENT OPTION. On motion, the Planning and Zoning Commission voted 8-0 to recommend **APPROVAL** (Commissioners Mangold and Johns were absent). Staff recommends **APPROVAL.**
(ALL DISTRICTS)

Planning and Zoning Commission Public Hearing Summary (June 26, 2013)

Staff presented information from the staff report and proposed ordinance to the commission. Staff noted that a representative from Southern Arizona Rain Gutters (SARG) was present. SARG is the main installer of rainwater harvesting systems in the Tucson area.

Staff gave the following presentation:

The proposed zoning code text amendment is for green building barrier reductions initiated by the Commission on March 27th of this year. The amendments are designed to promote voluntary green building options that allow efficient use of energy and water resources by reducing potential regulatory code barriers and establishing permitted and allowed uses for items that are currently administered by code interpretation. The amendments are aligned with existing County policies, including policies in the Comprehensive Plan and in Board of Supervisors' Resolutions 2010-16 and 2007-84 that call for water and energy conservation and for code revisions and barrier reductions toward these ends. Some of the proposals also stem from recommendations resulting from the April 12, 2012 Sustainable Land Use Code Workshop administered by Smart Growth America under the Environmental Protection Agency's Building Blocks for Sustainable Communities Program.

Staff noted that amendments to Zoning Code Chapters 18.01, 18.03, 18.07, and 18.73 are proposed. The amendment to Chapter 18.01 (General Provisions) will provide for an exception to the prohibition of structural alterations for nonconforming buildings and buildings housing nonconforming uses when such alterations are necessary for proposed green building updates and renovations. Energy or water conservation is required for the trade-off of structural alterations that potentially extend the life of the nonconforming building or use. Lawful nonconforming aspects of the building or site will not be required to be brought into compliance and a development plan will not be required.

The amendments to Chapter 18.03 (General Definitions) will: 1) add definitions for "cistern", "green building", "rain barrel", "rainwater harvesting system", and "vegetated roof"; and 2) add underground cisterns and clothes lines six feet or less in height as exclusions to the definition of "structure", thereby excluding them from zoning regulation.

One of the amendments to Chapter 18.07 (General Regulations and Exceptions) will add rainwater harvesting system as a permitted use in all zones, subject requirements and exceptions, to promote water conservation.

Safety requirements pertain to mosquito screening and to secured large openings to prevent accidental drowning. Overflow or discharge from cisterns must not adversely impact adjacent property or right-of-way; and there is a five-foot-high screening requirement where more than two cisterns are visible from a point on an abutting street on lots less than 72,000 square feet that contain a single detached residence.

Exceptions pertain to setback distances and site coverage for cisterns:

- Small cisterns, four feet or less in height and width, would be exempt from setbacks.
- Cisterns eight feet or less in height on lots of 8,000 square feet or less would have a zero side setback.
- The front setback for cisterns would be in accordance with minimum front yard requirements for a main structure within the underlying zone.
- Cisterns would be exempt from any applicable site coverage limits.

Another amendment to Chapter 18.07 modifies and adds to development standards exceptions for projections into yards for roof eaves or overhangs, shade structures, and roofed porches – allowing these features to project a maximum of three feet into minimum required distance setbacks to allow energy saving and heat reducing shading of main buildings and guest houses provided there is no direct drainage onto adjacent properties.

The final amendment to Chapter 18.07 provides height limit exceptions for vegetated roofs including safety railing and enclosed access stairways or elevators. The additional height allowance is measured from the waterproof membrane, meaning that the excess height only applies to the vegetated roof system and the listed features (safety railing, etc.). Enclosed stairway or elevator access must be a minimum of 20 feet from roof edges. These provisions ensure that considerations for vegetated roofs are not compromised due to height limits. Numerous benefits of vegetated roofs are cited in the staff report, some being energy conservation, heat island reduction, and stormwater management.

The amendment to Chapter 18.73 (Landscaping, Buffering and Screening Standards) will add vegetated roofs as an option to satisfy amenity landscape requirements. Amenity landscaping is defined as any landscaping that is required to mitigate for the negative effects to a site caused by paving and impervious structures and is in addition to peripheral landscape bufferyard and parking lot shade tree requirements. This is a space-saving incentive for use of vegetated roofs for projects that require amenity landscaping.

A commissioner asked who a homeowner would go to if clothes lines 72 inches or less in height and underground cisterns were excluded from zoning regulation as noted on page 2 of the staff report. Staff noted that homeowners' association rules may be applicable. Otherwise, these items would be excluded from the definition of a "structure" as part of items normally associated with residential uses, especially clothes lines. Current staff has not received complaints pertaining to these uses. Structures over four feet in height are currently regulated under the current definition of "structure" and this would technically include clothes lines. Staff did not wish to regulate clothes lines, but rather wished to encourage the use.

A commissioner confirmed that underground cisterns would be allowed within setbacks.

A commissioner asked about the front setback for above-ground cisterns. Staff indicated that the proposed front setback would be consistent with the minimum required for the main structure. Otherwise, the typical front setback is twice the distance for an accessory structure compared to a main structure. This would make drainage into a cistern from the front difficult. The proposed amendment reduces this barrier.

Staff clarified that the zoning code currently exempts from setbacks certain items traditionally associated with residences, such as mail boxes that are 48 inches or less in height, or that are underground with no surface expression, such as utilities. The proposed code amendment just clarifies that clothes lines (at 72 inches or less in height) are part of the items in this category. Underground cisterns would already be allowed within setbacks and this too is clarification. The exemption from regulation only applies to the Title 18 Zoning Code and not to the Building Code which may apply.

The public hearing was opened for comment. No one spoke. The public hearing was closed.

Commissioner Poulos motioned to approve the zoning code text amendment as presented. Commissioner Cook seconded the motion, which passed (8 – 0; Commissioners Mangold and Johns were absent).

CP/DP/ar
Attachments

c: Chris Poirier, Assistant Planning Director
Co8-13-02 File

PIMA COUNTY DEVELOPMENT SERVICES DEPARTMENT
PLANNING DIVISION
STAFF REPORT TO THE PLANNING AND ZONING COMMISSION

PUBLIC HEARING
June 26, 2013

Co8-13-02 Barrier Reductions for Green Building Zoning Code Text Amendment

STATUS / AGENDA ITEM:	**Planning and Zoning Commission Public Hearing / Pima County Zoning Code Text Amendment**
DESCRIPTION:	**AN ORDINANCE OF THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA; RELATING TO ZONING; AMENDING THE PIMA COUNTY ZONING CODE TITLE 18 BY AMENDING CHAPTER 18.01 (GENERAL PROVISIONS), SECTION 18.01.030 (APPLICATION OF ZONING CODE) TO ALLOW EXCEPTIONS FOR GREEN BUILDING STRUCTURAL ALTERATIONS FOR NONCONFORMING BUILDINGS AND BUILDINGS HOUSING NONCONFORMING USES; AMENDING CHAPTER 18.03 (GENERAL DEFINITIONS), SECTION 18.03.020 (DEFINITIONS) TO ADD DEFINITIONS FOR "CISTERN", "GREEN BUILDING", "RAIN BARREL", "RAINWATER HARVESTING SYSTEM", AND "VEGETATED ROOF" AND TO ADD UNDERGROUND CISTERNS AND CERTAIN CLOTHES LINES TO EXCLUSIONS TO THE DEFINITION OF "STRUCTURE" TO EXCLUDE THEM FROM ZONING REGULATION; AMENDING CHAPTER 18.07 (GENERAL REGULATIONS AND EXCEPTIONS), SECTION 18.07.030 (LAND USE REGULATIONS) TO ADD RAINWATER HARVESTING SYSTEM AS A PERMITTED USE IN ALL ZONES SUBJECT TO REQUIREMENTS AND EXCEPTIONS, AND SECTION 18.07.050 (DEVELOPMENT STANDARDS EXCEPTIONS) TO MODIFY AND ADD TO DEVELOPMENT STANDARDS EXCEPTIONS FOR PROJECTIONS INTO YARDS AND FOR HEIGHT LIMITS; AND AMENDING CHAPTER 18.73 (LANDSCAPING, BUFFERING AND SCREENING STANDARDS), SECTION 18.73.050 (AMENITY LANDSCAPING REQUIREMENTS) TO ADD VEGETATED ROOFS AS AN AMENITY LANDSCAPE REQUIREMENT OPTION.**
INITIATION:	Planning and Zoning Commission March 27, 2013
PUBLIC COMMENT:	None as of the date of this report.
STAFF RECOMMENDATION:	**APPROVAL**

STAFF REPORT

The proposed zoning code text amendments modify portions of the following chapters:

- Chapter 18.01 (General Provisions) to provide for an exception to the prohibition of structural alterations for nonconforming buildings and buildings housing nonconforming uses when green building updates and renovations are proposed.
- Chapter 18.03 (General Definitions) to: 1) add definitions for "cistern", "green building", "rain barrel", "rainwater harvesting system", and "vegetated roof"; and 2) to add underground cisterns and clothes lines 72 inches (six feet) or less in height as exclusions to the definition of "structure", thereby excluding them from zoning regulation.
- Chapter 18.07 (General Regulations and Exceptions) to: 1) add rainwater harvesting system as a permitted use in all zones subject to requirements and exceptions; and 2) to modify and add to development standards exceptions for projections into yards for roof eaves or overhangs, shade structures, and roofed porches and for height limits for vegetated roofs including safety railing and enclosed access stairways or elevators.
- Chapter 18.73 (Landscaping, Buffering and Screening Standards) to add vegetated roofs as an option to satisfy amenity landscape requirements. (Amenity landscaping is defined as any landscaping that is required to mitigate for the negative effects to a site caused by paving and impervious structures.)

The amendments are designed to promote voluntary green building options that allow efficient use of energy and water resources by reducing potential regulatory code barriers and establishing permitted and allowed uses for items that are currently administered by code interpretation. The amendments are aligned with existing County policies and do not necessitate new policy direction via the pending Comprehensive Plan Update.

Comprehensive plan policies advocate water conservation, including: implementation of rainwater/storm water harvesting and reuse strategies; revision of design and construction standards to capture and mitigate storm water generated on-site for water harvesting; reduction of per capita water consumption; and research to determine if a zoning code text amendment should be proposed for enacting water conservation measures. (See attached Water Resources Element Regional Plan Policies.)

Board of Supervisors' Resolution 2010-16 supports implementation of the City/County Water and Wastewater Study Phase 2 Report which contains goals to address regulatory barriers to maximizing local water supplies including use of rainwater harvesting (see attached).

Board of Supervisors' Resolution 2007-84 established sustainability initiatives for County operations including goals for energy efficiency and for water conservation and management. The resolution also encourages green building concepts for private development including revision of design and construction standards to capture and mitigate stormwater generated on-site for purposes of water harvesting (see attached).

The proposals for allowance of green building updates for nonconforming buildings and uses and for clothes lines are a direct response to recommendations stemming from the April 12, 2012 Pima County Sustainable Land Use Code Audit Workshop that was grant funded by the Environmental Protection Agency's Office of Sustainable Communities under their Building Blocks for Sustainable Communities Program and administered by Smart Growth America. (See attached EPA Technical Assistance memo dated June 2, 2012.)

Green Building Structural Alterations for Nonconforming Buildings and Uses

The proposed amendments to Chapter 18.01 (General Provisions) will provide an exception to allow green building structural alterations that conserve energy or water resources for lawful nonconforming buildings and buildings housing lawful nonconforming uses. Lawful nonconforming aspects of the building or site will not be required to be brought into compliance. By "lawful" it is meant that the nonconformity was legally existing prior to the inception of the code, or permitted and in compliance prior to a contrary code amendment. Examples of such nonconformities could be a building which does not meet a minimum required yard setback, a use which does not have required paved parking or the minimum required number of parking spaces, or a use that is not permitted in the underlying zone.

Structural alterations or reconstruction related to green building will potentially allow longer existence of nonconformity for the trade-off of a building that uses resources more efficiently. The proposed amendment does not allow for enlargement or extension of a nonconforming business use. The zoning code (and State statute) already allows a lawful nonconforming business use to expand up to 100% of the area of the original business, provided that the expansion conforms to all other code provisions.

Allowance of green building structural alterations in nonconforming use and building regulations, as a measure to reduce fossil-fuel based energy use and increase use of renewable energy resources, was recommended in the "Next Steps" memo (item 3.a.iv) that was an outcome of the April 12, 2012 Sustainable Land Use Code Audit Workshop referenced above.

New Definitions

The proposed amendments to Chapter 18.03 (General Definitions) will add definitions for "cistern", "green building", "rain barrel", "rainwater harvesting system", and "vegetated roof" in support of proposed provisions for these uses within this code amendment.

The definition for **"green building"** was adapted from that of the American Planning Association which cites the United States Environmental Protection Agency (EPA).

> Green building: A structure or elements of a structure that incorporate the principles of sustainable design – design in which the impact of a building on the natural environment and/or human health will be less than a building that solely meets the minimum requirements of the building code. Green buildings incorporate principles of energy and resource efficiency, practical applications of waste reduction and pollution prevention, good indoor air quality and natural light to promote occupant health and productivity, and transportation efficiency in siting, design, and construction, during use and reuse.

Staff reviewed a number of definitions from different sources. As noted by the Cornell Cooperative Extension of Tompkins County, New York, "Green building ...is a multifaceted concept that lends itself to many interpretations." The Extension also notes that, "...the full benefits of green building are only realized when all elements of the built environment are looked at holistically." The proposed definition is holistic, recognizing the range of elements found among various definitions. However, the definition has been adapted by staff to provide a test that the sustainable design principles incorporated into a building provide greater benefits for the natural environment and/or human health, than would be gained by a building that only meets minimum building code requirements. This test is necessary to justify the proposed incentive for allowing green building structural alterations of nonconforming buildings or buildings housing nonconforming uses.

Definitions researched for **"rainwater harvesting system"** are generally consistent with the initial part of staff's proposed definition ("a system used to capture, convey, store, and release rainwater for future use"). The second part of the definition lists primary components of rainwater harvesting systems ranging from the catchment area (typically a roof) to the distribution system. The definition of **"cistern"** is proposed as "the storage component of a rainwater harvesting system". The proposed definition of **"rain barrel"** ("a barrel used as a cistern to store rainwater") establishes a rain barrel as a type of cistern. All cisterns, whether manufactured for the use or re-purposed, must include secure measures to prevent accidental drowning and mosquito breeding consistent with provisions recommended for a rainwater harvesting system discussed below.

Staff also reviewed various definitions for **"vegetated roof"**. Most definitions researched refer to complete or partial roof covering with vegetation. Common features of definitions also note the multi-component nature of vegetated roofs, as well as beneficial aspects. Vegetated roofs are often referred to as "green roofs". However, the term "green roof" can include a broader concept of a sustainable roof that uses materials that conserve energy by enhancing the roof's thermal efficiency, that extend the roof's life span, and that minimize environmental burden via responsible resource use (facilitiesnet.com). Staff's proposed terminology and definition concentrates on vegetated roofs, leaving the broader concept of "green roof" as an unspecified element of "green building". The initial part of the proposed definition ("a roof partially or fully covered by vegetation, used to manage water runoff and provide additional insulation in the winter and cooling in the summer") is from the U.S. Green Building Council's definition of "vegetated roof". The second part of the definition recognizes the multi-component nature of vegetated roofs, including the potential for containerized vegetation. The third part lists common alternative references to vegetated roofs and the range of potential maintenance.

The definition of **"structure"** is not proposed for amendment; however, both **underground cisterns** and **clothes lines seventy-two inches or less in height** are proposed to be added to the list of items that are excluded from the definition. The current definition of "structure" excludes underground items with no surface expression such as utility, water, and sewer lines. Because **underground cisterns** have a surface opening and are connected to pipes that surface, staff recommends their explicit exclusion from the definition of "structure".

