PIMA COUNTY

STORMWATER MANAGEMENT PROGRAM (SWMP)

AZPDES Permit No. AZS000002

Revised
October 30, 2013

Environmental Quality Division

Stormwater Management Program

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INTRODUCTION

A. Scope

Pima County manages stormwater in accordance with the Arizona Pollutant Discharge Elimination System (AZPDES) Permit AZS000002 that authorizes the discharge of stormwater from the municipal separate storm sewer system (MS4) to receiving waters. The MS4 consists of 2,087 miles of roads, 39 miles of stormdrains, and infrastructure carrying runoff into drainage ways or ephemeral stream channels (Figure1). This Stormwater Management Program (SWMP) describes the control measures Pima County uses to protect surface water quality.

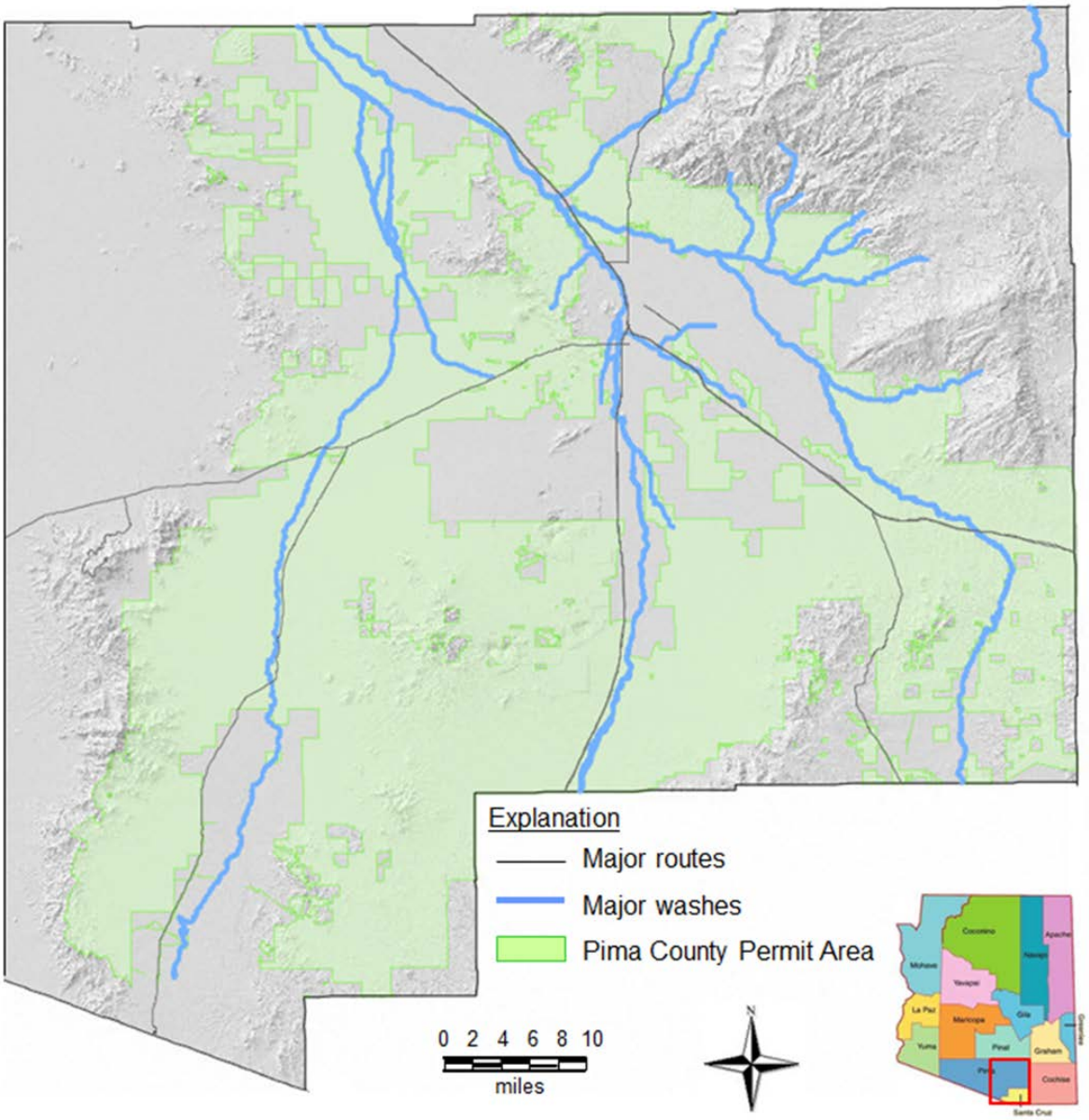


Figure 1. 2011 Pima County Stormwater Permit Area

The initial SWMP was prepared in conformance with the first MS4 permit issued by the United States Environmental Agency (USEPA) in 1997. This program was revised as required by the second MS4 permit issued by the Arizona Department of Environmental Quality (ADEQ) in 2011. The revised SWMP describes the implementation of public education and outreach, public involvement and participation, illicit discharge detection and elimination (IDDE), pollution prevention and good housekeeping practices at Pima County facilities, and pollutant reduction measures in residential areas, commercial areas, industrial facilities and construction sites. The control measures are designed to restore and maintain the chemical, physical, and biological integrity of the receiving waters (33 U.S.C. §1251(a)). Restoring and maintaining the integrity of surface water is essential for protecting public health and the environment (Pima County, 2012a).

B. Regulatory Framework

Stormwater regulations originated with the federal Clean Water Act, which includes the delegation of the program to qualified states. In Arizona, the state issues MS4 permits. Local jurisdictions have also written ordinances and policies impacting stormwater management. A description of the different regulations applicable to the management of stormwater within Pima County's permit area is provided below.

Clean Water Act

The Water Quality Act of 1987 added Section 402(p) of the Clean Water Act (CWA) which required the Environmental Protection Agency (EPA) to develop a phased approach to regulate stormwater discharges under the National Pollutant Discharge Elimination System (NPDES) program. EPA then published the final regulations on the first phase of the NPDES stormwater program for point discharges from Public-owned Treatment Work (POTW) and non-point discharges from large and medium sized MS4s (EPA, 1990). These regulations, commonly known as the Phase I stormwater regulations, established permit application requirements for discharges from municipal separate storm sewer systems (MS4s) serving a population of 100,000 or more. Based on the 1990 census when Pima County's population was larger than 250,000, EPA identified Pima County operated a large MS4. As defined in 40 CFR 122.26(b)(8), the term *"municipal separate storm sewer"* means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned or operated by a municipality. MS4s are differentiated from combined sewer and stormwater systems and POTWs. The requirements of the Section 402(p) applicable to MS4 NPDES include:

- A requirement to effectively prohibit non-stormwater discharges into the MS4 and
- A mandate to implement controls to reduce the pollutants in stormwater discharges to the maximum extent practicable (MEP). Controls may include management practices, control techniques and systems, design and engineering methods and other provisions deemed appropriate by the administering authority for the control of such pollutants.

On December 5, 2002, EPA granted permitting authority to the ADEQ to implement the NPDES program in Arizona, except for discharges on Indian Lands. In Arizona, the NPDES program is administered as the AZPDES program.

The AZPDES permit issued to Phase I MS4s requires control measures for public education and outreach, public participation, illicit discharge detection and elimination, good housekeeping and spill prevention at municipal facilities, industrial and commercial facilities, and construction sites. In addition, monitoring and annual reporting are required.