The use of **clothes lines** is not explicitly cited in the zoning code. Under the current definition of "structure", clothes lines that are 48 inches (four feet) or less in height would be excluded from the definition (and therefore zoning regulation) as an item "...traditionally associated with residential uses". Of course, however, pole or umbrella-type clothes lines are almost always higher than four feet. Staff found pole heights up to 90 inches, part of which would be below ground after installation. Staff recommends excluding clothes lines 72 inches (six feet) or less in height from the definition of "structure" to encourage use of this energy-saving device without the need for zoning regulation (namely setback requirements) or a permit. Allowing clothes lines by right in all zones was a recommendation resulting from the aforementioned Sustainable Land Use Code Audit Workshop (part of item 3.a.ii of the "Next Steps" memo).

Rainwater Harvesting System as a Permitted Use

One of the proposed amendments to Chapter 18.07 (General Regulations and Exceptions) is to add rainwater harvesting system as a permitted use in all zones subject to requirements and exceptions. Rainwater harvesting systems are currently allowed, but there is no formal recognition of the use in the Zoning Code. Cisterns are simply treated as accessory structures for distance setback and site coverage purposes. A typical rain barrel would not be defined as a structure and therefore would not be subject to setback regulation. A rainwater

harvesting system may be subject to Building Code requirements depending on features (i.e. size and ratio of height to diameter of cisterns and use of electrical or pumping equipment) as per the attached Standard Operating Procedure No. 250.4.

The proposed provisions for rainwater harvesting systems are designed to promote safety while providing for relief from certain minimum distance setback requirements and lot coverage limits that could act as a barrier to cistern installations. Staff has researched zoning regulation of rainwater harvesting systems in other jurisdictions, viewed various types of cistern installations and products, and consulted a local installer, Southern Arizona Rain Gutters, Inc.

Relative to safety, staff recommends requirements that exposed openings of cisterns, which include rain barrels, be screened with a durable corrosion resistant metallic fine mesh to prevent mosquito breeding and that large openings of cisterns be securely fastened to prevent accidental drowning. Staff finds that cisterns and rain barrels manufactured for water storage, as opposed to containers re-purposed for water storage, include screened and secured openings. There is also a provision stating that overflow or discharge from rainwater harvesting systems must not adversely impact adjacent property or rights-of-way.

Relative to zoning code barrier reductions, staff recommends reduction or elimination of some distance setback requirements for cisterns and elimination of site coverage applicability for cisterns:

- Cisterns 48 inches (four feet) or less in height and width are exempt from setbacks. [This provision is similar to treatment of items 48 inches or less in height that are not defined as "structures" for the purpose of zoning regulation per Section 18.03.020(S)(23)(b)(2). This provision exempts small cisterns, including most rain barrels.]

- Cisterns eight feet or less in height on lots of 8,000 square feet or less have a zero side setback. [This provision accounts for a typically sized cistern (six to eight feet in height) that is part of a system adequately sized to qualify for a Tucson Water rebate, but that may be excluded from side yard location on smaller lots due to a typical four-foot setback requirement. A minimum 8,000 square foot lot correlates to CR-3 (Single Residence) zoning.]

- The front setback for cisterns is in accordance with minimum front yard requirements for a main structure within the underlying zone. (The front setback for accessory structures is typically greater than for main structures in residential zones and in many instances is twice the distance or greater. This would often preclude front yard locations for cisterns, especially for retrofit cistern installations where portions of the residence are already located at the minimum front yard setback distance.)

- Cisterns are exempt from the maximum lot coverage requirements of the underlying zone. [There are various standards for accessory structure lot coverage limits in the zoning code. The TH, CR-2, CR-3, CR-4, CR-5, and TR (for residential lots) zones limit coverage to five percent. The IR, RH, GR-1, SH, SR, SR-2, and CR-1 zones limit coverage to the greater of 1,500 square feet or 70 percent of the largest main building on the lot. The ML zone limits total coverage of all buildings and structures to 50 percent. The MU zone limits coverage of residential lots to 10

percent. Additional coverage limits exist, including for manufactured home park lots and for non-residential uses in various zones.]

The proposed amendments are designed to avoid requirements for sight-obscuring screening of cisterns. Screening is an expense that would add a potential barrier where none currently exists. Some property owners have chosen to screen cisterns; and staff would encourage property owners to consider the appearance of the entire rainwater harvesting system. Popular polyethylene plastic cisterns can come in many colors, but are commonly offered in earth tones. These cisterns also come in a variety of shapes and sizes and can mimic barrels, rocks, pottery, planters, columns, walls, and more. Galvanized steel cylindrical cisterns can be painted and are typically professionally installed and placed on a stable concrete foundation.

However, there are examples of homemade systems that include multiple-odd barrels, re-purposed as cisterns, linked together by piping and elevated by blocks or other means in a haphazard manner. The systems are inexpensive and may function well, but may not be aesthetically pleasing. As a measure to reduce the potential for this type or other negative visual impact from multiple cisterns, staff recommends a provision requiring minimum five-foot-high screening of cisterns where more than two cisterns are visible at a point from an abutting street on lots less than 72,000 square feet that contain a single detached residence. A screening requirement is not recommended for larger residential lots which tend to be rural in character with greater spacing between residences and from streets. (See rainwater harvesting system schematics and photos.)

Rainwater harvesting offers multiple benefits including a free, low-salt, water source that is good for plants, a reduction in the use of treated supplied water or well water, a measure of stormwater management and erosion control, and energy conservation with gravity-fed systems. As cited on page 2 of this report, the proposed code amendments are in line with policies contained in the Comprehensive Plan and in Board of Supervisor's resolutions. In particular, Resolution #2010-16 contains policies to implement the City/County Water and Wastewater Phase 2 Report. The report contains a goal to maximize and make efficient use of renewable water supplies with a recommendation for continued encouragement of rainwater harvesting on residential, commercial, and government properties to defray the high costs associated with stormwater management and to develop a new source of local, renewable water supply. The report also contains a goal to increase use of rain and stormwater to reduce demands on potable supplies with a recommendation to review existing policies and regulations and evaluate how development standards may need to be modified to accommodate this strategy. A related goal is to address regulatory barriers to maximizing local water supplies.

Development Standards Exceptions for Shading Buildings and Structures

Another of the proposed amendments to Chapter 18.07 (General Regulations and Exceptions) is to add roof eaves and shade structures to the list of building features that may project a maximum of three feet into minimum required yards (distance setbacks) and to add "front" yards to the exception. The current listing of "unenclosed porches" for this exception is recommended to be changed to "roofed porches". As clarification, a statement is provided that the measurement for the projection is "from the face of the supporting structure or wall".

This amendment will facilitate shading of walls and windows of main buildings and guest houses, especially on small lots, which will reduce energy demand and expense for cooling the interior of buildings, provide for a more comfortable temperature in buildings during hotter months of the year when the sun is at a higher angle, and reduce heat generated from solar

exposer of structures (thereby reducing the heat contributing to the urban heat island in the metropolitan and suburban areas of Pima County). The projection allowance will have minimal, if any, negative impact on neighboring properties. Drainage from roofs and shade structures is not allowed to fall onto adjacent properties.

Development Standards Exceptions to Height Limits for Vegetated Roofs

The final proposed amendment to Chapter 18.07 (General Regulations and Exceptions) is to add vegetated roof systems to the list of items, such as chimneys and smokestacks, currently exempt from building height limit standards. Included in the height exceptions for vegetated roofs are related safety railings, enclosed roof access stairways or elevators (setback a minimum of 20 feet from roof edges), vegetative containers, and vegetation. Excluding vegetation, the components of a typical vegetated roof system can be expected to add 1.5 feet or less to the height of a roof depending upon the depth of the growing medium. An "extensive vegetated roof" has a shallow soil mix (six to eight inches or less) and accommodates smaller plant types. An "intensive vegetated roof" has a deep soil mix (eight inches and greater) and accommodates most plant types. (See attached exhibits on green roof components and types.) The potential extension of the height allowance is measured from the waterproof membrane, meaning that the additional height allowance above the maximum allowed for the zone only applies to the vegetated roof system and the listed features (safety railing, etc.).

Vegetated Roofs as an Option to Fulfill Amenity Landscape Requirement

The proposed amendment to Chapter 18.73 (Landscaping, Buffering and Screening Standards) will add vegetated roofs as an option to satisfy amenity landscape requirements. With some exceptions, amenity landscaping is required for developments that contain ten or more parking spaces. Amenity landscaping is required for an area equal to ten percent of the gross parking area. Options for satisfying the requirement include any combination of pedestrian median walkways within parking lots, twenty-five percent of the area of standard non-decorative sidewalks on site, one hundred percent of the area of decorative sidewalks on site, landscaped traffic islands, planters, or medians within parking areas (apart from shade tree requirements), interior project landscaping including fountains and sculptures, and courts, ramadas, and covered walkways. The vegetated roof option would be limited to plants listed in the Landscape Design Manual. This option does not affect requirements for landscape bufferyards or shade trees within parking areas. Granting open space credit for green roofs was a recommendation resulting from the Sustainable Land Use Code Audit Workshop (part of item 3.a.v of the "Next Steps" memo).

Vegetated roofs are not prevalent in Pima County or the desert Southwest, but it appears that they can work with the right plant selections (low water and indigenous) and soil mix and depth. For example, staff is aware of a residence in Pima County that uses a shallow light-weight soil composition that has shown success with a mixture of native grasses and flowers (see attached Riverfront Residence photos). The vegetated roof was funded by a grant from the Arizona Department of Environmental Quality as a demonstration project to mitigate run-off, reduce the urban heat island effect, and control erosion (AIArchitect, July 10, 2009). Other benefits of vegetated roofs include energy conservation (less air conditioning in the summer and heating in the winter and associated costs including potential for smaller HVAC units), sound insulation, extended roof life due to protection from ultraviolet radiation (cost and materials saving), better air quality (filtering of airborne particulates and pollution and reduction in carbon-based energy use), reduction in carbon dioxide (plant use and less energy use), filtration of rainwater runoff, wildlife habitat, amenity space, urban agriculture (not applicable as an amenity landscaping option), and aesthetic enhancement (in places where roof can be viewed).

Respectfully submitted,

David Petersen, AICP
Senior Planner

replenishment, conservation and use of renewable supplies of water, all designed to minimize impacts to the aquifer.

✳ D. Water Conservation Measures and Management Tools

1. The following Water Conservation Measures may be used by all new development in order to promote the efficient use of all water supplies and should be considered in context of mitigation of increased water demand projected between existing zoning and proposed rezonings.

   a. Site Planning
      1) Implement rainwater/storm water harvesting and reuse strategies.

      2) Implement swimming pool and spa water conservation measures.

      3) Implement effluent reuse strategies within the development.

      4) Install reclaimed effluent irrigation (where available) for individual properties and common areas.

      5) Install drought-tolerant native vegetation and drip irrigation systems with rain sensors.

      6) Co-locate parks in development detention basins.

      7) Minimize impervious surfaces to maximize storm water infiltration.

   b. Residential/Commercial and Buildings, including the above strategies at the residence/building scale and:

      1) Install gray water reuse plumbing systems.

      2) Install water efficient appliances and fixtures and automatic faucets, water-free urinals and/or dual flush toilets in common use buildings.

      3) Install plumbing systems that drain pools into the sewer.

      4) Limit private pool and spa construction.

      5) Install sub-metering for each tenant for multi-family and multi-occupancy commercial buildings.

      6) Provide "water-wise" or similar water conservation information as part of sales contracts to home buyers.

2. The following Management Tools may be used by Pima County in moving towards a more sustainable water future include:

   a. Consider the water use requirements of current and future residents of the area, as well as other needs, including the natural environment.

b. Work with neighboring counties to evaluate and provide input on water-resource impacts of development in adjacent jurisdictions, in accordance with State Statutes.

c. Maintain an inventory of County water resource assets including groundwater rights, surface rights and production and use of effluent to sustain and protect the County's natural environment.

d. Maximize acquisition of County water resource assets including groundwater rights, surface rights and production and use of effluent to sustain and protect the County's natural environment.

e. Amend land use regulations to require that all new houses discharging to septic systems also be provided with a gray water reuse system.

f. Revise design and construction standards to capture and mitigate storm water generated on-site for water harvesting and the incorporation of light-colored permeable materials into the pavement of parking lots and roads, to reduce heat-island effects, water runoff and dust emissions.

g. Limit pumping near shallow groundwater areas of regional importance – Methods for implementing this strategy include land use controls and the purchase of development and water rights.

h. Maximize use of CAP, rainfall, runoff and reclaimed water – Implementation methods might include County-sponsored, multi-purpose recharge and reuse projects, limitations on rezonings outside the service area and incentives to landowners.

i. Limit human groundwater use in certain areas – Implementation methods might include limitations on rezonings outside the service area and incentives to landowners.

j. Protect and promote natural recharge functions of watercourses – Implementation methods include floodplain management, land acquisition and land use decisions to minimize floodplain encroachments and maintain natural hydraulics and hydrology.

k. Utilize effluent and surface water for riparian restoration – Preservation of current discharges to the environment, storm water harvesting, repair of altered flow paths and allocation of the water resources to riparian preservation and restoration are favored implementation methods. County effluent uses shall sustain and protect the County's natural environment.

l. Reduce per capita consumption – Implementation methods might include landscape requirements and requirements for conservation features in new housing.

m. Limit turf water use – Limit the establishment of golf course uses and requirements that new courses use non-groundwater sources and limitations on the use of turf:

1) Grass is only to be used for functional purposes.

2) No lawns for decorative uses.

3) Plant only low water using turf.

4) Rely on rainfall as primary irrigator.

5) Set irrigation system timers or clock to manual only.

6) Landscape with drought tolerant, native plants – the following link includes a list of plants which are native to Pima County: http://www.pima.gov/cmo/sdcp/species/plants.html

n. Prevent subsidence – Implementation strategies include substitution of renewable supplies for groundwater and recharge in subsidence-prone areas.

o. Restore and preserve natural areas – Implementation of this strategy could include floodplain acquisition, improvements to the floodplain management ordinance, purchase of development and water rights and limitations on rezonings.

p. Rehabilitate or create wetlands and riparian areas – Use of reclaimed water, surface runoff and CAP is suggested. Multi-purpose recharge or water quality improvement projects are also suggested as an implementation method to realize this strategy.

q. Balance the water budget of Isolated Basins – Pursue options such as purchase of development or water rights and limitations on rezonings consistent with sustainable yield.

r. Implement a Water Supply Impact Review on rezoning proposals on property where the water system(s) that serve less than 15 homes, where such proposals will demonstrate to Pima County Department of Environmental Quality that it could serve an increased water demand before being approved. Potable water supply requirements for systems involving fewer than 15 homes will be developed as a condition of rezoning.

s. Domestic Water Improvement Districts (DWID) – Develop a board policy requiring consideration of the renewable supplies, available infrastructure, groundwater trends, subsidence, groundwater-dependent ecosystems and isolated basins in the development and approval of any new DWID.

~~x~~ t. Research and determine if a Zoning Code Text Amendment should be proposed for enacting Water Conservation Measures.