AZPDES Program

In 2001, the AZPDES program was defined in statute (A.R.S. §§49-255.01, 49-263.01) and code (A.A.C. R18-9-A901 - D905). Arizona gained the authority to implement the national program at the state level in 2002. Individual and general permits were promulgated for discharges to receiving waters that are required to meet Arizona surface water quality standards (SWQS) (A.A.C. R18-11-101 *et seq*.). Water quality protection fees fund state activities (A.A.C. R18-14-101 *et seq*.).

ADEQ monitors the ambient surface water quality of watersheds by collecting samples from streams and rivers (ADEQ, 2011) and assesses the data to describe how surface waters meet state surface water quality standards (ADEQ, 2012). SWQS are established for designated uses of water, namely aquatic and wildlife, human health, and agricultural. The 2010 assessment modified the current USEPA approved 2006/3008 303(d) Impaired Water List with the Draft 2010 Impaired Waters List (Appendix A). A second category of surface waters, Outstanding Arizona Waters (OAWs) receive additional protections (A.A.C. R18-11-112). The AZPDES permits require specific actions if Impaired Waters or OAWs are downstream from a discharging facility.

Individual and General permits are issued by ADEQ in the AZPDES program. The general permits applicable to stormwater are the Construction General Permit (CGP) issued to owners or operators of construction projects and the Multi-sector General Permit (MSGP) issued to industrial or commercial facilities. An AZPDES De Minimus General Permit has also been issued allowing discharges of water unlikely to contain pollutants, such as line breaks from potable water systems.

Aquifer Protection Program

Pollutants in surface water also have the potential to contaminate groundwater. As such ADEQ identifies several Aquifer Protection Program (APP) general permits that must be followed in the Construction General permit (CGP) and Multi-section General Permit (MSGP). As the MS4 permit requires inspections of locations permitted under the CGP and MSGP, a reference to these regulations is necessary. The CGP requires a permittee follow Type 1 General permit for concrete washouts (A.A.C. R18-9-B301(L)). The MSGP requires a permittee follow the general permits for drywells (A.A.C. R18-9-C301, R18-9-C304), if a drywell is present on the property.

Local Regulations

Ordinances related to stormwater have been developed over the years by different departments to address specific public health and environmental issues. Environmental quality ordinances reduce the discharge of pollutants by prohibiting the discharge of sewage or industrial waste to flow into waters of the county or upon or under any lands within the county (P.C.C. 7.21.025), removal of rubbish, trash, weeds, filth and debris (P.C.C. 7.33), and protection from environmental nuisances such as vector breeding conditions, unsanitary conditions, exposure to anthropogenically-derived wastes, pollution of domestic waters, mismanagement of sewage or septic waters, mismanagement of manure or other objectionable wastes and unwholesome, poisonous or fouled water (P.C.C.

7.45.020). Floodplain management ordinances reduce erosion in hazardous areas through building setbacks (P.C.C. 16.28), watercourse and riparian habitat protection and mitigation requirements (P.C.C. 16.30), sediment and erosion control (P.C.C. 16.42), and runoff detention systems (P.C.C. 16.48). Zoning reduces erosion through the hillside development overlay Zone (P.C.C. 18.61), the buffer overlay zone (P.C.C 18.67), landscape buffering and screening standards (P.C.C 18.73), gateway overlay zone (P.C.C 18.78), and grading standards (P.C.C 18.81). In addition, the Pima County Board of Supervisors passed the Pima County Environmental Policy emphasizing the commitment to environmental protection and to the mitigation of any negative effects of Pima County's operations on the environment (Appendix B).

Pima County and City of Tucson jointly assessed the water and wastewater resources (City of Tucson and Pima County, 2009a). Stormwater and rainwater were identified as good supplemental water sources and concluded additional practices were needed to maximize the use of these waters. Specific practices identified were capturing rainwater and stormwater at the lot scale and neighborhood scale, limiting floodplain encroachment with imperious surfaces and buildings, maintaining water courses for recharge, and developing the economic and legal framework to implement the practices (City of Tucson and Pima County, 2009b). Additionally, stormwater was identified as a water source for environmental projects (City of Tucson and Pima County, 2009c).

The six-pronged plan of the Sonoran Desert Conservation Plan (SDCP) applies green infrastructure principles to sustainable growth and strategic conservation planning that includes the Multi-species Conservation Plan (MSCP), riparian protection, riparian land acquisition and management, riparian restoration, water conservation and management, and ecological monitoring. The county ordinances pertinent to these include native plant preservation (P.C.C. 18.72), buffer overlay zone (P.C.C. 18.67), cluster development option (P.C.C. 18.09.040), conservation subdivision requirements (P.C.C. 18.09.100), hillside development zone (P.C.C. 18.61), modification of development standards in riparian areas (P.C.C. 18.07.080), landscaping, buffering and screening standards (P.C.C. 18.73), and roadway frontage standards (P.C.C. 18.75). The regulated riparian habitat mitigation standards are implemented according to RFCD's technical policy (Tech-026). These land management practices maintain natural infiltration characteristics, which reduce the volume of runoff, peak flow and flood hazards, all of which support stormwater management goals of reducing the discharge of pollutants into receiving waters.

ADEQ and PDEQ have executed a Delegation Agreement whereby ADEQ delegates to PDEQ selected functions, powers and duties relating to water quality management, solid waste management, and air quality management. The negotiated Delegation Agreement expected to be signed in winter 2012 delegates investigation and enforcement responsibilities to eliminate the disposal of used oil on land (A.R.S §§ 49-801, 803, 811, 812; Title CFR § 279.1)

MS4 Permit

EPA issued the Phase I MS4 permit to Pima County on February 14, 1997 with an effective date of March 19, 1997. ADEQ issued the AZPDES MS4 permit on June 16, 2011 with an effective date of July 18, 2011. Changes in the new permit include measurable goals quantifying effective stormwater practices, an increase in the size of the permit area from 252 square miles (mi^2) to 1,960 mi^2, an increase in the number of parameters analyzed at the monitor points from 5 to 143, an increase in the number of parameters with pollutant load estimates from 4 to 22 and comparison of water quality

results to surface water quality standards. With the exception of the increase in size, all the other changes are similar to permit conditions in the other Phase I MS4s in the state of Arizona. The permit area has had a complex boundary with other jurisdictions and is anticipated to change with time as additional lands are incorporated. Incorporation moves land from the county into cities, towns, monuments, wildlife refuges, conservation areas, sanctuaries, reserves and parks.

Surface waters within the permit area that have been assessed by ADEQ meet surface water quality standards. The surface water quality standards range from aquatic and wildlife, human health and agricultural designated uses (Figure 2).

C. Description of Permitted Area

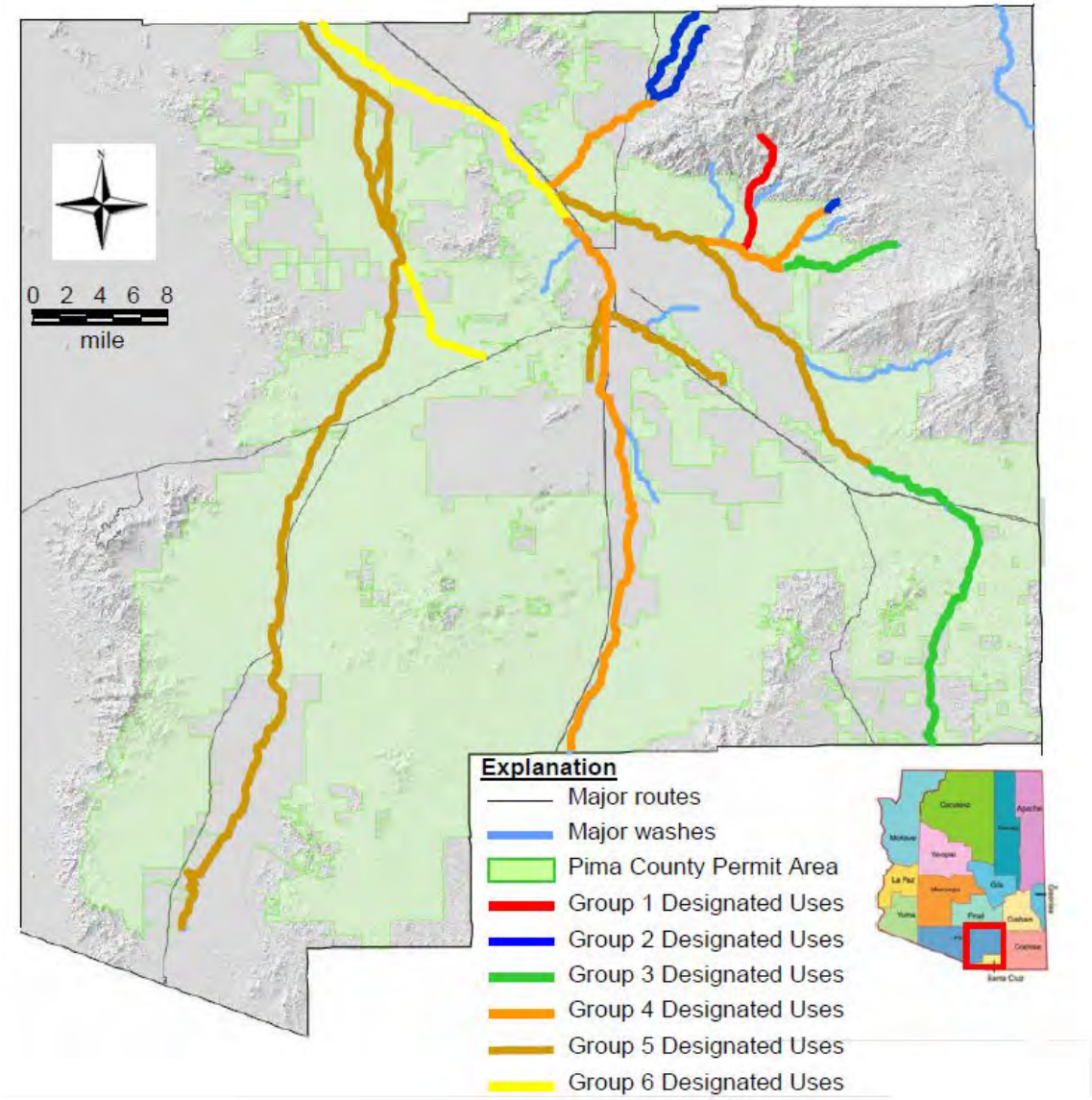
Pima County is located within the Basin and Range physiographic province characterized by north-south trending mountain ranges, alluvial fans, and alluvial valleys consisting of unconsolidated to semiconsolidated sediments. The relief between the mountains and the valleys is about 6,000 to 7,000 feet. Soils in the desert are dominantly aridisols and entisols and the mountain ranges have aridisols, inceptisols, mollisols and alfisols (Commission for Environmental Cooperation 2010).

The headwaters typically begin in the mountains and flow into perennial or intermittent streams. A few springs in the mountains supply water to intermittent streams. Stream channels in the alluvial valleys are ephemeral. Watersheds in eastern Pima County include the Upper Santa Cruz River, Rillito Creek, Lower Santa Cruz River and Brawley Wash watersheds (Figure 3). The aquifers are typically unconfined and are recharged along the mountain fronts and from stream beds. Recharge rates are lowest in the Brawley watershed (450 – 2400 acre-feet annually (AF/Y)) and highest in Santa Cruz watershed (210 – 9030 AF/Y) (Osterkamp, 1973). The functions of these ephemeral streams are to move water, sediment, nutrients, and debris through the steam network and provide connectivity within the watershed (Levick, et al., 2008), as well as to recharge stormwater.

The climate ranges from dry subtropical desert to mid-latitude steppe. Runoff occurs in response to rainfall events in the summer monsoon between July and October and rainfall events in the winter between December and February. The monsoonal rains are short bursts of heavy downpours accompanied by strong winds and blowing dust (Webb, 1992), whereas the winter rains are less intense and longer duration. Runoff is initially turbid due to suspended solids and clears with time. Stream channels run dry within a few hours after a rainfall event, unless the flow is supplied by snowmelt or an extreme rainfall event has occurred. The average number of rainfall events per year for the 105 years of record of University of Arizona data is 42 events (City of Tucson and Pima County 2009b). The average annual rainfall in Tucson is 11.6 inches while the average annual evapotranspiration is 103.5 inches (ADWR, 2010). Mountainous regions receive early 25 inches of rain annually. The summers are very hot and the winters are mild resulting in annual normal temperatures ranging from a low of 39.1°F in December to a high of 100.3°F in June (NOAA, 2012).

Pima County contains two ecoregions, namely the Sonoran Desert and the Madrean Archipelago (Commission for Environmental Cooperation, 2006). The Sonoran Desert vegetation is typically palo verdes, cactus shrubs, and giant saguaros while the Madrean Archipelago vegetation is semi-

desert grasslands and shrub steppe. A wide range of mammals, birds and reptiles live these ecosystems. Additionally, there is a dense corridor of vegetation flanking ephemeral streams that is



Group	Aquatic & Wildlife	Fish Consumption	Body Contact	Domestic Water Source	Agricultural
1	Warm water	√	Full	√	Livestock watering
2	Warm water	√	Full		Irrigation & Livestock watering
3	Warm water	√	Full		Livestock watering
4	Ephemeral		Partial		Livestock watering
5	Ephemeral		Partial		
6	Effluent dependent water		Partial		Livestock watering

Figure 2. Designated Water Uses within Stormwater Permit Area

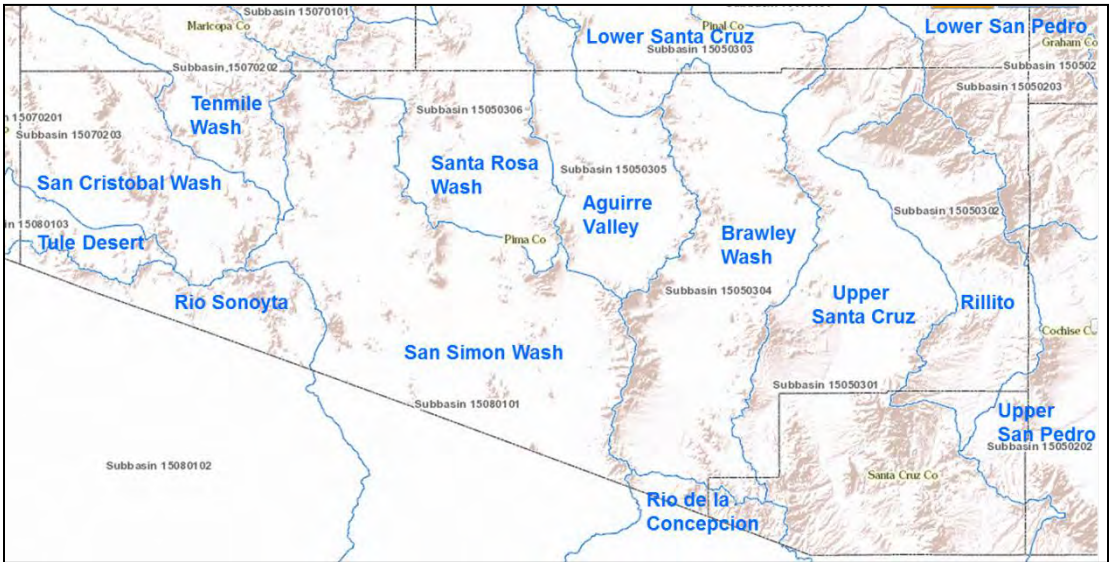


Figure 3. Watersheds within Pima County

contrasted with the sparsely vegetated uplands. The dense vegetation serves to moderate soil and air temperatures, stabilize channel banks and interfluves, bank seeds and trap fine-grained sediments favorable to the establishing a diversity of floral and faunal species, and dissipate stream energy thereby aiding both flood control and stormwater management (Levick et al, 2008).