Resolution 2010-16

Pima County Resolution 2010-16

A RESOLUTION OF THE PIMA COUNTY BOARD OF SUPERVISORS SUPPORTING THE IMPLEMENTATION OF THE CITY/COUNTY WATER AND WASTEWATER STUDY PHASE 2 REPORT

Whereas, a healthy, sustainable, and vibrant future for Pima County and Tucson depends on effective and coordinated management of our limited water supplies in ways that sustain and enhance human health and welfare, economic vitality, and natural, ecological functions;

Whereas, the City of Tucson and Pima County initiated a joint Water and Wastewater Planning Study (Exhibit A) in April 2008 with goals to improve coordination between the City and County, compile a common set of facts, information and goals for planning for a sustainable water future, and involve the public in a transparent and inclusive process;

Whereas, the City of Tucson Mayor and Council and the Pima County Board of Supervisors respectively appointed 12 members of the public to serve on an Oversight Committee to direct the Study effort;

Whereas, 36 open public meetings were convened with the Oversight Committee on evenings and weekends over the past 21 months; four open houses were held to provide additional opportunity for the public to comment; and, an interactive public website, with online comment forms and mailing lists, was maintained so that interested members of the public could review and comment on all studies and reports generated by the study effort;

Whereas, Phase 1 resulted in a series of educational presentations and reports which established a common set of facts and information about the condition and capacity of the City/County water and wastewater systems, water resource supplies for the City/County Service Area and critical planning factors associated with planning for a sustainable water future;

Whereas, Committee members embarked on Phase II of the study effort in April 2009, with the goal of establishing a common set of water resource development and conservation goals;

Whereas, the Oversight Committee members dedicated an extraordinary level of time and energy to understanding and deliberating on the facts and information presented to them and issued a Phase I Report in March 2009, and a Phase II Final Report in December 2009 which sets forth the values and perspectives of the Oversight Committee, including a set of overarching principles and criteria for planning for a sustainable water future, and incorporates the City/County staff's 19 shared goals and the 56 joint recommendations;

Whereas, portions of the Draft Phase II report were modified to incorporate comments received from the public during the three-week public review period;

Whereas, the City/County Water and Wastewater Study involved an unprecedented level of coordination, communication and collaboration among City and County staff from multiple departments and disciplines; and

Whereas, the City/County Water and Wastewater Study produced a common set of facts, information, goals and recommendations which can now serve as a resource and building block for ongoing City/County collaboration and action and for a future regional dialogue on planning for a sustainable water future;

NOW THEREFORE, BE IT RESOLVED THAT THE PIMA COUNTY BOARD OF SUPERVISORS HEREBY:

1) Supports the City/County staff and Oversight Committee's recommendations as set forth in the City/County Water and Wastewater Study Phase II Final Report (Exhibit B) dated December 30, 2009 which will:

   - Ensure land use planning and water resources and infrastructure planning are integrated and operating in tandem toward common sustainability goals.
   - Guide new development so that it is designed and located in an economically, environmentally, socially, and fiscally sustainable, as well as water efficient manner.
   - Dedicate an appropriate balance of water for protection and restoration of the environment and ensure it is put to use in an efficient, effective, and multi-beneficial manner.
   - Establish a reliable, diversified water resource portfolio to sustain our current and future residents, grow and strengthen our economy, and maintain our quality of life.
   - Increase the amount of turf being irrigated with reclaimed and recycled water to replace potable water and ground water pumping.
   - Put to better use our locally renewable supplies - effluent and rainwater – in order to conserve imported water and groundwater, and save on energy required to move water.
   - Elevate public awareness regionally about water efficiency and drought to continue to strengthen our community's water conservation ethic and practice.
   - Ensure we are prepared for a variety of scenarios that could unfold due to climate change - both locally and within the Colorado Rivershed.

2) Directs County staff to continue to work with the City of Tucson to implement the recommendations set forth in the Phase II report as summarized in the implementation matrix (Exhibit C).

3) Proposes that the Pima Association of Governments (PAG) convene an expanded, regional Water and Wastewater Study process that would include all PAG member jurisdictions, all regional water and wastewater providers, technical and non-technical stakeholders, and the general public. The regional items shown in Exhibit B, and the items included in Phases III-V of the original Water Study Scope of Work (Exhibit A) are issues that could be addressed in the regional process, among others;

4) Proposes that the Regional Wastewater Reclamation Advisory Committee, the Citizen's Water Advisory Committee, Pima County Planning and Zoning Commission and the City Planning Commission continue to provide oversight and a venue for public participation in the implementation of the Phase II report recommendations assigned to the City and County.

5) Directs the County Administrator to appoint staff to coordinate the implementation of the Phase II recommendations including:
   - Within 6 months, creating a more detailed action plan to implement the recommendations that includes a timeline, deliverables, costs, roles and responsibilities;
   - Tracking, monitoring and reporting on progress toward implementing the Study's Phase II recommendations;
   - Providing support for a regional dialogue and a continued focus on a coordinated, transparent and inclusive planning process to achieve a sustainable water future.

Passed and adopted this 12 day of January, 2010.

Pima County

Chairman, Board of Supervisors

ATTEST: JAN 12 2010

Clerk of the Board of Supervisors

APPROVED AS TO FORM:

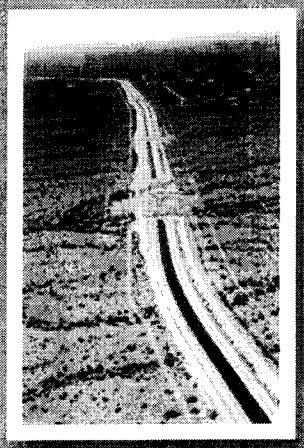
Deputy County Attorney

A City of Tucson and Pima County Cooperative Project

Phase 2 Final Report

Water & Wastewater

Infrastructure, Supply & Planning Study



December 2009

Table of Contents

*The printed version of the Report includes sections I-V only. Section VI, Appendices, can be found on the study website: www.tucsonpimawaterstudy.com

III. SHARED GOALS AND RECOMMENDATIONS

Part III of this report summarizes information from the 14 technical reports and identifies goals and recommendations in four categories that were co-developed by planning staff from the City of Tucson and Pima County. The following chart shows these goals and recommendations at-a-glance; a narration of issues and explanations of goals and recommendations follows the chart.

Comprehensive Integrated Planning

1 Encourage sustainable urban forms
- 1.1 Require and encourage smart growth principles

2 Direct growth to suitable growth areas
- 2.1 Encourage growth in four (4) suitable growth areas / existing built environment as highest priority
- 2.2 Link capital planning and land use planning / direct investment to desired growth areas
- 2.3 Acquire open space to define desired growth areas
- 2.4 Conduct regional growth scenario modeling

3 Integrate land use planning and water resources planning
- 3.1 Conduct comprehensive water resource planning outside of the obligated service area
- 3.2 Consider obligated service area expansion based on above analysis and additional criteria
- 3.3 Continue to track resources for new development / County Water Element, City Water Checkbook
- 3.4 Pursue wheeling and recharge agreements
- 3.5 Work toward regional solutions to address any hydrological pumping/recharge disconnect

4 Growth should pay for itself over time and be financially sustainable
- 4.1 Put mechanisms in place to ensure fiscal sustainability of new development
- 4.2 Continue to ensure "growth pays for growth" in water and wastewater financial planning

Respect for the Environment

1 Preserve existing riparian areas through coordinated regulation, policy, and outreach
- 1.1 Continue preservation through acquisition, regulation, education and outreach
- 1.2 Address non-exempt wells and surface water diversions affecting riparian areas

2 Identify needs and opportunities for future restoration
- 2.1 Develop regional policy on regulatory compliance projects
- 2.2 Collaborate regionally on riparian restoration
- 2.3 Work with ADEQ on water quality standards for habitat restoration

3 Ensure that public projects are multi-benefit, including restoration, stormwater management, recharge, and public amenity
- 3.1 Pursue multi-benefit public projects using reclaimed water
- 3.2 Pursue stormwater management opportunities in areas dominated by impervious surface

4 Ensure the future of riparian and aquatic habitat along the effluent-dependent reach of the Santa Cruz River
- 4.1 Advocate for changes to allow full recharge credit for Secretary of Interior effluent
- 4.2 Develop a "Lower Santa Cruz River Management Plan"
- 4.3 Build upon pilot restoration demonstration projects to develop a portfolio of multi-purpose projects
- 4.4 Incorporate in-channel and off-channel recharge facilities

5 Develop water supply for the environment
- 5.1 Finalize the Intergovernmental Agreement (IGA) for the Conservation Effluent Pool
- 5.2 Link water conservation to environmental preservation/restoration

Water Supply

1 Work collaboratively to acquire new water supplies for reliability
- 1.1 Maximize opportunities to acquire water supplies through regional cooperation and the "Acquire, Develop and Deliver" (ADD) water process
- 1.2 Tucson Water should acquire additional supplies to buttress its Central Arizona Project (CAP) allocation and serve growth in the obligated service area
- 1.3 Consider all costs and benefits in the acquisition of new supplies

2 Maximize and make efficient use of effluent and other locally renewable water supplies

- 2.1 Balance uses of effluent - reclaimed, environment and aquifer recharge
- 2.2 Continue to implement Regional Optimization Master Plan (ROMP) improvements
- 2.3 Stay vigilant about water quality
- 2.4 Evaluate reclaimed expansion from the perspectives of efficiency and overall water resource portfolio
- 2.5 Continue to evaluate greywater expansion
- 2.6 Continue to encourage rainwater harvesting

3 Address regulatory barriers to maximizing local supplies

- 3.1 Address groundwater credits to provide incentives to convert to reclaimed
- 3.2 Move to Class A+ water for the reclaimed system
- 3.3 Work with Arizona Department of Environmental Quality (ADEQ) and Arizona Department of Water Resources (ADWR) regarding water quality standards for riparian projects

4 Foster increased use of reclaimed water through system expansions, increased effluent allocations, and incentives

- 4.1 Expand financing options
- 4.2 Maintain private payer and explore pricing incentives to encourage conversion
- 4.3 Lower operating cost by increasing system efficiencies
- 4.4 Consider reclaimed water in new developments
- 4.5 Consider other uses of reclaimed water for municipal and environmental supply needs
- 4.6 Increase the amount of effluent dedicated to reclaimed
- 4.7 Attract additional reclaimed customers based on efficiency considerations and benefits achieved

5 Be prepared for climate change and drought

- 5.1 Continue multi-pronged planning approach
- 5.2 Use scenario planning

Demand Management

1 Increase the effectiveness of conservation programming through coordinated planning and evaluation

- 1.1 Collect uniform data on water use patterns to identify conservation potential
- 1.2 Use triple bottom line and cost/benefit analysis to improve conservation programming
- 1.3 Employ an adaptive planning approach to drought preparedness

2 Establish common water conservation goals and targeted methods

- 2.1 Establish regional, measurable water efficiency and conservation goals
- 2.2 Develop regional water conservation approaches

3 Manage demand through design of the built environment

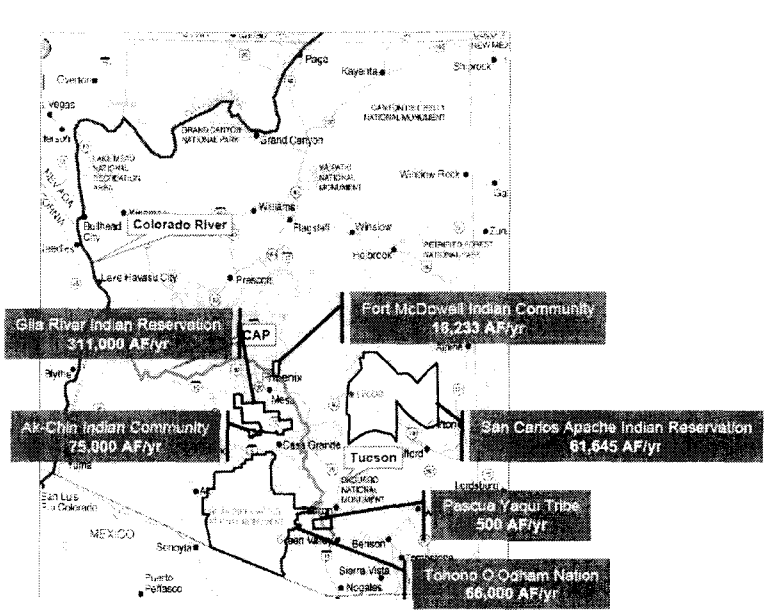
- 3.1 Review development regulations for consistency and improved potable water conservation

4 Manage demand through changing behaviors

- 4.1 Gather public input regarding quality of life trade-offs associated with water efficiency
- 4.2 Advance a regional approach to conservation education, communication, pilot projects and training

5 Increase the use of rainwater and stormwater to reduce demands on potable supplies

- 5.1 Develop design guidelines for neighborhood stormwater harvesting
- 5.2 Analyze expanded water and stormwater harvesting potential and benefits



(Left) Indian CAP allotments are potential water sources; (Right) The Central Arizona Project (photo by Link576 - must credit)

Recommendations

1.1 As the ADD Water stakeholder process proceeds, local water providers and users should maximize opportunities to acquire ADD water supplies and explore options to finance these additional supplies when they become available.

1.2 All Municipal and Industrial priority CAP allocations will be vulnerable in times of severe shortage on the Colorado River. Therefore, Tucson Water should take the necessary steps to have additional, more reliable water resources to reinforce and buttress its CAP water allocation to serve growth in the existing built environment and the yet-undeveloped areas of Tucson Water's Obligated Service Area.

1.3 The City and County should continue to jointly plan for the acquisition of additional supplies to maximize shared system efficiencies and to achieve their respective sustainability goals. These goals should collectively take into account social, economic, and environmental factors to ensure that all costs and benefits are considered.

Goal #2: Maximize and Make Efficient Use of Effluent and Other Locally Renewable Water Supplies

A sustainable water future is one in which we continue to broaden our view of water resources and place a greater priority on locally-renewable resources (effluent and rainwater). Effluent is typically put to use in the reclaimed system and for aquifer augmentation, while rainwater is put to use through stormwater capture and rainwater harvesting. Greater emphasis should be placed on maximizing the use of these resources and, going forward, they should be considered an important component of our community's water resource portfolio.

While the reclaimed system is an important tool for putting effluent to use, there are multiple valued uses for effluent and these uses should be maintained over time (the reclaimed system, environmental purposes, and aquifer augmentation). Use of reclaimed water does not make sense everywhere because the reclaimed system is expensive to construct and requires energy to move water through it. The use of reclaimed water should be evaluated in the overall context of maximizing the community's water resource portfolio. The key is matching up the most effective and resource-efficient water source with the needs of a particular site.

Greywater is another recycled water resource used in a similar manner as the reclaimed system, typically replacing potable water for outdoor watering but with the added benefit of being used on-site, and thereby eliminating energy and infrastructural costs of transport.

Native vegetation irrigated with harvested stormwater at Highland Vista Park – from Stormwater paper

✳ Rainfall is another important local source of water which, when captured and harvested, can be used to replace potable water. However, the sporadic nature of rainfall requires that proposed uses be adaptable to seasonal rainfall patterns and annual variability. Rainwater harvesting is an ancient technology that is becoming increasingly appealing, particularly in the Southwest's urban areas. Harvesting can be done at both the lot scale, and at the community scale (and then it is considered stormwater). Rainfall is not a resource managed by water utilities, so has typically not been seen as part of the "water resource portfolio." But this view is changing. The City now has in place ordinances to require greywater systems in new residential construction and rainwater harvesting for new commercial development. The County has enacted land use regulations requiring water efficiency targets be met, including putting to use effluent/reclaimed and rainwater.

Implementing ROMP is the single most effective step to be taken to minimize concerns about emerging contaminants and, through water quality improvement, to bolster effluent's role in providing a sustainable water supply.

Recommendations

2.1 The City and County should continue to balance the uses of effluent, dedicating it to the reclaimed system, to environmental purposes, and for aquifer augmentation/recharge credits.

2.2 Continue to implement ROMP improvements as currently planned and budgeted.

2.3 The City and County should remain vigilant about water quality by continuing efforts at source control, maintaining proactive system monitoring, conducting public outreach & education, and staying abreast of research and regulatory developments related to emerging contaminants in water and wastewater systems.