Land use ranges from undeveloped in the mountainous and rural areas to developed in the metropolitan area. Development includes agriculture, mining, residential, commercial and industrial land uses. Data from the 2010 census indicates 346,747 people live in unincorporated Pima County. The majority of the population lives within the permit area. The largest segment of Pima County's MS4 is the roadways with 1,784 miles of paved road, 285.2 miles of dirt road, and an additional 17.7 miles of road maintained by Pima County through intergovernmental agreements (IGAs). The second largest segment of the MS4 is 39 miles of stormdrains.

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PART I. PUBLIC EDUCATION AND OUTREACH

A. Permit Requirements

The county shall provide education and outreach to the general public and business community on the stormwater management program issues and requirements. The following details the outreach strategy employed within the permit area.

Public education and outreach on one topic will be provided to one target group each year. The target groups include the general public, residential communities, home owners, HOAs and schools. The topics include the following:

- Post-construction ordinances and long-term maintenance requirements for permanent stormwater controls
- Stormwater runoff issues and residential stormwater best management practices
- Potential water quality impacts of application of pesticides, herbicides and fertilizer and control measures to reduce runoff of pollutants in stormwater
- Potential impacts of animal waste on water quality and the need to clean up and properly dispose of pet waste to reduce runoff of pollutants in stormwater
- Illicit discharges and illegal dumping, proper management of non-stormwater discharges, and to provide information on reporting spills, illegal dumping, and illicit discharges
- Spill prevention, proper handling and disposal of toxic and hazardous materials, and measures to contain and reduce discharges to the MS4
- Installation of catch basin markers or stenciling of storm sewer inlets to reduce illicit discharges and illegal dumping to the MS4
- Proper management and disposal of used oil

The public outreach approach, topic, target group and estimated number of participants reached will be reported in the annual report.

The county shall provide business sector education and outreach to one target group on one topic each year. The target groups include the development industry, construction site operators, targeted sources and selected businesses, such as industrial or commercial businesses. The topics include the following:

- Planning ordinances and grading and drainage design standards for stormwater management in new developments and significant redevelopments
- Municipal stormwater requirements and stormwater best management practices for construction sites
- Illicit discharges and proper management of non-stormwater discharges
- Spill prevention, proper handling of toxic and hazardous materials, and measures to contain and reduce discharges to the MS4
- Proper management and disposal of used oil and other hazardous or toxic materials, including practices to reduce exposure of materials/wastes to rainfall and reduce contamination of stormwater runoff

- Stormwater best management practices, pollution prevention plans, and facility maintenance procedures

The business outreach approach, topic, target group and estimated number of participants reached will be reported in the annual report.

B. Implementation

The approach to public education and outreach includes strengthening the community's ability to minimize pollutant discharges into desert washes and tributaries as well as preventing illicit discharges to the MS4 thereby protecting the physical, biological and chemical integrity of water quality. PDEQ coordinates with federal, state, and local governmental agencies, educational institutions, non-governmental organizations and other local entities to pool resources and reach a more diverse segment of the population. Program performance measures are observed in the number of contacts from the Business Assistance Program, number of people reached in the conferences, seminars, and presentations; the amount of literature collected from the EcoNook and EcoKids program, and number of visits at Pima County's stormwater website. These measures directly increase the knowledge and skills of stormwater stewardship.

Business Assistance Program

Activities in the Business Assistance Programs help local businesses comply with applicable environmental requirements. Pima County DEQ staff assists businesses in the completion of permit applications, clarifies the complex regulations, identifies potential violations, informs businesses about pollution prevention methods and offers suggestions to reducing stormwater discharges and stay in compliance. Free literature is provided.

Conferences, Seminars and Presentations

Pima County coordinates conferences, seminars and presentations to educate the community about stormwater management. Conferences are developed to provide in-depth education and share cutting-edge information with individuals ready to implement the new concepts. Seminars are hosted for select groups interested in a particular topic and presentations usually highlight the selected topic of the year. PDEQ staff exhibits at multiple public events including Earth Day, Green Living Fair, the Green Fest, Tucson Meet Yourself, private and public sector employee health fairs, University of Arizona and Pima Community College events, fire safety fairs, WaterFest, Cyclovia and other events promoting alternate modes of transportation.

Pima County participates in a multi-jurisdictional regional Stormwater Construction Seminar each year. Seminar topics are based on observations of the MS4 managers of needs in the community as well as topics requested by the previous seminar attendees. The seminar is developed and sponsored by the Pima Association of Governments (PAG), Pima County DEQ staff, City of Tucson, Town of Marana, Town of Oro Valley, Town of Sahuarita, ADEQ, Arizona Department of Transportation and consulting firms from the construction industry and advocates for the public.

Each fall semester, Pima Community College requests a three hour presentation on stormwater management for the lecture *Building/Construction Technology 265 Sustainability*. Class sizes range

between 5 to 30 people, depending upon the number of people registered in a semester. Topics address application for a Construction General Permit NOI, stormwater regulations, and control measures effective in semi-arid climates.

Pima County DEQ also participates in numerous storm water-related meetings of the Storm Water Management Working Group hosted by the Pima Association of Governments (PAG). This group develops a multi-media outreach campaign designed to educate residents about stormwater pollution. The slogan "Clean Water Starts with Me" is used consistently to increase familiarity with the successful message. Artwork and style matches the imagery used by the local jurisdictions in school programs. Public Service Announcements (PSAs), radio ads, billboards, magazine ads and social media ads are run through the monsoon season from July through September and are screened on different television stations to reach additional audiences, including Spanish-speaking populations.

EcoNook for Desert Dwellers and Eco Kids Corner

The public awareness program involves on-going education in locations where people are most receptive. In coordination with PDEQ staff, librarians from 27 libraries maintain special areas within each library where free environmental literature are available for patrons. "EcoNook for Desert Dwellers" targets teenagers and adults while "Eco Kids Corner" serves children 12 years and under. Educational materials include stormwater quality topics such as stormwater pollution prevention, water harvesting, desert gardening and Green Infrastructure and Low Impact Development (GI/LID).

Household Hazardous Waste Program

The Household Hazardous Waste Program, operated jointly by Pima County and the City of Tucson, provides a means for small businesses and the public to properly dispose of common household and automotive products. The public is instructed to buy only what they need, read and follow label instructions, store properly in labeled containers, drop leftover quantities to any of the City or County drop-off sites at the HHW's main site, landfills and/or transfer stations, and at HHW public events. The HHW program deters hazardous waste from potentially being illegally dumped into the MS4, improperly disposed of into solid waste receptacles, or spilled onto County streets.