2.4 The City and County should evaluate the use of reclaimed water for particular sites--with the goal of maximizing the community's overall water resource portfolio--by matching up the most effective and resource-efficient water source with the needs of a particular site.

2.5 Tucson Water and Pima County Wastewater should continue to assess the potential water supply benefits as well as the adverse consequences of expanded greywater use within their respective service areas.

✳ 2.6 The City of Tucson and Pima County will continue encouraging rainwater harvesting on residential, commercial, and government properties to defray the high costs associated with stormwater management, and to develop a new source of local, renewable water supply.

Goal #3: Address Regulatory Barriers to Maximizing Local Supplies

The use of effluent and the reclaimed system are regulated by the Arizona Department of Water Resources (ADWR) and the Arizona Department of Environmental Quality (ADEQ). They ensure that appropriate standards are in place to protect public health and the environment. In some cases however, our ability to maximize our use of locally renewable water supplies is impeded by the way these regulations are set up. The regulatory changes recommended below would not compromise public health or water quality standards but would assist in our ability to attract reclaimed customers, lower the cost of operating the reclaimed system, expand the potential customer base, and allow additional environmental restoration projects using effluent to be constructed.

Recommendations

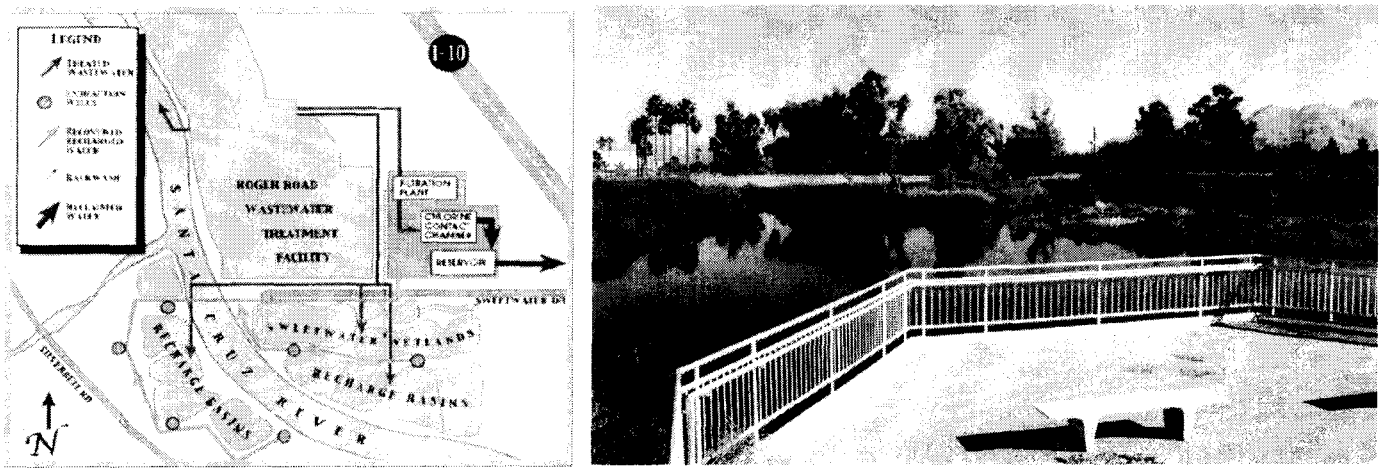
3.1 Refine policy and regulations governing the accrual of groundwater credits to provide incentives for conversion to reclaimed water from groundwater pumping. Groundwater turf users proximate to reclaimed lines would be eligible.

3.2 Develop alternative operational and permitting strategies to achieve a Class A+ or equivalent water supply for the reclaimed system.

3.3 The City and County should continue to work with ADEQ and ADWR to develop water quality standards, permits, and designations specifically for riparian projects.

Goal #4: Foster Increased Use of Reclaimed Water through System Expansions, Increased Effluent Allocations, and Incentives

Tucson Water has constructed a very extensive reclaimed system over the past 25 years, and most of the customers for whom there is an economic incentive to convert to reclaimed water have already been connected to the system. The reclaimed system currently has over 900 customers and utilizes 42 percent of Tucson Water's effluent allocation and 27 percent of Pima County's allocation.



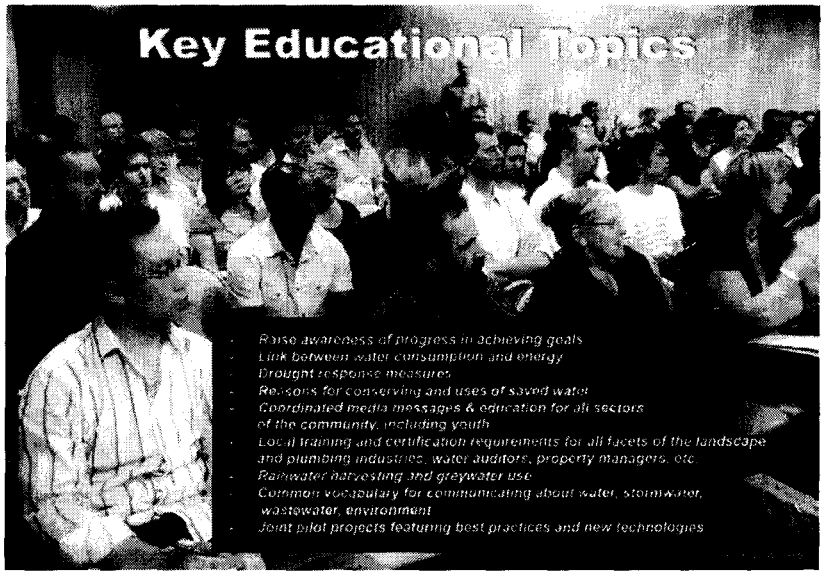
Tucson Water's Reclaimed Water Plant and adjacent Sweetwater Wetlands

The use of reclaimed water must be considered within the broader context of sustainability, with the goal of maximizing our water resource portfolio as a community. There are other valued uses for effluent besides use in the reclaimed system (environmental and aquifer augmentation purposes) and there are other water resources that should be considered for outdoor irrigation such as stormwater and rainwater harvesting. Resource efficiency, energy requirements and infrastructure cost should be primary considerations driving expansion of the reclaimed system.

There is additional capacity for expanding the reclaimed system. The City and County should establish expansion targets, prioritize customers, and create options for overcoming financial and regulatory issues that have been barriers to maximizing our use of reclaimed water in the past.

Recommendations

4.1 The City and County, working in cooperation with regional stakeholders, should gather public input regarding water efficiency measures and goals and consider it in the planning and decision making process. An initial step should be to define a list of public opinion survey questions that explore public perceptions of quality-of-life tradeoffs associated with water efficiency measure, and preferred strategies to achieve shared goals. Methods for gathering public input on these questions should also be explored.

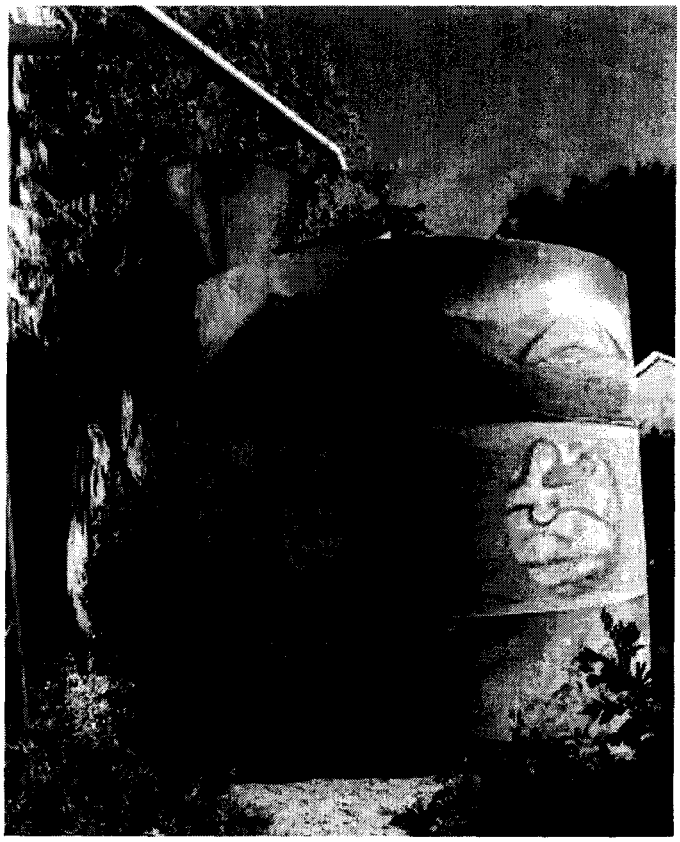


4.2 The City of Tucson and Pima County should explore the feasibility and benefits of consolidating existing programs and fostering regional approaches and partnerships for advancing water conservation and drought education, communications, pilot projects, and training.

✳ Goal #5: Increase Use of Rainwater and Stormwater to Reduce Demands on Potable Supplies

The intent of this goal is to reduce use of potable water to meet outdoor needs to the maximum extent feasible through optimization of harvested rainwater, greywater reuse and/or reclaimed water. As projects with multiple benefits are developed, the impacts of these benefits--such as use of water harvesting for increased floodwater retention, limiting the migration of contaminants, reduction in demand on potable resources, mitigation of the urban heat island effect and habitat restoration--must be considered rather than simply evaluating the costs and benefits from a water supply perspective.

The Water CASA technical paper on water conservation recommends adopting a goal to eliminate potable water for all outdoor water use. Although staff supports a strong emphasis on maximizing use of renewable water resources such as reclaimed water, rainwater and greywater for outdoor needs, we recommend further analysis of potential unintended consequences of such a goal. Some issues to consider include examination of the tradeoffs in balancing the allocation of water to meet social equity and environmental goals. Could this impact, for example, the region's ability to support recreational turf in areas (potentially low income areas) without access to non-potable supplies? Additionally, there may be areas where the most cost-effective approach is to use groundwater supplies to shore up depleted aquifers that threaten sensitive ecosystems and to balance those withdrawals with recharge of effluent in other areas. The balancing of water needs and water availability requires flexibility and adaptability. A one-size-fits-all policy may not accommodate our ability to optimize resources in meeting the broad range of human, environmental, and economic needs and goals.



Rainwater cistern (photo by Brad Lancaster, used with permission)

Recommendations

5.1 The Pima County Regional Flood Control District, in cooperation with the City of Tucson and other regional stakeholders, should develop design guidelines/standards to maximize the potential for use of stormwater at the neighborhood scale.

Using harvested stormwater for vegetation will eliminate the need for some landscape watering. Stormwater flow paths can be depressed to encourage the potential for infiltration, and native vegetation can be planted that will thrive in these depressed flow paths. Such a strategy will have the additional benefit of reducing flood peaks and improving stormwater quality. To accomplish this, the City and County will review existing policies and regulations and

- Identify opportunities to increase the incidence of water harvesting in private developments through new or expanded incentives and improved consistency between City and County requirements
- Evaluate how development standards and HOA regulations may need to be modified to accommodate this strategy
- Develop retention/detention standards that allow these areas to be better utilized as mini-restoration sites, including maintenance standards and siting of basins within a development/project
- Develop restoration standards that encourage the creation of higher-value habitat areas without sacrificing the retention/detention function of the basins

5.2 The Pima County Regional Flood Control District, in cooperation with the City of Tucson, should continue to conduct research and analysis on estimated volumes of harvested rainwater available at the lot scale, as well as costs and benefits of water harvesting as a source of additional water supply and as a stormwater management tool.

Resolution 2007-84

RESOLUTION NO. 2007-84

A RESOLUTION OF THE PIMA COUNTY BOARD OF SUPERVISORS IN SUPPORT OF NEW COUNTY SUSTAINABILITY INITIATIVES

WHEREAS, sustainability is often defined as improving the quality of life for current generations without compromising the resources needed for future generations; and

WHEREAS, Pima County has supported past initiatives to improve and sustain a livable community, including initiatives in the areas of land and water conservation, air quality improvements, cultural resource preservation, urban development guidelines, recreation, public health, affordable housing, and neighborhood reinvestment; and

WHEREAS, the Board of Supervisors adopted the Sonoran Desert Conservation and Comprehensive Land Use Plan in 2001; and

WHEREAS, since 1974, Pima County voters have approved over $230 million in bond funds for land purchases to conserve our natural and cultural heritage; and

WHEREAS, since 1974, Pima County has purchased over 45,000 acres of open space property, and grazing leases for 86,000 acres of open space, which property is managed by the County for conservation purposes; and

WHEREAS, Pima County has begun collecting environmental enhancement fees as a percentage of revenues from particular development projects in order to mitigate development impacts to conservation areas; and

WHEREAS, the Board of Supervisors adopted Pima County Resolution 2003-88 supporting Congressional designation of the Santa Cruz National Heritage Area to promote regional conservation of our natural and cultural heritage areas, and to sustain tourism as a key sector of our regional economy; and

WHEREAS, the Board of Supervisors adopted revisions to the Riparian Mitigation Ordinance in 2005 to avoid and minimize impacts to riparian vegetation on local washes; and

WHEREAS, the Board of Supervisors amended the golf course ordinance to require new golf courses to be irrigated with directly-served effluent, reclaimed water or Central Arizona Project (CAP) water; and

WHEREAS, in 2006 the Board of Supervisors directed staff to begin an update to the Water Resources Element of the Comprehensive Plan to better address land use and water resource planning, and to provide additional information to the Board on riparian resource issues during the review of developments; and

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WHEREAS, the Board of Supervisors approved Resolution 2005-124 and 2007-15 opposing mining in biologically important areas of the County that would degrade water quantity and water quality, negatively impact key tourism sites, and compromise quality of life for surrounding residents; and

WHEREAS, Pima County uses effluent, storm water, and reclaimed water for riparian rehabilitation and restoration efforts, as well as recreational facilities; and

WHEREAS, in 2007 the County Administrator directed staff to add energy guidance into this year's update of the Comprehensive Plan; and

WHEREAS, the Board of Supervisors has adopted regulations to prevent and reduce air pollution, protect public health, and restore and preserve the quality of the outdoor air in Pima County; and

WHEREAS, in January, 2007 Pima County was the first county in the state to adopt a Transfer of Development Rights program permitting willing sellers of land with conservation value to sell development rights to owners of land more suitable for more intense development; and

WHEREAS, the Board of Supervisors adopted the Recreation Areas in Residential Subdivisions Ordinance in 2003 to require recreation areas within new subdivisions and to collect fees to benefit the regional park system; and

WHEREAS, the Board of Supervisors in 2007 approved a concept for partnering with Native Seeds/SEARCH to promote the health benefits of eating native foods and the benefits of reduced energy consumption by growing or purchasing locally grown food; and

WHEREAS, voters approved the issuance of a combined total of $25 million in bonds since 1997 to fund Neighborhood Reinvestment projects in high stress areas of Pima County, such as traffic mitigation devices, street lights, park improvements, sidewalks, walking paths, pedestrian bridges, sports facilities, and community buildings, which neighbors report have positively benefited their communities; and

WHEREAS, the Board of Supervisors in 2005 adopted an affordable housing fee to be required for certain new subdivisions that, when combined with $15 million of bond funding approved by voters in 1997 and 2004, provides revenues to an Affordable Housing Trust fund to expand the supply of affordable housing in Pima County; and

WHEREAS, Pima County recognizes that the scientific community has developed a consensus that increasing emissions of carbon dioxide, methane and other greenhouse gases into the atmosphere is affecting the Earth's climate; and

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WHEREAS, the Board of Supervisors recognizes and accepts its responsibility to continue implementing and promoting sustainable practices that protect the County's natural and built environment; and

WHEREAS, new sustainable development initiatives for Pima County must address the environmental, economic, and social characteristics of our community;

NOW THEREFORE, BE IT RESOLVED THAT:

1. The Pima County Board of Supervisors supports sustainable development and the continual emphasis on sustaining a livable community.