Tucson Clean and Beautiful

This non-profit organization facilitates recycling activities in the metropolitan area of Tucson with a Recycling Info Line, a recycling directory, and recycling information appealing to kindergartners through adults. The recycling education helps people remove pollutants that could enter stormwater. Education about other forms of citizen participation includes how to make Tucson a cleaner place by planting trees useful to increasing water infiltration, reducing stormwater runoff, trapping pollutants to improve water quality, and stabilizing soil to prevent erosion.

Website Access

Pima County's stormwater website provides educational information for the general public, construction industry, and industrial facilities. Details of the County's stormwater program are provided including the SWMP, annual reports, stormwater rules & regulations, publications, and permits for construction sites and industrial facilities. Instructions are included in using Pima County's GIS software MapGuide containing layers useful to understanding the flow of stormwater on a selected parcel and neighboring properties. Links to EPA's stormwater website and ADEQ's Smart NOI are also provided.

C. Five-year Education and Outreach Plan

Each year, a topic is selected for outreach and education based on local significance and the 2011 MS4 permit criteria (Table 1). For example, surface water sampling in Arizona shows *E. coli* contributes to about 25% of the 2010 Impaired Waters of the state (ADEQ, 2012). Since *E. coli* is one of the most frequently detected pollutants in desert washes, pet waste management was selected as the 2011 educational theme. Each topic will be presented to the selected audience with a brochure and PowerPoint presentation. Coordination with the Stormwater Working Group results in additional outreach throughout the county

Table 1. Five Year Public Education and Outreach Plan

Fiscal Year	Public Topic	Public Audience	Business Topic	Business Audience
11/12	*E. Coli*	Residential	Construction BMPs	Construction Industry
12/13	Oil & Grease	General Public	Oil & Grease	Transportation
13/14	Illicit discharges	Residential	Illicit discharges	Private Waste Haulers
14/15	LID/GI	General Public, Residential	LID/GI	Development community, landscaping industry
15/16	Pesticide/Herbicide	General Public Residential	Pesticide/Herbicide	Lawn & Garden centers

PART II. PUBLIC INVOLVEMENT AND PARTICIPATION

A. Permit Requirements

Pima County shall engage the public and spread the message to prevent stormwater pollution through neighborhood activities and community actions that restore and protect local water resources. The following details the strategies to be applied.

The County shall implement one of the following activities to provide fundamental support to the county's SWMP:

- Provide the opportunity to involve the public in the County's stormwater management program and to encourage public participation in monitoring and reporting spills, illicit discharges, or illegal dumping within their communities (such as facilitation of neighborhood watch groups) once per year.
- Provide the public an opportunity to participate in the County's stormwater management program, such as voluntary litter control measures (e.g. facilitation of Adopt-A-Wash, Adopt-A-Park, and Adopt-A-Street litter control measures) or voluntary erosion control projects. Maintain and support program as a regular ongoing activity.
- Provide the public with household hazardous waste program to facilitate proper disposal of used oil, antifreeze, pesticides, herbicides, paints, and other hazardous and toxic materials by County residents (such as scheduled household hazardous waste collection events or operation of full-time disposal facilities) a minimum of two times per year for the first two years of this permit, three times per year for the years three and four of this permit, and every year thereafter.

The county shall provide and publicize a reporting system to facilitate and track public reporting of illicit spills, illicit discharges or illegal dumping to the MS4 (i.e. stormwater hotline, webpage, etc.) on a continuous basis. The current SWMP and the latest annual report shall be posted on the county's web site immediately after completion.

B. Implementation

The MS4 stormwater education programs are designed to invite public engagement. The public's substantive actions are observed in the amount of trash collected in the Adopt-A-Roadway program, the number of environmental complaints reported, amount of recycled material from Household Hazardous Waste Program, number of services implemented by Tucson Clean & Beautiful, and amount of trash collected in the Wash Up Program. All programs reduce the amount of materials that could potentially add pollutants to stormwater.

<u>Adopt-a-Roadway Program</u>

Volunteers in Pima County's Adopt-a-Roadway program clean up roadways and public lands. The program has 240 adopted roads with a total length of 380 miles. Non-profit organizations make a two-year commitment to pick up litter at least twice a year along a two-mile stretch of county roadway. In turn, Pima County posts signs where roads have been adopted and provides safety education, safety vests, and trash bags to the participants. After the bags are filled, Pima County

collects the bags and properly disposes them in a landfill. Pima County tracks the amount of material cleaned up from each adopted road that would have otherwise been transported into the washes.

Environmental Complaints

The county operates an environmental hotline during normal business hours for trained personnel to receive calls regarding environmental concerns, including potential stormwater pollution like illegal dumping, hazardous material disposal, inappropriately draining pools and other environmental nuisances. Each complaint is initially evaluated to see if it is located within unincorporated Pima County. Those complaints outside the county's jurisdiction are referred to the responsible jurisdiction. Inspections are performed to determine the source of the complaint as well as to mitigate complaints. PDEQ widely distributes the hotline number in brochures and on strategically-placed signs that inform the public how to identify environmental concerns and invites the public to report their observations of illicit discharge and other complaints to Pima County.

Household Hazardous Waste Program

The Household Hazardous Waste Program, operated jointly by Pima County and the City of Tucson, provides a means for small businesses and the public to properly dispose of common household and automotive products. The public is encouraged to bring automotive fluids, batteries, drain openers, hobby chemicals, household cleaners, lawn and garden products, pesticides, paint products, medications, polishes, pool chemicals, solvents and items labeled acid, flammable, caustic, poison, caution, toxic, danger or warning. Program managers track the number of participants and events as well as the amount of waste collected from the public and small businesses.

Tucson Clean & Beautiful

Tucson Clean & Beautiful Inc. is a non-profit organization funded in part by City of Tucson, Pima County, private grants and program sponsorships, annual memberships, in-kind donations and volunteer services. They facilitate litter pick up through Adopt-A-Park & Public Areas, recycling and waste reduction education, and planting trees to increase shade and stormwater interception. Their on-line services and monthly newsletters identify controlling stormwater runoff and blocking soil erosion as program goals.

PART III. ILLICT DISCHARGE DETECTION AND ELIMINATION (IDDE)

Five county departments provide services to detect or eliminate illicit discharges. Prevention activities occur during the design phase of construction projects. Reviews of design plans by Pima County Department of Environmental Quality (PDEQ) verify there are no cross-connections between sewer and stormwater systems. Field inspections performed by Development Services Department (DSD) verify the construction project is built according to approved plans. PDEQ also inspects septic systems for proper function prior to being put into operation. Regional Flood Control District (RFCD) and PDEQ perform inspections at outfalls to verify there are no illicit discharges. Restoration activities occur throughout the year as reports of illicit discharges come from the public and other county departments such as Regional Wastewater Reclamation Department (RWRD) and Pima County Department of Transportation (PDOT). PDEQ inspects reports of illicit discharges and pursues compliance with stormwater regulations.

A. Practices to Prevent Illicit Discharges

Pima County applies two sets of regulations to prevent illicit discharges, namely Pima County Ordinance Title 7 Environmental Quality and the state delegated authority for managing used oil (A.R.S. §§ 49-801, 803, 811, and 812 and Title 40 CFR § 279.1). The sections of Title 7 applicable to stormwater management include P.C.C § 7.21.025 (General Prohibitions), P.C.C § 7.33 (Removal of Rubbish, Weeds, filth and Debris) and P.P.C § 7.45 (Environmental Nuisances).