2. The Pima County Board Of Supervisors supports implementation of a green building initiative and other sustainable initiatives regarding county facilities and vehicles, including the following goals and aspirations:

   a) Shifting to more environment-friendly alternative fuels for its vehicular fleet such that: twenty-five percent (25%) or a minimum of one hundred (100) vehicles of the County's fleet of vehicles, excluding Sheriff patrol vehicles, shall consist of Alternative Fuel Vehicles by 2008. This percentage shall increase to thirty percent (30%) by 2009 and fifty percent (50%) by 2010.

   b) Applying a green purchasing and waste reduction emphasis to all County facilities.

   c) Maximizing County water resource assets including groundwater rights, surface rights and production and use of effluent to sustain and protect the County's natural environment.

   d) Reducing water consumption by fifteen percent (15%) in all County facilities by 2025. Water reduction strategies will include conducting water audits, replacing high water-use fixtures and replacing high water-use decorative landscaping with drought tolerant native landscaping.

   e) Doubling the number of County parks served by reclaimed water by 2018, subject to voter approval of bond funds to extend reclaimed water lines.

   f) Designing and building all new occupied County buildings, including additions over 5000 square feet, for which design is initiated after July 1, 2007, to achieve a minimum of LEED™ Silver certification level.

   g) Maintaining All LEED™ certified County facilities under LEED™ for Existing Buildings and attempting to apply the same standard to all existing facilities.

   h) Applying the above LEED™ criteria to all projects funded through County bonds as a condition of funding and regardless of jurisdictional project sponsorship.

i) Designing and constructing at least one medium size County building with a net zero energy consumption.

j) Adhering to the Renewable Energy Standard adopted by the Arizona Corporation Commission such that fifteen percent (15%) of all County facilities' electrical energy consumption shall be generated from renewable resources by 2025.

k) Maximizing renewable energy resources from the production of methane in County wastewater treatment and landfill operations and use them to offset non-renewable energy needs.

* 3. Pima County will encourage the construction of new residential, commercial, and industrial facilities employing green building concepts throughout the county by embracing a sustainable development emphasis and by considering:

a) The creation of incentive-based green building residential and commercial programs.

b) The incorporation of solar systems, solar orientation of structures, solar access, and smart growth principles into County development planning including exploring the possibility of requiring that that a minimum of fifty percent (50%) of homes constructed after 2010 include direct solar assisted energy through solar hot water or photovoltaic elements.

c) The amendment of land use regulations to require that all new houses discharging to septic systems also be provided with a grey water reuse system.

* d) The revision of design and construction standards to capture and mitigate storm-water generated on-site for purposes of water harvesting and the incorporation, into the pavement of parking lots and roads, of light-colored permeable materials to reduce heat-island effects, water runoff, and dust emissions.

4. In order to maintain an emphasis on sustainable development initiatives organizationally the County Administrator is hereby directed to:

a) Appoint a sustainability coordinator from existing staff to identify departments and organizational units within Pima County that contribute to sustainability efforts, establish an organizational structure that facilitates the coordination of efforts between departments and organizational units, and coordinate sustainable policy and initiatives with other jurisdictions.

5. Appoint an Energy Manager from existing staff to produce a comprehensive County facilities energy plan, track progress of County energy programs, and help facilitate LEED™ implementation.

Passed and adopted by the Pima County Board of Supervisors this 1st day of May, 2007.

Chairman, Pima County Board of Supervisors

MAY 01 2007

ATTEST:

Clerk of the Board

APPROVED AS TO FORM:

Deputy County Attorney

EPA Technical Assistance for Sustainable Communities: Building Blocks

Technical Assistance Tool: Sustainable Design + Development
Pima County, AZ
April 11-12, 2012

To: Arlan Colton, Pima County Planning Director

From: Chris Duerksen, Clarion Associates

Roger Millar, Smart Growth America

Date: June 2, 2012

Re: Sustainable Code Workshop Summary And Suggested Next Steps As Outcome Of Technical Assistance

1. Overview/Background

- The evening meeting on April 11 had moderate attendance—about 25 people including a planning commission member. The Public Works deputy county administrator was also present and took part in the discussion. Additionally, a local TV station interviewed the planning director Arlan Colton prior to the meeting. The attendees were engaged and had a number of suggestions for additional topics. They were clearly eager to see the county pursue incorporating sustainability elements into the county's comprehensive plan (which is scheduled to be updated beginning at the end of this year) and then amending the zoning ordinance and subdivision regulations.
- There appears to be significant support for sustainability measures among citizens who attended evening meeting, including representatives of non-profit organizations. No elected officials attended any of the meetings, although a majority of the Planning and Zoning Commission and two county Board of Supervisors staffers attended the lunch meeting on April 12. The Board staffers stated they supported the general concepts and recommendations made for code changes to promote sustainability and thought the initiative was headed in the right direction. The commissioners were also supportive of this effort. There was an excellent turnout of other key county department heads and leaders including public works and health.
- The county has clearly taken some important steps in the past to support sustainable development. The county is noted nationally for its Sonoran Desert Conservation Plan and water conservation, dark sky, and native vegetation protection efforts. The county has also created a voluntary residential green building program for developers that is promising and recently updated its zoning code to include provisions to promote solar power and created a renewable energy incentive district. However, overall the county's zoning code is quite dated and has few provisions that address sustainability topics such as energy conservation, community health, urban agriculture, and housing choices. The zoning code has a progressive mixed-use industrial district but nothing comparable for the county's commercial areas. There are virtually no provisions dealing with solar access, and community gardens and farmers markets are not specifically addressed. Moreover, alternative housing choices such as accessory dwelling units are severely restricted by code provisions. According to some planning department staff, the current zoning code allows more sustainability options than would appear on its face, but all agree that key areas (such as alternative energy

systems development standards and definitions of key terms like community gardens) need to be made clear so no one needs to interpret or guess as to what is allowed or required.

- Mr. Colton and several other participants in the workshop stressed that conditions vary in unincorporated Pima County from near-urban to rural. Consequently, a one-size-fits-all approach to sustainable code amendments will probably not work. Incentives and standards need to be tailored to a variety of conditions on the ground.
- There was general consensus given the state of the economy in Tucson/Pima County and the general political climate, that removing barriers in the zoning code to sustainable development and creating incentives should be the first focus; the focus should not be predominantly on enacting a host of new prescriptive regulations—although some may be necessary.

2. Key Issues Addressed during the Site Visit

There was general agreement on the three main topics the planning staff recommended for further exploration as discussed below.

- Energy Conservation/Alternative Energy—Reduce energy use and increase use of renewable energy sources.
- Community Health and Safety—Protect community health and promote local food production.
- Housing Diversity/Choices—Provide a range of housing choices for all income and age groups.

Additional topics suggested by workshop participants for future consideration when the county undertakes a comprehensive sustainable code assessment included recycling (e.g., control of construction site wastes) and zoning code landscaping standards (that some believe requires costly over- landscaping and thus unnecessary over-watering and excessive wall element requirements in some bufferyards).

3. Targeted Policies/Ideas/Strategies Discussed during the Workshop

a. Energy conservation/renewable energy—Reduce fossil-fuel based energy use and increase use of renewable energy sources such as solar, wind, and geothermal (e.g., ground-source heat pumps).

i. Remove barriers to mixed-use by creating a more effective by-right mixed-use zone district and/or allowing by right more non-residential uses in single or limited use residential and office zones to permit preferred types of development without additional hearings or protracted negotiations. The existing CI-1 Light Industrial Zone can serve as a good starting point.

ii. Remove potential barriers to alternative energy systems in addition to solar (wind energy conversion systems, ground-source heat pumps) by drafting definitions and adopting clear authority for such in all zone districts with protective standards. Establish process to protect solar access for newly installed solar panels. Allow clothes lines by right in all zone districts and ban covenants in new master planned communities that restrict them. Modify subdivision standards to promote proper solar orientation of new subdivision lots.

iii. Remove potential barriers to community gardens and urban agriculture that can reduce need to import food (with associated transportation energy use). Set forth clear definitions in the zoning ordinance and make clear that community gardens are allowed and count towards any

open space requirements. Allow small-scale composting in residential areas/community gardens.

iv. Amend the current nonconforming use/building regulations to allow "green" building updates and renovations (for example, addition of solar panels, green and cool roofs) without requiring full development code compliance.

v. Create incentives for green building projects through expedited permitting (the new renewable energy incentive district can provide a starting point for discussions). Grant open space credit or density bonuses for green roofs.

vi. Address in the comprehensive plan permitting higher density and mixed-use developments near transit stops. Follow-up on existing comprehensive plan policy that calls for formulation of incentives to encourage such development within Growth Areas and along transit corridors.

vii. Implement through code revisions existing comprehensive plan policy that calls for requiring minimum densities in the MHIU, HIU, CAC, MFC, and REAC plan designations, especially to prevent key sites from being developed at low densities that are not transit-supportive.

viii. Consider requiring "cool" roofs with high solar reflectivity on all new multi-family, commercial, and industrial buildings.

ix. Adopt priority parking provisions for alternative fuel vehicles. Consider requiring electric vehicle recharging stations in all large parking lots.

b. Community Health and Safety: Protect community health and provide a safe environment for all citizens.

i. Remove potential barriers to community gardens and urban agriculture to help provide more nutritious food for local residents. Define key terms and make clear where community gardens and farmers markets are allowed. Clarify zoning rules for raising fowl and small animals; include protective standards for neighbors.

ii. Offer bonus open space credit for maintaining public lands access through new developments and for community gardens and green roofs.

iii. Reduce vehicle parking requirements for development projects that provide enhanced bicycle facilities (e.g., indoor lockers, showers) or adopt transportation demand management programs.

iv. Reopen discussion of pedestrian connectivity issues and requiring sidewalks, complete streets, and safe-school routes for all new developments.

v. Enact standards requiring provision of weather protection and shade structures or shade trees along sidewalks in commercial areas and in parking lots as done in other desert communities.

vi. Adopt wildland/urban interface standards for areas subject to wildfires.

c. Housing Choices—Provide housing choices for all age and income groups in identified major unincorporated communities, including work force housing.

i. Allow live/work units in all commercial and office zones by-right without additional public hearings.

ii. Expand recently amended guest house regulations to permit detached accessory dwelling units with fewer restrictions in most residential zone districts (e.g., could be used by non-guests for permanent housing). Include protective standards relating to unit ownership, size, and design.
iii. Offer density bonuses for projects with a mix of housing types and units.
iv. Grant parking reductions for affordable multi-family projects.

4. Actions to Address Policies/Strategies

a. Consider some quick successes—address several of the low-hanging fruit opportunities outlined in the workshop presentation to make some "quick fixes" to the zoning code to promote sustainable development. For example, add provisions specifically allowing small wind energy systems and ground-source heat pumps in selected residential and commercial zone districts with protective standards and require cool roofs on new multi-family and commercial buildings.
b. The county has a tremendous opportunity to establish a solid foundation for future sustainable code amendments through the soon-to-be initiated rewrite of the county comprehensive plan. It should make sure that effort is adequately staffed and fully funded so that it can be completed expeditiously. The new plan should identify key sustainability topics that are important in Pima County such as energy conservation, community health, recycling, and housing choices, establish policies, set measurable goals, and identify implementation actions.
c. Once the new comprehensive plan is completed, the county should undertake a thorough assessment of its development codes to identify amendments necessary to implement the comprehensive plan and recommended sustainable development measures. Care should be taken to tailor recommendations for changes to code and other standards in a manner that recognizes the variety of development conditions in Pima County (near-urban, suburban, rural), getting away from a "one size fits all" approach.
d. Explore building on the county's voluntary green building program and consider using it as the foundation for a green building rating system to be used in reviewing rezoning proposals. Where necessary, consider providing alternative regulatory frameworks in the code and other standards to encourage creative development projects and patterns while still meeting Arizona Proposition 207 requirements. Examples exist in other jurisdictions in the state. This implies a focus on flexibility and choices to meet policy goals and objectives

5. Timeframe for Accomplishing Actions

The work on the comprehensive plan should begin as soon as possible. In the mid-term, starting in 2012 and continuing for a year or two, the county should assess its development codes and standards from a sustainability perspective and amend them accordingly.

6. Implementation Coordination

It will be important to continue the involvement of relevant county departments including health and those in public works in crafting a new sustainability framework or element of the comprehensive plan.

Standard Operating Procedure 250.4
Development Services Department

Development Services	STANDARD OPERATING PROCEDURE BUILDING & SITE DEVELOPMENT	Number: 250.4
Approval: Yves Khawam		Effective Date: June 11, 2008
Subject: Permitting requirements for water tanks		Page 1 of 2

1.0 PURPOSE:

This document clarifies permitting requirements for water tanks/rain harvesting cisterns.

2.0 REVISION HISTORY:

Revised on 8/10/10 to merge building and zoning requirements. Renumbered SOP from 640.1 on 12/30/10.

3.0 PERSONS AFFECTED:

Permitting staff and public at large.

4.0 ADMINISTRATIVE POLICY:

Permitting requirements for rainwater harvesting cistern/tanks shall be as follows:

- Water tanks supported directly on grade of up to 1000 gallons used for water storage or rain harvesting purposes are exempt from permitting requirements regardless of aspect ratio.
- Water tanks supported directly on grade between 1000 gallons and 5000 gallons are exempt from permitting requirements when ratio of height to diameter or width does not exceed 2:1.
- Water tanks exceeding 5000 gallons shall require a building permit.
- All water cisterns/tanks exceeding four feet in height need to comply with the maximum height and setbacks limitations for accessory structures within the installed zone. If a building permit is not required per the above three bullet items, height and setbacks can either be reviewed by consulting the Zoning Code at www.dsd.pima.gov, or can be confirmed by applying for a voluntary building permit through Development Services and paying applicable fees.

Note that permanently installed electrical/pumping equipment incidental to tanks, regardless of size, shall require a building permit.

5.0 DEFINITIONS:

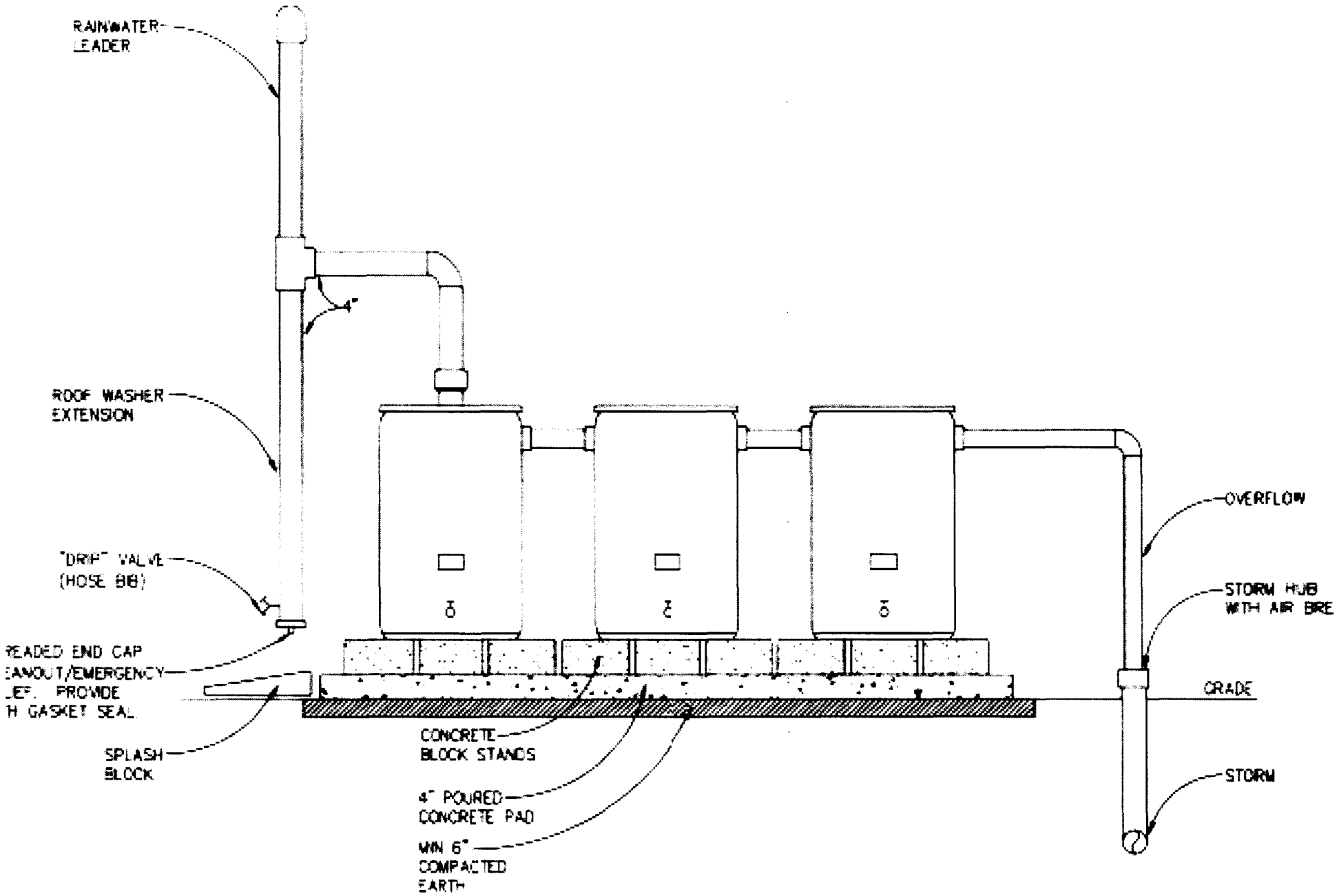
Not applicable.

6.0 RESPONSIBILITIES:

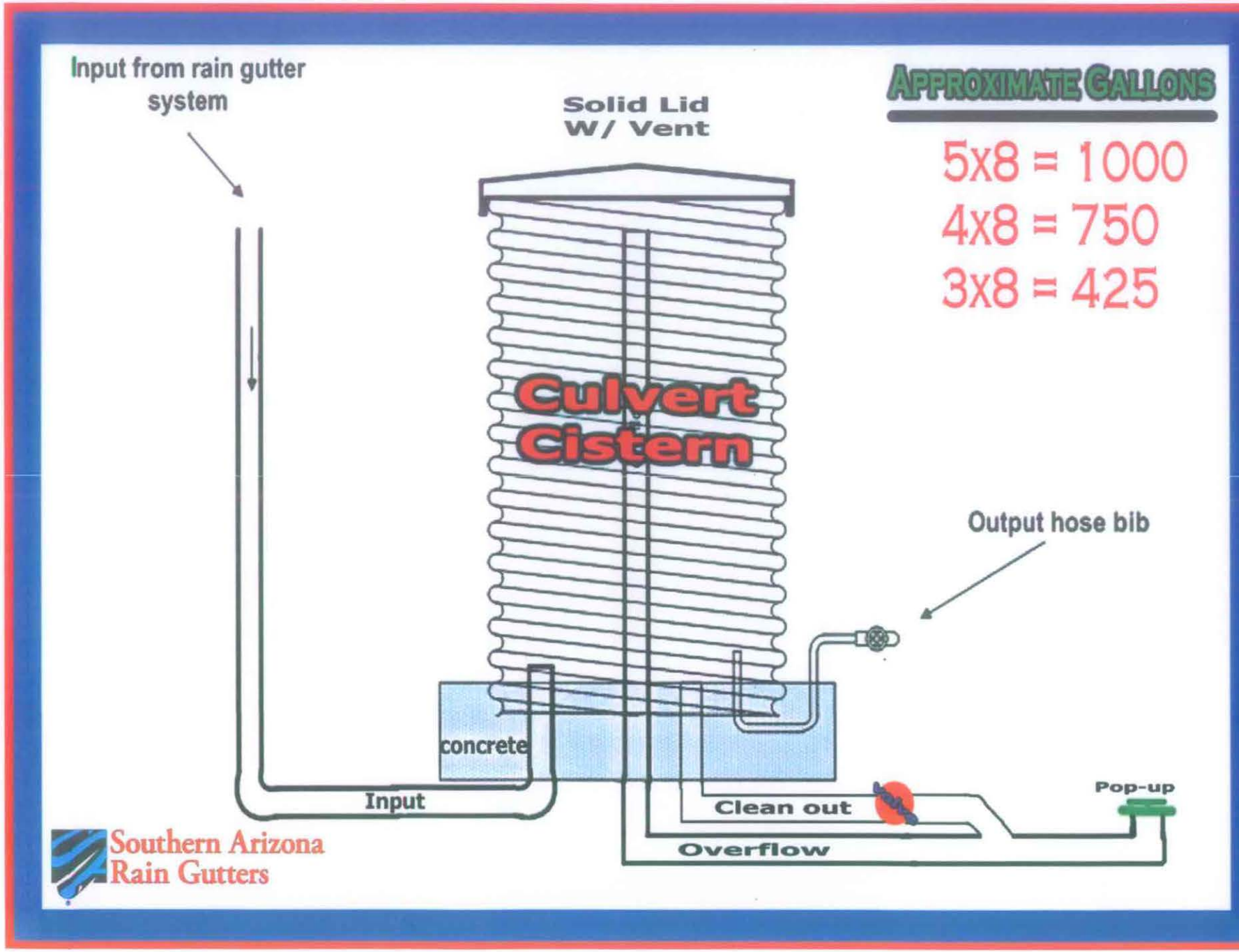
Not applicable.

7.0 PROCEDURES:

Not applicable.

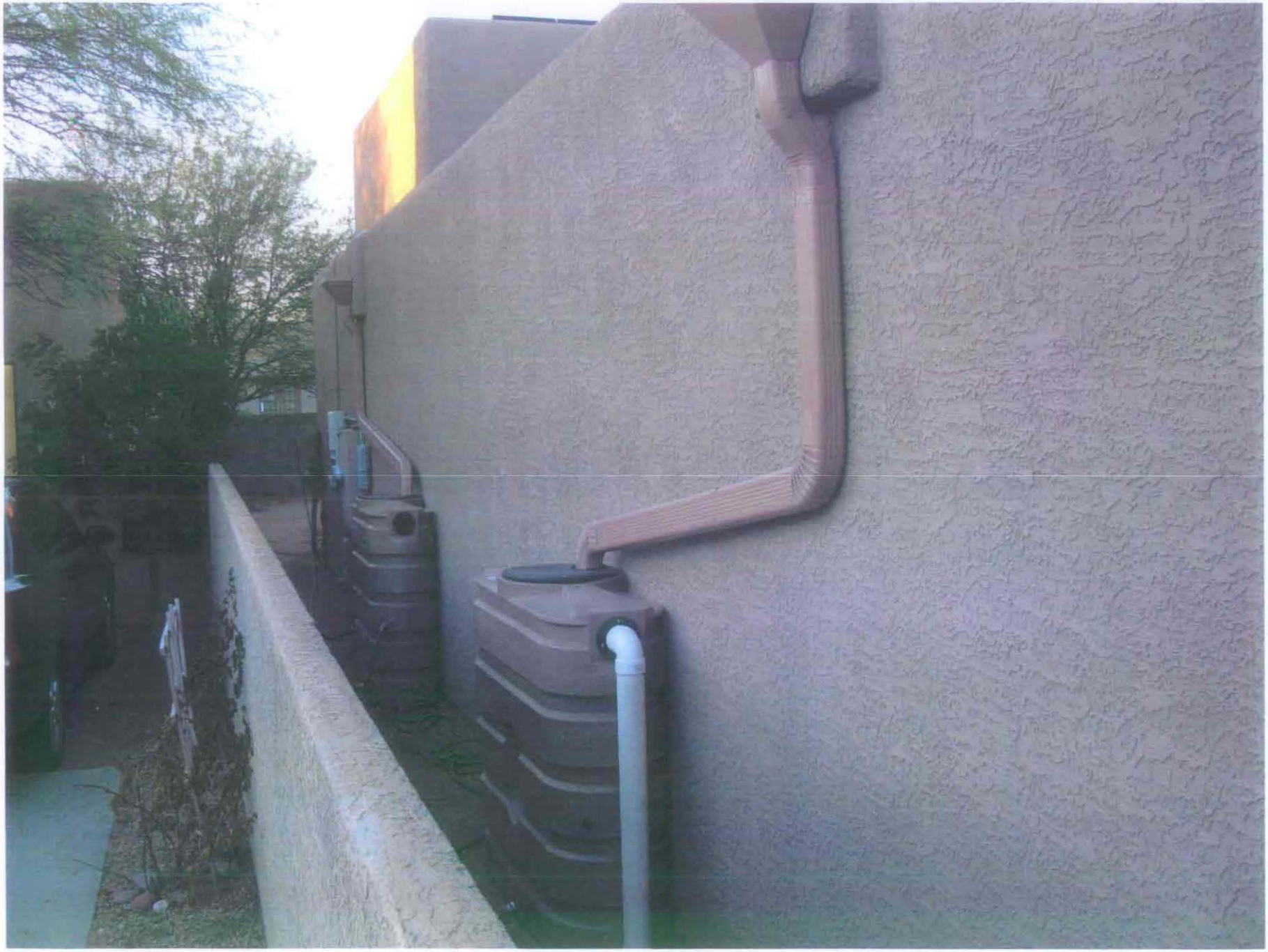


RAINWATER HARVESTING SCHEMATIC


Input from rain gutter system
Solid Lid W/ Vent
APPROXIMATE GALLONS
5x8 = 1000
4x8 = 750
3x8 = 425
Culvert Cistern
Output hose bib
concrete
Input
Clean out
Pop-up
Overflow
Southern Arizona Rain Gutters

Painted Galvanized Steel Cistern

Plastic Cisterns on Side of Residence

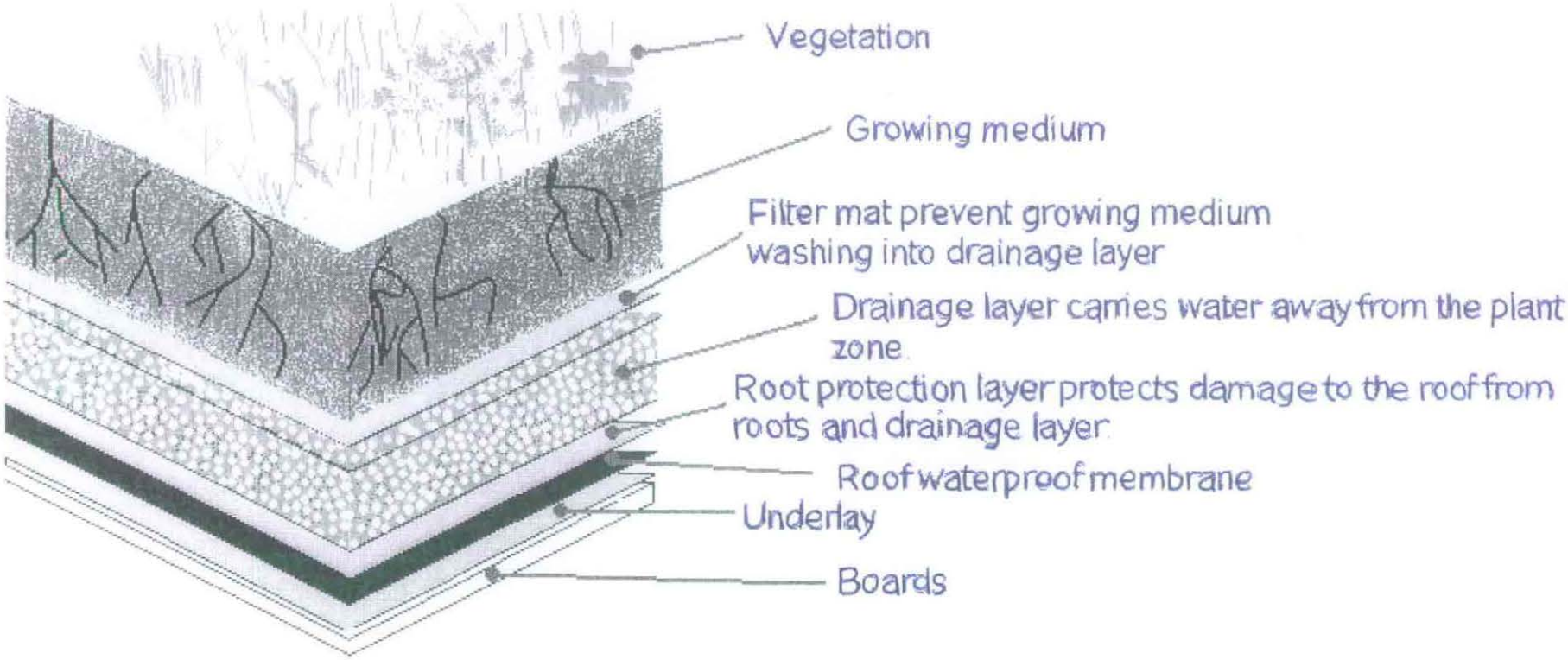


Cistern with Pump

Three Cistern System (requires proposed screening if visible from street)

Underground Cistern (no zoning regulation proposed)