De Minimus discharges are allowed to the MS4 in accordance with General Permit for De Minimus Discharges to Waters of the U.S. Permit No. AZG2010-001. The discharges include potable water systems, subterranean dewatering, well development and maintenance and/or aquifer testing, hydrostatic testing, and post-repair flushing of reclaimed water lines with Class A+ or B+ water to ephemeral or effluent-dependent water.

Pima County's non-stormwater discharge records document spills, environmental complaints and Notices of Violation (NOV). This information is reported annually to ADEQ. The other potential source of illicit discharges is tracked through two types of permits, namely an ADEQ Type 2.05 General Aquifer Protection Permit for capacity, management, operation, and maintenance of a sewage collection system (Pima County, 2012b) and AZPDES permits held by the water reclamation facilities. Sanitary system overflows are reported to ADEQ in accordance with one or the other of these permits.

Other potential non-stormwater discharges include discharges of process water, air-conditioner condensate, non-contact cooling water, and vehicle wash water. Visual inspections have been performed in all months of the year, except September, at all outfalls and observations have not resulted in the detection of flowing water or other indicators of illicit discharges. Indications of illicit discharges are stains, odors, and dead plants. Three physical constraints make the discharge of non-stormwater flows rare. Water flows in the drainage system only in response to rainfall events. Stormdrains are short, typically less than 2,000 feet, and are few in number (39 miles) relative to the gravity sewer system (3,441 miles) thereby limiting the opportunity for illicit connections (Pima County, 2012b). Water conservation is a regional ethic within the desert which reduces discharges

carried in water. If an illicit discharge of a liquid occurs, the discharge appears as a fluid running in an otherwise dry road or streambed making the illicit discharge obvious. The public reports these types of discharges as environmental complaints, which are tracked as noted in Section F on investigating potential illicit discharges. In the rare event that an illicit discharge of a liquid would occur, Pima County performs outfall inspections and is prepared to collect water samples.

B. Procedures for Field Screening

Major Outfalls and Field Screening Points

The drainage way system currently has 39 miles of storm drains and 39 identified outfalls (Appendix C). Additional outfalls are being identified within the permit area. All outfalls are non-priority. During 15 years of inspection, which have occurred in every month except September, illicit discharges have not been detected while inspecting outfalls nor have there been indications of illicit discharges, such as unusual discoloration, odors or dead plants. Due to the open nature of the conveyance system, a release of water with pollutants would be easily tracked to its source. The ability to easily identify a source is a deterrent to illicit discharges of liquids.

The most frequent form of pollutants within unincorporated Pima County is people dumping solid wastes into dry washes. The public observes the trash in the washes and reports it to PDEQ. These reports are managed as described in Sections C of this chapter.

The method of land development within Pima County results in pockets of land with paved roads and storm drains. Water draining from these developed areas flows downstream into natural washes in undeveloped desert or washes with bank protection in developed areas. When surface flows can be transported through natural washes and bank-protected washes, the distinction between the boundaries of the MS4 and receiving waters is not clear; this also complicates the identification of outfalls.

Inspections of Major Outfalls

Observations during dry weather screening at outfalls include weather conditions, the presence of a discharge and, if there is a discharge, its characteristics in terms of color, odor, turbidity, nature of the water surface, and presence of floatables. The condition of the outfall is assessed to determine if there is damage or if there are deposits or stains and whether vegetation is present. If a discharge is present, a water sample is collected and analyzed for pH, temperature, chlorine, copper, phenol and surfactants.

C. Proper Management of Used Oils and Hazardous and Toxic Substances

The ADEQ delegated the authority of inspection and enforcement to eliminate used oil disposal on land on April 21, 2013. The regulatory vehicle comprises A.R.S. §§ 49-801, 803, 811, and 812 and Title 40 CFR § 279.1. PDEQ incorporated these activities into the Site Inspection Reports recording observations during Illicit Discharge Detection and Elimination inspections, construction site inspections, industrial facility inspections and post-construction inspections.

D. County Employee Training

New stormwater inspectors are trained in the methods of detecting, inspecting and mitigating illicit discharges, De Minimus discharges, and other sources of non-stormwater discharges. Specific information to be provided will include field screening procedures and measurements, sampling methods and use of chain-of-custody protocols, if a water quality sample is collected for analytical analysis. Existing employees will receive refresher training every other year.

County employees in DSD, PDOT, and RFCD will be trained annually in the methods of detecting and reporting illicit discharges to PDEQ. Additionally, the employees involved in mitigating the illicit discharge will receive training in proper methods of removal and disposal.

E. Investigating Potential Illicit Discharges

Dry weather flows

All outfalls have been dry during field screening. The majority of stream channels are designated ephemeral. Consequently, any dry weather flows would easily be tracked to the source. Easy identification of a source is a strong deterrent to individuals making dry weather discharges. Nonetheless, Pima County continues to inspect all major outfalls every year to assess if there has been an illicit discharge. In addition, Pima County inspects 20% of the remaining outfalls each year and will complete the inspection of all outfalls within the five-year period of the permit.

Investigation of Potential Illicit Discharges

Pima County DEQ receives complaints from the general public, elected officials, regulators, and local governments identifying potential sources of pollutants that could endanger public health or the environment. Each complaint within Pima County's jurisdiction is inspected to determine if a pollutant has entered the environment and if so, the severity of the problem. When a discharge is identified, PDEQ issues a Notice of Violation (NOV) to the source of the discharge. The complaints and NOVs are tracked in a database. A file is also created for each property with identified pollutants to store observations, reports and communication with the property owner. PDEQ may also send informational literature, such as how to properly backwash a swimming pool, to assist the public in proper stormwater management.

Compliance Activities/Enforcement

The NOV identifies the pertinent regulation(s) being violated and the specific correction actions to be taken within a specified time period. NOVs are closed when the pollutant has been abated. If the source of the pollutant does not implement the corrective actions of the NOV, Pima County escalates the enforcement in accordance with the ordinance being violated.

Illicit Discharge Elimination

NOVs are tracked to verify the discharge has been properly remediated. Additionally, if a property has been abandoned or disposal of materials cannot be traced to a source, the materials are removed by PDOT or PDEQ.

Illicit Discharge Public Awareness

A number of programs have been in place since at least the late 1990s to educate the public and promote public reporting as described in Part I.B. The public can report illicit discharges by phone or on-line. The environmental hotline is included on PDEQ's website, brochures and News Releases.

Additional inspections will be performed at Pima County industrial facilities to assess the potential for cross-connections to storm drains. The process is described in Part VI.B.

PART IV. COUNTY FACILITIES POLLUTION PREVENTION & GOOD HOUSEKEEPING PRACTICES

Good housekeeping at county Facilities includes proper management of used oil, hazardous and toxic substances, and a Spill Prevention and Response Plan. Training in this area is a preventive measure to keep stormwater clean.

The County Facility Inventory (Appendix D) includes the facility name and address, type of facility, latitude and longitude, facility contact, operational status, description of activities with potential to discharge a pollutant, and level of risk. Included in the inventory are Publicly-Owned Treatment Works that are operated and maintained to prevent exfiltration and overflows of sewage. These facilities operate in compliance with Arizona Department of Environmental Quality (ADEQ) water permits such as Capacity, Management, Operation, and Maintenance (CMOM), Aquifer Protection Permits (APP) and Arizona Pollutant Discharge Elimination System (AZPDES) permits. Additional facilities to be included are airports, parks, fleet services, golf courses, recreational facilities, and waste storage and processing facilities, such as landfills. The assessment of risk level was based on exposure of potential pollutant(s) to rainfall or stormwater and transport to an MS4 or Water of the United States as well as the level of toxicity or mutagenicity of the potential pollutant(s). Proximity to receiving waters is also an additional criteria; however, none of the industrial facilities are upstream to an impaired water or Arizona Outstanding Water as of the publication date of the document.