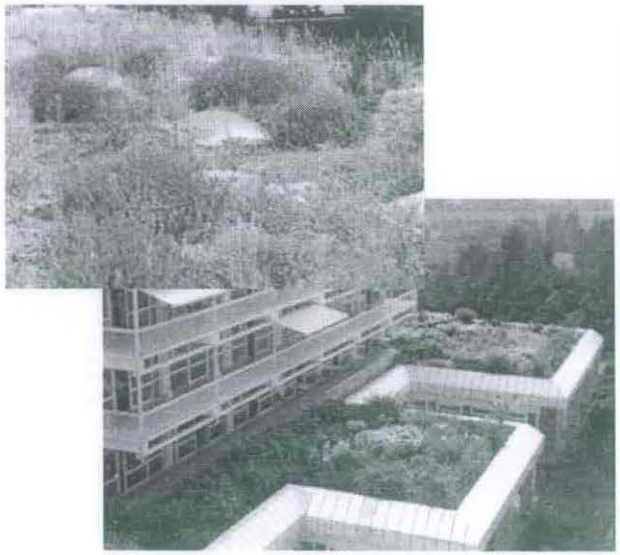
Basic Components of Green Roof

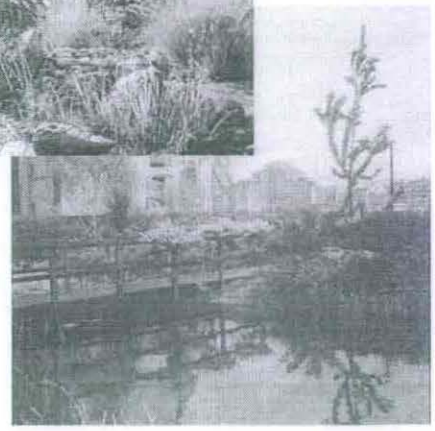


Types of Green Roof

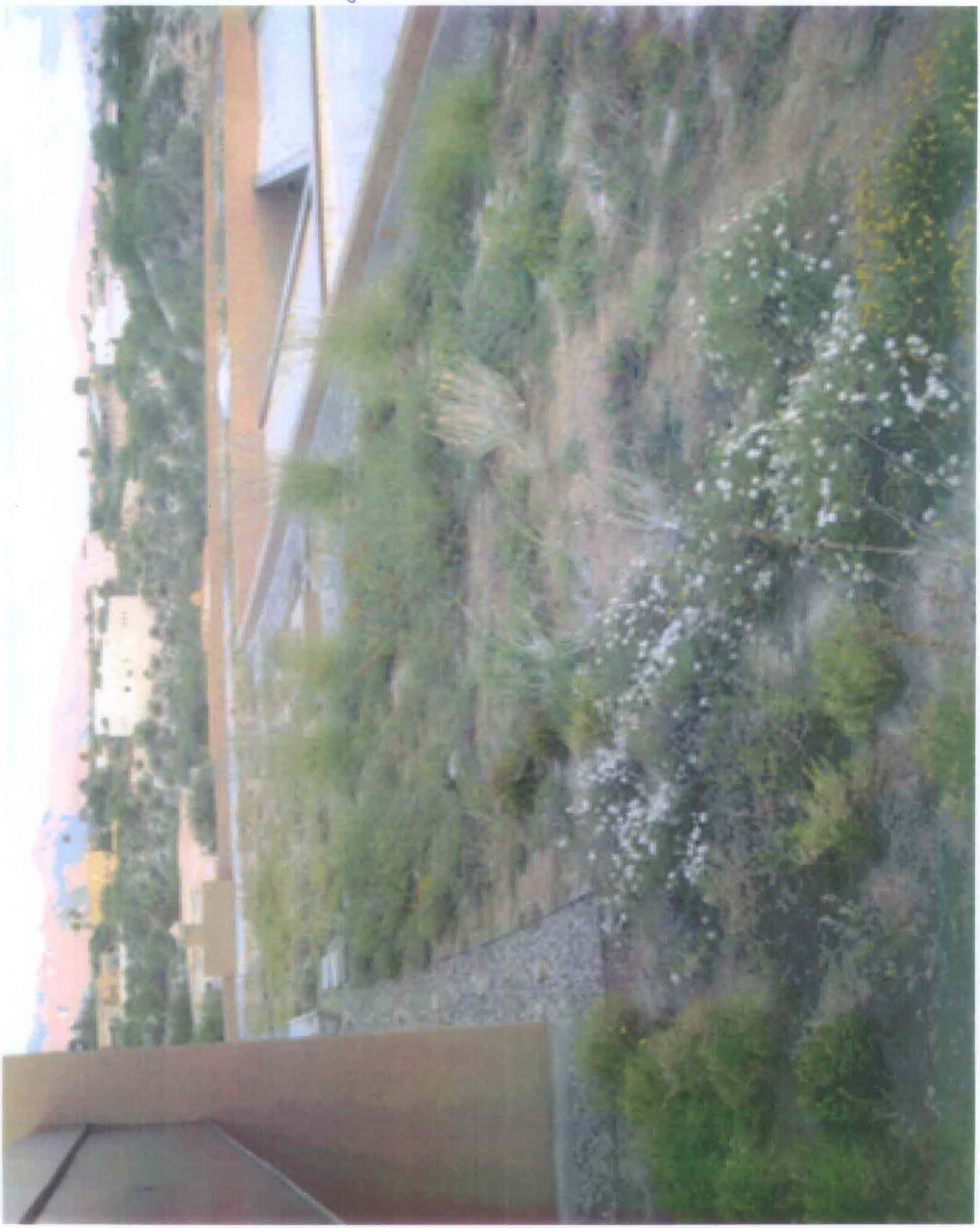
International Green Roof Association (igra-world.com)

	Extensive Green Roof	Semi-Intensive Green Roof	Intensive Green Roof
Maintenance	Low	Periodically	High
Irrigation	No	Periodically	Regularly
Plant communities	Moss-Sedum-Herbs and Grasses	Grass-Herbs and Shrubs	Lawn or Perennials, Shrubs and Trees
System build-up height	60 - 200 mm = .66 feet	120 - 250 mm = .82 feet	150 - 400 mm on underground = 1.31 feet garages > 1000 mm = 3.28 feet
Weight	60 - 150 kg/m^2 13 -30 lb/sqft	120 - 200 kg/m^2 25 - 40 lb/sqft	180 - 500 kg/m^2 35 - 100 lb/sqft
Costs	Low	Middle	High
Use	"Ecological protection layer"	"Designed Green Roof"	"Park like garden"





Riverfront Residence Vegetated Roof Tucson, AZ



Riverfront Residence Vegetated Roof Tucson, AZ

Tempe, AZ Transit Center Vegetated Roof

ORDINANCE 2013-____

AN ORDINANCE OF THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA; RELATING TO ZONING; AMENDING THE PIMA COUNTY ZONING CODE TITLE 18 BY AMENDING CHAPTER 18.01 (GENERAL PROVISIONS), SECTION 18.01.030 (APPLICATION OF ZONING CODE) TO ALLOW EXCEPTIONS FOR GREEN BUILDING STRUCTURAL ALTERATIONS FOR NONCONFORMING BUILDINGS AND BUILDINGS HOUSING NONCONFORMING USES; AMENDING CHAPTER 18.03 (GENERAL DEFINITIONS), SECTION 18.03.020 (DEFINITIONS) TO ADD DEFINITIONS FOR "CISTERN", "GREEN BUILDING", "RAIN BARREL", "RAINWATER HARVESTING SYSTEM", AND "VEGETATED ROOF" AND TO ADD UNDERGROUND CISTERNS AND CERTAIN CLOTHES LINES TO EXCLUSIONS TO THE DEFINITION OF "STRUCTURE" TO EXCLUDE THEM FROM ZONING REGULATION; AMENDING CHAPTER 18.07 (GENERAL REGULATIONS AND EXCEPTIONS), SECTION 18.07.030 (LAND USE REGULATIONS) TO ADD RAINWATER HARVESTING SYSTEM AS A PERMITTED USE IN ALL ZONES SUBJECT TO REQUIREMENTS AND EXCEPTIONS, AND SECTION 18.07.050 (DEVELOPMENT STANDARDS EXCEPTIONS) TO MODIFY AND ADD TO DEVELOPMENT STANDARDS EXCEPTIONS FOR PROJECTIONS INTO YARDS AND FOR HEIGHT LIMITS; AND AMENDING CHAPTER 18.73 (LANDSCAPING, BUFFERING AND SCREENING STANDARDS), SECTION 18.73.050 (AMENITY LANDSCAPING REQUIREMENTS) TO ADD VEGETATED ROOFS AS AN AMENITY LANDSCAPE REQUIREMENT OPTION.

WHEREAS, the Planning and Zoning Commission, at its March 27, 2013 meeting, initiated amendments to the Pima County Zoning Code; and

WHEREAS, Pima County Comprehensive Plan Regional Plan Policies under the Water Resources Element advocate water conservation through implementation of rainwater/storm water harvesting and reuse strategies, including the potential for a Zoning Code text amendment for enacting water conservation measures;

WHEREAS, Pima County Board of Supervisors' Resolution 2010-16 supports implementation of the City/County Water and Wastewater Study Phase 2 Report; and

WHEREAS the City/County Water and Wastewater Study Phase 2 Report contains a goal to maximize and make efficient use of effluent and other locally renewable water supplies with a recommendation for continued encouragement of rainwater harvesting on residential, commercial, and government properties to defray the high costs associated with stormwater management and to develop a new source of local, renewable water supply; and

WHEREAS the City/County Water and Wastewater Study Phase 2 Report contains a goal to address regulatory barriers to maximizing local water supplies; and

WHEREAS the City/County Water and Wastewater Study Phase 2 Report contains a goal to be prepared for climate change and drought via a multi-pronged preparedness strategy such as diversification of water supplies, improved demand management, and increased reliance on water harvesting as described in the 2011-2015 Action Plan for Water Sustainability created to implement the Phase 2 goals; and

WHEREAS the City/County Water and Wastewater Study Phase 2 Report contains a goal to increase use of rainwater and stormwater to reduce demands on potable supplies with a recommendation to review existing policies and regulations and evaluate how development standards may need to be modified to accommodate this strategy; and

WHEREAS, on April 12, 2012, Pima County Public Works held a Sustainable Land Use Code Audit Workshop funded by a grant from the Environmental Protection Agency's Office of Sustainable Communities under their Building Blocks for Sustainable Communities Program and administered by Smart Growth America; and

WHEREAS, on June 2, 2012, a memorandum from Smart Growth America summarized the Sustainable Land Use Code Audit Workshop and provided "next steps" recommendations as an outcome of the workshop; and

WHEREAS, this ordinance addresses some of the "next steps" recommendations pertaining to reduction of fossil-fuel based energy use and increased use of renewable energy resources that were an outcome of the Sustainable Land Use Code Audit Workshop; and

WHEREAS, this ordinance updates the zoning code to encourage green building construction and to remove barriers to green buildings and to use options that increase resource efficiency; and

WHEREAS, this ordinance does not create new restrictions on the use of property, and this ordinance is not intended to, nor should it be construed to reduce any existing rights to use, divide, sell, or possess private real property; therefore,

BE IT ORDAINED BY THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA:

SECTION 1: That Chapter 18.01 of the Pima County Zoning Code, Section 18.01.030 (Application of Zoning Code), is amended to update an Arizona Revised Statutes section citation and add an exception to provisions for nonconforming uses and buildings as follows:

Chapter 18.01
GENERAL PROVISIONS

....

18.01.030 Application of zoning code.

....

D. Provisions for Nonconforming Uses and Buildings.
   1. Nonconforming Uses Exempted.
      a. As specified in A.R.S. Section 11-812, the provisions of this code shall not affect existing uses of property or the right to its continued use or the reasonable repair or alteration thereof for the purpose for which used on February 16, 1953, or for any other use of the same or a more restrictive classification.

....

   5. Alteration of Nonconforming Buildings. No existing building designed, arranged or intended for or devoted to a use not permitted under the regulations of this code for the zone in which located shall be enlarged, extended, reconstructed or structurally altered unless such building and such enlargement, extension, reconstruction and structural alterations, and the further use thereof, conform in every respect with the regulations specified by this code for such zone in which said building is located, except a nonconforming business use as provided in Section 18.01.030(D)(1) and except as provided in Section 18.01.030(D)(7), but nothing in this subsection shall authorize the violation of any setback, health or sanitary law, ordinance or regulation not a part of this code.

....

   7. Exception for Green Building Upgrades and Renovations that Reduce Energy or Water Consumption. Notwithstanding Sections 18.01.030(D)(3)(a) or 18.01.030(D)(5), structural alterations, excluding enlargement and extension except as provided below, necessary for green building upgrades and renovations that reduce energy or water consumption are permitted without the requirement for the lawful nonconforming aspects of the building or use to be brought into conformance with the regulations specified in this code and shall not require submittal of a

development plan for review and approval in accordance with Section 18.71.010(B). For the purposes of this section, permitted enlargement and extension includes the installation of rainwater harvesting systems, ground or roof-mounted solar energy systems, roof eaves or overhangs, attached shade structures or detached shade structures extending three feet or less from the main building, roofed porches, and green roofs. Green building upgrades and renovations must reduce energy or water consumption. Examples include, but are not limited to, lighting, air barrier, duct insulation, duct sealing, attic insulation, wall insulation, plumbing fixtures, windows, HVAC, domestic solar hot water system, solar photovoltaic system, water harvesting cistern, roof eaves or overhangs, attached shade structures or detached shade structures extending three feet or less from the main building, roofed porches, vegetated roofs, and Energy Star qualified roof product, or as determined by the Chief Zoning Inspector or designee.

....

SECTION 2: That Chapter 18.03 of the Pima County Zoning Code, Section 18.03.020 (Definitions), is amended to add a definition for cistern, green building, rain barrel, rainwater harvesting system, and vegetated roof and to renumber subsequent subsections accordingly and to add exclusions from the definition of a structure as follows:

Chapter 18.03
GENERAL DEFINITIONS

....

18.03.020 Definitions.

....

C. Definitions "C".

....

6. Church: ....

7. Cistern: The storage component of a rainwater harvesting system. Cisterns are also known as water tanks or rain barrels.

8. Civil engineer: ....

....

G. Definitions "G".

....

5. Grazing: ....

6. Green building: A structure or elements of a structure that incorporate the principles of sustainable design – design in which the impact of a building on the natural environment or human health will be less than a building that solely meets the minimum requirements of the building code. Green buildings incorporate:

    a. Principles of energy and resource efficiency;

    b. Practical applications of waste reduction and pollution prevention;

    c. Good indoor air quality and natural light to promote occupant health and productivity; or

    d. Transportation efficiency in siting and construction, during use and reuse.

7. Group home: ....

....

R. Definitions "R."

1. Railroad: ....

2. Rain barrel: A barrel used as a cistern to store rainwater.

3. Rainwater harvesting system: A system used to capture, convey, store, and release rainwater for future use. A rainwater harvesting system consists of the following primary subsystems: catchment area, first flush diverters (an optional system that diverts the initial pulse of rainfall to remove large debris), roof washer (an optional system that filters small debris), conveyance system (guttering, downspouts, piping, screen filtration, and transfer pump for use of remote cisterns), an above- or below-ground storage tank(s) (typically a cistern or a simple barrel), cistern overflow device for down-gradient discharge, and distribution system (which may include a pump or pressure system if not gravity fed).

4. Renewable energy system—Ancillary scale: ....

....

S. Definitions "S."

....

23. Structure:

....

b. For the purposes of this ordinance, "structure" does not include:

....

5) Underground cisterns.

6) Clothes lines seventy-two inches or less in height.

....

V. Definitions "V."

1. Vehicular entry architectural feature: ...

....

2. Vegetated roof: A roof partially or fully covered by vegetation, used to manage water runoff and provide additional insulation in the winter and cooling in the summer. The vegetation is typically grown in a growing medium above a waterproof membrane that is part of a multi-component engineered system, but can also be grown in containers. Also known as a green roof, eco-roof, or living roof, it can range from a tended roof garden to a low-maintenance ecology.

....

SECTION 3: That Chapter 18.07 of the Pima County Zoning Code, Section 18.07.030 (Land Use Regulations), is amended to add rainwater harvesting system as a permitted use in all zones subject to requirements and exceptions, and Section 18.07.050 (Development Standards Exceptions), is amended to modify and add to development standards exceptions for projections into yards and for height limits, as follows:

Chapter 18.07
GENERAL REGULATIONS AND EXCEPTIONS

....

18.07.030 Land use regulations.

....

R. Rainwater harvesting system.

1. Rainwater harvesting systems are permitted in all zones, subject to the requirements and exceptions of this subsection:
   a. Exposed openings to cisterns shall be screened with a corrosion resistant metallic fine mesh to prevent mosquitoes from entering.
   b. Large openings in cisterns shall be securely fastened to prevent accidental drowning.
   c. Overflow or discharge from rainwater harvesting systems must not have an adverse impact on adjacent property or rights-of-way.
   d. Cistern setbacks:
      1) Front: In accordance with the minimum front yard requirements for a main structure or building of the underlying zone.
      2) Side: In accordance with the minimum side yard requirements for an accessory structure or building of the underlying zone, except that zero lot line siting is permissible for cisterns eight feet or less in height, excluding piping, on lots of 8,000 square feet or less.
      3) Rear: In accordance with the minimum rear yard requirements for an accessory structure or building of the underlying zone.
   e. Exceptions for cisterns:
      1) Cisterns forty-eight inches or less in height and width excluding piping are exempt from minimum yard distance setback requirements of the underlying zone.
      2) Cisterns are exempt from maximum lot coverage requirements of the underlying zone.
      3) For single detached or one-family dwellings on lots of less than 72,000 square feet, if more than two cisterns are visible within a front or side yard from a single point on an abutting street, the cisterns must be screened with a minimum five-foot-high wall, fence, or hedge.