The next step will be inspection of each facility to assess the potential for pollutants to be exposed to rainfall or runoff. Facilities with minimal exposure of pollutants and minimization of erosion will be found compliant with local stormwater regulations.

A. Controls for Pesticides, Herbicides, and Fertilizers

Pima County DOT developed a procedure to apply herbicides controlling weeds and noxious or invasive vegetation in the vicinity of Waters of the U.S. in a manner consistent with the ADEQ Pesticide General Permit No. AZG2011-001 (Pima County, 2011c). The procedures apply to right-of-ways and easements that are along the edges of washes, roadway dip crossings and conveyances to Waters of the U.S. Both Pima County and their contractors apply these procedures to their spraying activities.

Pima County Regional Flood Control District (RFCD) confirmed their application of herbicides and pesticides did not occur within designated waters of Arizona and therefor did not require an application for a NOI for the ADEQ Pesticide General Permit No. AZG2011-001. When this type of application is needed, RFCD hires a contractor to apply the herbicide for vegetation control and herbicide for mosquito control.

B. Spill Prevention and Response Plan

Spill prevention and response are implemented according to the Procedure for Emergency Spill Response (Pima County, 1995). County staff are annually trained either in the Emergency Response

Plan written for the building they work in or if they work around hazardous materials, they receive training in evacuation procedures, general hazard awareness, procedures for first person on the scene, spill procedures and procedures for the Response Coordinator/ Environmental Officer (RC/EO). Each department has an RC/EO specifically trained to handle emergency situations and what actions to take in the event of a spill.

Pima County established a protocol to timely and effectively respond to, control and abate the accidental or intentional release of a hazardous substance outside its scope or intended purpose (Pima County, 2010a). The Pima County Hazardous Materials Teams respond when there is a release of a hazardous substance. The team includes four fire districts and two fire departments. The primary considerations are life safety, property conservation and environmental protection. After assessing the hazards and securing the site for safety, spill containment and clean-up begin. First responders coordinate with the facility managers to clean-up and properly dispose of the hazardous materials.

In addition to the protocol, a number of facilities with hazardous materials have developed a Spill Prevention Plan. During the third year of the permit, PDEQ will inspect each facility to verify each facility has been permitted with an AZPDES permit, if appropriate, or has a current Spill Prevention Plan actively implemented.

C. County Employee Training for employees with stormwater related responsibilities

PDEQ will train new inspectors within the first year and every other year after that. Training topics will include proper street repair; spill prevention and response; proper handling, storage, transportation and disposal of use oil and other toxic hazardous materials and wastes to prevent spills; maintenance and repair of water and sanitary sewer systems to reduce discharges; and stormwater best management practices (BMPs) that include application of provisions in Title 7 of Pima County Code and other stormwater related regulations and permit requirements. PDEQ will arrange for training for PDOT in street repair practices that protect stormwater and stormdrains.

PART V. RESIDENTIAL AND COMMERCIAL CONTROL MEASURES

A. Drainage System Maintenance

Drainageway Maps

Pima County has developed GIS layers for all stormdrain structures (Appendix E). The direction of flow is inferred by turning on the layer with topography and knowing water flows downhill. The infrastructure, such as storm drain inlets, catch basins, detention/retention basins (county-owned) and outfalls are shown on the map as well. The drainage areas for the outfalls will be prepared by the 4th year of the permit. The jurisdictional boundary is complete for 2011 and will be modified annually as unincorporated Pima County is incorporated to other jurisdictions.

Drainageway Inspections

RFCD regularly inspects outfalls, detention/retention basins and segments of the conveyance system they are responsible for maintaining. Outfalls and detention/retention basins are inspected and repaired every year. Inspections of the conveyance system are performed on a three to four year cycle. Repairs and maintenance are directed based on the results of these inspections as wells as reports of illicit discharges or complaints. Areas with known vegetation maintenance are inspected and maintained every six to twelve months, depending upon the requirements of the location.

Drainageway maintenance

Pima County RFCD maintains 450 miles of drainage, excluding the major water courses of the Santa Cruz River, Rillito River, Pantano Wash and Cañada Del Oro Wash. RFCD prioritizes 150 miles for inspection each year, and inspects the identified outfalls (Appendix C) and drainage reaches. Inspections are followed up with cleaning, grading and mowing where needed. Additionally, RFCD maintains groundwater recharge and replenishment projects, riparian habitat protection projects, riparian habitat restoration, and riparian land acquisitions. Active riparian habitat and ecosystem restoration projects are maintained until the restoration activities are completed.

B. Controls for New Development and Significant Redevelopment

Controls for new development and significant redevelopment are described in Part VII.A.

C. Roadway Maintenance

Pima County Department of Transportation (PDOT) maintains 2,087 miles of roads and the drainageways in the road right-of-ways. Maintenance priorities are based on routine cycles, visual inspections, and service requests from the public. All information is prioritized and scheduled based upon available resources. The types of roadway maintenance include sweeping, shoulder repairs, pothole repairs, grading and blading, sidewalk and curb repair, street surface repairs and litter and debris removal. Major roads are routinely swept four times per year and subdivisions are swept two times per year. Additional sweeping may be contracted on an as needed basis. These activities reduce the accumulation and transport of sediment and litter to the MS4. The county will prepare a

Control Measure Field Program for Road Maintenance early in the third permit year. The program will be incorporated within PDOT standard operating procedures within the third year of the permit.

D. Additional Practices to Reduce Pollutants from Residential and Commercial Areas

Post-construction Controls

PDEQ tracks how well construction contractors clean up the construction sites after construction is complete. Additional post-construction activities include open-space preservation, on-site stormwater retention, maintenance of pre-construction runoff rates and street sweeping.

Environmental Projects

Restoration of riparian habitat and ecosystems achieves Pima County's goal to protect the full range of plants and animals native to the region (Pima County, 2007), as well as stormwater management. Lands acquired through FLAP, the Open Space Conservation Program, and other properties have been identified to capture stormwater in multi-purpose restoration projects. Some projects convert existing detention basins into wildlife habitat while others have been designed to collect stormwater and use it as irrigation water in public ball fields and park areas with wildlife and riparian habitat (City of Tucson and Pima County, 2009b).

Open Space Conservation Program

Land has been purchased under the 1997 Open Space Bond Program (OSBP), the 2004 Conservation Acquisition Bond Program (CABP) and the FLAP to conserve land (Appendix F). The 1997 OSBP and 2004 CABP protect the region's most prized natural and cultural resources (Pima County, 2011d). The FLAP preserves land in floodways. These open spaces also support of the Multi-Species Conservation Plan (MSCP) and the Stormwater Management Plan. These lands can be used for the MSCP if the lands have not been acquired with federal funds, are managed and monitored for biological protection, and have a legal status ensuring conservation (Huckelberry, 2009).

Pima County Air Quality Activity Permits

PDEQ requires air quality activity permits, called fugitive dust activity permits, for trenching operations, road construction, and land stripping or earthmoving activities that disturb one acre or more. Each permit requires the construction site operator to take reasonable precautions to control fugitive dust emissions from the site. Proper dust suppression techniques prevent the deposition of windblown dust that may later become entrained in stormwater and reduces tracking from construction sites.