....

18.07.050 Development standards exceptions.

....

C. Projections Into Yards.

1. Stairways, unroofed and unenclosed above or below floor or steps, must not project more than three feet into any minimum side or rear yard. Roof eaves or overhangs, shade structures, and roofed porches must not project more than three feet into any minimum front, side, or rear yard for main structures, main buildings, and guest houses provided drainage from roofs and shade structures does not fall onto

adjacent property. The projection is measured from the face of the supporting structure or wall.

....

H. Height Limit Exceptions. The height limits of this code shall not apply to:
   1. Barns, chimneys, conveyors, cupolas, derricks, flagpoles, parapet walls extending not more than four feet above the height limit of the building, silos, smokestacks, power transmission towers, windmills, power transmission poles, and vegetated roof systems beginning at the height above the waterproof membrane including safety railings, enclosed access stairway or elevator with a minimum twenty-foot setback from roof edges, vegetative containers, and vegetation;

....

SECTION 5: That Chapter 18.73 of the Pima County Zoning Code, Section 18.73.050 (Amenity Landscaping Requirements), is amended to add vegetated roofs as an option for amenity landscaping requirements as follows:

Chapter 18.73
LANDSCAPING, BUFFERING AND SCREENING STANDARDS

....

18.73.050 Amenity landscaping requirements.

....

B. Parking Area Amenity Landscape Requirements.

....

   2. Amenity options. The ten percent requirement may be satisfied with the use of combinations of the following elements:

....

      f. Courts, ramadas and covered walkways,
      g. Vegetated roofs, limited to plants selected from the approved plant lists within the Landscape Design Manual available at the Development Services Department, pursuant to Section 18.73.030(A).

....

SECTION 6: That this ordinance is effective 31 days from and after its adoption.

PASSED AND ADOPTED by the Board of Supervisors of Pima County, Arizona, this ____ day of _____, 2013.

PIMA COUNTY BOARD OF SUPERVISORS

_____
Chairman of the Board of Supervisors

ATTEST:

_____
Clerk, Board of Supervisors

APPROVED AS TO FORM:

_____
Civil Deputy County Attorney
MICHAEL LEBLANC

_____
Executive Secretary, Pima County
Planning and Zoning Commission

ORDINANCE 2013-____

AN ORDINANCE OF THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA; RELATING TO ZONING; AMENDING THE PIMA COUNTY ZONING CODE TITLE 18 BY AMENDING CHAPTER 18.01 (GENERAL PROVISIONS), SECTION 18.01.030 (APPLICATION OF ZONING CODE) TO ALLOW EXCEPTIONS FOR GREEN BUILDING STRUCTURAL ALTERATIONS FOR NONCONFORMING BUILDINGS AND BUILDINGS HOUSING NONCONFORMING USES; AMENDING CHAPTER 18.03 (GENERAL DEFINITIONS), SECTION 18.03.020 (DEFINITIONS) TO ADD DEFINITIONS FOR "CISTERN", "GREEN BUILDING", "RAIN BARREL", "RAINWATER HARVESTING SYSTEM", AND "VEGETATED ROOF" AND TO ADD UNDERGROUND CISTERNS AND CERTAIN CLOTHES LINES TO EXCLUSIONS TO THE DEFINITION OF "STRUCTURE" TO EXCLUDE THEM FROM ZONING REGULATION; AMENDING CHAPTER 18.07 (GENERAL REGULATIONS AND EXCEPTIONS), SECTION 18.07.030 (LAND USE REGULATIONS) TO ADD RAINWATER HARVESTING SYSTEM AS A PERMITTED USE IN ALL ZONES SUBJECT TO REQUIREMENTS AND EXCEPTIONS, AND SECTION 18.07.050 (DEVELOPMENT STANDARDS EXCEPTIONS) TO MODIFY AND ADD TO DEVELOPMENT STANDARDS EXCEPTIONS FOR PROJECTIONS INTO YARDS AND FOR HEIGHT LIMITS; AND AMENDING CHAPTER 18.73 (LANDSCAPING, BUFFERING AND SCREENING STANDARDS), SECTION 18.73.050 (AMENITY LANDSCAPING REQUIREMENTS) TO ADD VEGETATED ROOFS AS AN AMENITY LANDSCAPE REQUIREMENT OPTION.

WHEREAS, the Planning and Zoning Commission, at its March 27, 2013 meeting, initiated amendments to the Pima County Zoning Code; and

WHEREAS, Pima County Comprehensive Plan Regional Plan Policies under the Water Resources Element advocate water conservation through implementation of rainwater/storm water harvesting and reuse strategies, including the potential for a Zoning Code text amendment for enacting water conservation measures;

WHEREAS, Pima County Board of Supervisors' Resolution 2010-16 supports implementation of the City/County Water and Wastewater Study Phase 2 Report; and

WHEREAS the City/County Water and Wastewater Study Phase 2 Report contains a goal to maximize and make efficient use of effluent and other locally renewable water supplies with a recommendation for continued encouragement of rainwater harvesting on residential, commercial, and government properties to defray the high costs associated with stormwater management and to develop a new source of local, renewable water supply; and

WHEREAS the City/County Water and Wastewater Study Phase 2 Report contains a goal to address regulatory barriers to maximizing local water supplies; and

WHEREAS the City/County Water and Wastewater Study Phase 2 Report contains a goal to be prepared for climate change and drought via a multi-pronged preparedness strategy such as diversification of water supplies, improved demand management, and increased reliance on water harvesting as described in the 2011-2015 Action Plan for Water Sustainability created to implement the Phase 2 goals; and

WHEREAS the City/County Water and Wastewater Study Phase 2 Report contains a goal to increase use of rainwater and stormwater to reduce demands on potable supplies with a recommendation to review existing policies and regulations and evaluate how development standards may need to be modified to accommodate this strategy; and

WHEREAS, on April 12, 2012, Pima County Public Works held a Sustainable Land Use Code Audit Workshop funded by a grant from the Environmental Protection Agency's Office of Sustainable Communities under their Building Blocks for Sustainable Communities Program and administered by Smart Growth America; and

WHEREAS, on June 2, 2012, a memorandum from Smart Growth America summarized the Sustainable Land Use Code Audit Workshop and provided "next steps" recommendations as an outcome of the workshop; and

WHEREAS, this ordinance addresses some of the "next steps" recommendations pertaining to reduction of fossil-fuel based energy use and increased use of renewable energy resources that were an outcome of the Sustainable Land Use Code Audit Workshop; and

WHEREAS, this ordinance updates the zoning code to encourage green building construction and to remove barriers to green buildings and to use options that increase resource efficiency; and

WHEREAS, this ordinance does not create new restrictions on the use of property, and this ordinance is not intended to, nor should it be construed to reduce any existing rights to use, divide, sell, or possess private real property; therefore,

BE IT ORDAINED BY THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA:

SECTION 1: That Chapter 18.01 of the Pima County Zoning Code, Section 18.01.030 (Application of Zoning Code), is amended to update an Arizona Revised Statutes section citation and add an exception to provisions for nonconforming uses and buildings as follows:

Chapter 18.01
GENERAL PROVISIONS

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18.01.030 Application of zoning code.

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D. Provisions for Nonconforming Uses and Buildings.
   1. Nonconforming Uses Exempted.
      a. As specified in A.R.S. Section 11-83~~0~~12, the provisions of this code shall not affect existing uses of property or the right to its continued use or the reasonable repair or alteration thereof for the purpose for which used on February 16, 1953, or for any other use of the same or a more restrictive classification.

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   5. Alteration of Nonconforming Buildings. No existing building designed, arranged or intended for or devoted to a use not permitted under the regulations of this code for the zone in which located shall be enlarged, extended, reconstructed or structurally altered unless such building and such enlargement, extension, reconstruction and structural alterations, and the further use thereof, conform in every respect with the regulations specified by this code for such zone in which said building is located, except a nonconforming business use as provided in Section 18.01.030(D)(1) and except as provided in Section 18.01.030(D)(7), but nothing in this subsection shall authorize the violation of any setback, health or sanitary law, ordinance or regulation not a part of this code.

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   7. Exception for Green Building Upgrades and Renovations that Reduce Energy or Water Consumption. Notwithstanding Sections 18.01.030(D)(3)(a) or 18.01.030(D)(5), structural alterations, excluding enlargement and extension except as provided below, necessary for green building upgrades and renovations that reduce energy or water consumption are permitted without the requirement for the lawful nonconforming aspects of the building or use to be brought into conformance with the regulations specified in this code and shall not require submittal of a

development plan for review and approval in accordance with Section 18.71.010(B). For the purposes of this section, permitted enlargement and extension includes the installation of rainwater harvesting systems, ground or roof-mounted solar energy systems, roof eaves or overhangs, attached shade structures or detached shade structures extending three feet or less from the main building, roofed porches, and green roofs. Green building upgrades and renovations must reduce energy or water consumption. Examples include, but are not limited to, lighting, air barrier, duct insulation, duct sealing, attic insulation, wall insulation, plumbing fixtures, windows, HVAC, domestic solar hot water system, solar photovoltaic system, water harvesting cistern, roof eaves or overhangs, attached shade structures or detached shade structures extending three feet or less from the main building, roofed porches, vegetated roofs, and Energy Star qualified roof product, or as determined by the Chief Zoning Inspector or designee.

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SECTION 2: That Chapter 18.03 of the Pima County Zoning Code, Section 18.03.020 (Definitions), is amended to add a definition for cistern, green building, rain barrel, rainwater harvesting system, and vegetated roof and to renumber subsequent subsections accordingly and to add exclusions from the definition of a structure as follows:

Chapter 18.03
GENERAL DEFINITIONS

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18.03.020 Definitions.

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C. Definitions "C".

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6. Church: ....

7. Cistern: The storage component of a rainwater harvesting system. Cisterns are also known as water tanks or rain barrels.

~~7~~ 8. Civil engineer: ....

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G. Definitions "G".

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5. Grazing: ....

6. Green building: A structure or elements of a structure that incorporate the principles of sustainable design – design in which the impact of a building on the natural environment or human health will be less than a building that solely meets the minimum requirements of the building code. Green buildings incorporate:

a. Principles of energy and resource efficiency;

b. Practical applications of waste reduction and pollution prevention;

c. Good indoor air quality and natural light to promote occupant health and productivity; or

d. Transportation efficiency in siting and construction, during use and reuse.

~~6~~ 7. Group home: ....

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R. Definitions "R."

1. Railroad: ....

2. Rain barrel: A barrel used as a cistern to store rainwater.

3. Rainwater harvesting system: A system used to capture, convey, store, and release rainwater for future use. A rainwater harvesting system consists of the following primary subsystems: catchment area, first flush diverters (an optional system that diverts the initial pulse of rainfall to remove large debris), roof washer (an optional system that filters small debris), conveyance system (guttering, downspouts, piping, screen filtration, and transfer pump for use of remote cisterns), an above- or below-ground storage tank(s) (typically a cistern or a simple barrel), cistern overflow device for down-gradient discharge, and distribution system (which may include a pump or pressure system if not gravity fed).

~~2~~ 4. Renewable energy system—Ancillary scale: ....

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S. Definitions "S."

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23. Structure:

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b. For the purposes of this ordinance, "structure" does not include:

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5) Underground cisterns.

6) Clothes lines seventy-two inches or less in height.

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V. Definitions "V."

1. Vehicular entry architectural feature: ...

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2. Vegetated roof: A roof partially or fully covered by vegetation, used to manage water runoff and provide additional insulation in the winter and cooling in the summer. The vegetation is typically grown in a growing medium above a waterproof membrane that is part of a multi-component engineered system, but can also be grown in containers. Also known as a green roof, eco-roof, or living roof, it can range from a tended roof garden to a low-maintenance ecology.

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SECTION 3: That Chapter 18.07 of the Pima County Zoning Code, Section 18.07.030 (Land Use Regulations), is amended to add rainwater harvesting system as a permitted use in all zones subject to requirements and exceptions, and Section 18.07.050 (Development Standards Exceptions), is amended to modify and add to development standards exceptions for projections into yards and for height limits, as follows:

Chapter 18.07
GENERAL REGULATIONS AND EXCEPTIONS

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18.07.030 Land use regulations.

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R. Rainwater harvesting system.

1. Rainwater harvesting systems are permitted in all zones, subject to the requirements and exceptions of this subsection:
   a. Exposed openings to cisterns shall be screened with a corrosion resistant metallic fine mesh to prevent mosquitoes from entering.
   b. Large openings in cisterns shall be securely fastened to prevent accidental drowning.
   c. Overflow or discharge from rainwater harvesting systems must not have an adverse impact on adjacent property or rights-of-way.
   d. Cistern setbacks:
      1) Front: In accordance with the minimum front yard requirements for a main structure or building of the underlying zone.
      2) Side: In accordance with the minimum side yard requirements for an accessory structure or building of the underlying zone, except that zero lot line siting is permissible for cisterns eight feet or less in height, excluding piping, on lots of 8,000 square feet or less.
      3) Rear: In accordance with the minimum rear yard requirements for an accessory structure or building of the underlying zone.
   e. Exceptions for cisterns:
      1) Cisterns forty-eight inches or less in height and width excluding piping are exempt from minimum yard distance setback requirements of the underlying zone.
      2) Cisterns are exempt from maximum lot coverage requirements of the underlying zone.
      3) For single detached or one-family dwellings on lots of less than 72,000 square feet, if more than two cisterns are visible within a front or side yard from a single point on an abutting street, the cisterns must be screened with a minimum five-foot-high wall, fence, or hedge.

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18.07.050 Development standards exceptions.

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C. Projections Into Yards.

1. ~~Unenclosed porches and s~~Stairways, unroofed and unenclosed above or below floor or steps, ~~may project not more than~~ must not project more than three feet into any minimum side or rear yard. Roof eaves or overhangs, shade structures, and roofed porches must not project more than three feet into any minimum front, side, or rear yard for main structures, main buildings, and guest houses provided

drainage from roofs and shade structures does not fall onto adjacent property. The projection is measured from the face of the supporting structure or wall.

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H. Height Limit Exceptions. The height limits of this code shall not apply to:

1. Barns, chimneys, conveyors, cupolas, derricks, flagpoles, parapet walls extending not more than four feet above the height limit of the building, silos, smokestacks, power transmission towers, windmills, ~~and~~ power transmission poles, and vegetated roof systems beginning at the height above the waterproof membrane including safety railings, enclosed access stairway or elevator with a minimum twenty-foot setback from roof edges, vegetative containers, and vegetation;

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SECTION 5: That Chapter 18.73 of the Pima County Zoning Code, Section 18.73.050 (Amenity Landscaping Requirements), is amended to add vegetated roofs as an option for amenity landscaping requirements as follows:

Chapter 18.73
LANDSCAPING, BUFFERING AND SCREENING STANDARDS

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18.73.050 Amenity landscaping requirements.

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B. Parking Area Amenity Landscape Requirements.

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2. Amenity options. The ten percent requirement may be satisfied with the use of combinations of the following elements:

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f. Courts, ramadas and covered walkways~~.~~,

g. Vegetated roofs, limited to plants selected from the approved plant lists within the Landscape Design Manual available at the Development Services Department, pursuant to Section 18.73.030(A).

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SECTION 6: That this ordinance is effective 31 days from and after its adoption.

PASSED AND ADOPTED by the Board of Supervisors of Pima County, Arizona, this ____ day of _____, 2013.

PIMA COUNTY BOARD OF SUPERVISORS

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Chairman of the Board of Supervisors

ATTEST:

_____
Clerk, Board of Supervisors

APPROVED AS TO FORM:

_____
Civil Deputy County Attorney
MICHAEL LEBLANC

_____
Executive Secretary, Pima County
Planning and Zoning Commission