PART VI. INDUSTRIAL FACILITIES

A. Identification of Priorities and Implementing Controls

Industrial Facility Inventories

Two inventories are used to track industrial and commercial activities, one for non-county industrial facilities (Appendix G) and another for the facilities that treat, store or dispose of hazardous waste and facilities subject to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (Appendix H). The non-county Industrial Facilities Inventory is updated monthly based on ADEQ's list of facilities filing for the 2010 Multi-Sector General Permit (2010 MSGP). Facilities located within the permit area and which have the potential to discharge to a Pima County roadway or drainageway are added to the non-county industrial inventory. Additionally, inspectors maintain an awareness of facilities which need to file a Notice of Intent for the 2010 MSGP and have not filed as yet. PDEQ notifies ADEQ in writing when a potentially qualifying industrial or commercial facility does not have an NOI.

The non-county industrial facility inventory contains an assessment of the level of risk based on exposure of potential pollutant(s) to rainfall or stormwater and transport to an MS4 or Water of the United States as well as the level of toxicity or mutagenicity of the potential pollutant(s). Proximity to receiving waters is also an additional criterion; however, none of the industrial facilities are upstream to an impaired water or Arizona Outstanding Water as of the publication date of the document.

The County Facility Inventory (Appendix D) contains similar types of information and a determination of the level of risk. Additional information is in Part IV.

B. Inspection and Monitoring

Inspections are performed for both county and non-county industrial facilities. Stormwater inspections for non-county industrial facilities are designed to evaluate consistency with the ADEQ's 2010 MSGP and compliance with Pima County ordinances. Annual inspections are scheduled for at least 20% of the industrial facilities. The facilities with the greatest potential for a discharge, namely scrap metal recyclers and auto recycling businesses, were inspected first. For consistency with the 2010 MSGP, inspectors review the SWPPP for completeness and accuracy, verify monitoring is performed and documented within the SWPPP and then inspect the facility. The facility inspection evaluates the level of implementation and maintenance of both structural and non-structural control measures, as well as the presence and indications of discharges. For compliance with Pima County ordinances, inspectors determine if stormwater pollutants are exposed to the environment and whether erosion is minimized. The results of the inspection are sent to the facility contact with a notice of the status of compliance and a list of activities that need to be taken to return to compliance, if the facility is out of compliance.

After each inspection, PDEQ sends the owner or operator an electronic version of the Site Inspection Report indicating whether they are consistent with the 2010 MSGP or are incompliance with Pima County ordinances. If there are inconsistent or out of compliance, the owner or operator are given a

specified time frame to correct the inconsistency or non-compliance. Correction actions for updates to a SWPPP may be demonstrated by sending information electronically. Correction actions for control measures are inspected when the owner or operator notify PDEQ the actions are complete. If the follow-up inspection shows the industrial activity remains inconsistent with the 2010 MSGP, PDEQ refers the facility to ADEQ. Pima County will write a Notice of Violation (NOV) for unresolved industrial activities violating Pima County code.

The outcome of each inspection is logged in the non-county industrial facility inventory. The date and the inspection outcome with respect to ADEQ consistency and Pima County ordinance are logged as either in compliance (IC) or out of compliance (OC). Facilities that are out of compliance are tracked until they are brought into compliance or are referred to the agency issuing the permit, namely ADEQ. The goal is to bring facilities into compliance within a one year period from the initial inspection identifying a non-compliance issue exists.

Results of each year's inspections are reviewed to determine how well the facilities are maintaining compliance with state and local stormwater regulations. Where patterns are identified, alternate actions are developed. Alternate actions include education of specific businesses or regional organizations representing the businesses on more effective BMPs and updates in regulations.

Industrial facilities that have not filed for the AZPDES Multi-sector General Permit are reported to ADEQ in the annual report. PDEQ may become aware of facilities being non-filers through observation of facility activities or through complaints submitted by the public.

C. Compliance Activities/Enforcement

NOVs issued to facilities remaining out of compliance with Pima County code include the ordinances being violated, the required corrective actions and the time frame the actions are to be completed. Corrective actions at this stage will close an NOV case. If corrective actions are not taken, Pima County escalates the enforcement in accordance with the ordinance.

D. Control Measures for Landfills, Waste Facilities and Industrial Facilities

Additional control measures for county landfills, waste facilities and industrial facilities are not needed as each facility is permitted with ADEQ with a CMOM, APP, or general AZPDES permit for Multi-sector General permits (MSGP), as described in Part IV.

E. County Employee Training

Pima County will train inspectors on effective stormwater best management practices (BMPs) in industrial and commercial facilities. Training includes a review of the ADEQ's Multi-sector General Permit, Pima County's applicable ordinances, methods of reducing or removing industrial and commercial pollutants from exposure to stormwater and how to minimize erosion. New inspectors will be trained upon entry to the job and every other year thereafter.

PART VII. CONSTRUCTION SITES

A. Review Construction Site Plans

Construction site inventory

Pima County DEQ prepares a construction site inventory based on ADEQ's list of operators filing for the 2008 Construction General Permit (CGP). Projects filing an NOI with ADEQ that are located within unincorporated Pima County and which can discharge to Pima County's MS4 are added to the inventory. If PDEQ identifies construction activities are taking place without an NOI for the CGP, PDEQ notifies ADEQ.

MS4 plan review of construction sites (type, approvals, process summary)

Pima County coordinates with project managers for private developments to ensure development plans are designed in accordance with International Building Codes (IBC) and Pima County ordinances. Responses from departments and coordination with the project manager result in approved plans with grading plans. Approved plans receive a grading permit, and possibly a building permit if there are vertical structures being built. All plans are reviewed by Development Services Department (DSD) as well as Environmental Quality (EQ), and Regional Flood Control District (RFCD), when needed. If a building is constructed, an Occupancy Permit is issued when complete.

DSD verifies the development plans meet a number of requirements including plumbing and building codes standards and stormwater ordinances. The stormwater ordinances include the Buffer Overlay Zone (BOZO), grading standards (GS), setback requirements for BOZO and GS, hydro seeding and revegetation, Hillside Development Overlay Zone and surface stabilization. Their inspectors verify construction proceeds according to approved plans.

For septic systems, PDEQ reviews development plans and percolation tests then performs a post-construction installation inspection prior to plan approval. The site is also inspected by DSD inspectors to verify construction is proceeding according to the design plans. Septic system failure or exfiltration of water from these systems into the Pima County MS4 rarely occurs. If surface discharged from septic systems occur, the discharge is regulated under the ordinance prohibiting liquid waste flowing to waters or land (P.C.C. §7.21.025.A).

RFCD reviews the development plans to verify subdivision plates, commercial properties, and industrial properties have detention/retention basins with sufficient capacity (Pima County, 1989, Pima County, 2007). Additionally, buildings must be setback from flood hazards. RFCD issues Flood Plain Use Permits (FPUPs) for specific improvements within the regulatory floodplain or erosion hazard area. These permits are required prior to beginning construction in areas were flows exceed 100 cubic feet per second or where sheet flooding occurs. They also verify if there is a right on the property to use it in accordance with the development plan. Hydrologic studies are performed at points of interest to assess compliance with these floodplain and flood hazard requirements (Pima County, 1984; City of Tucson, 1987).

RFCD implements green infrastructure programs, specifically riparian habitat mitigation, flood prone land acquisition program (FLAP), and riparian habitat and ecosystem restoration. Riparian

habitat evaluations are performed for development plans taking place on mapped riparian habitats. RFCD works with the project manager or designer to reduce the acreage of riparian habitat used. The land with riparian habitat designed for development must have a riparian mitigation plan, which means another plot of riparian habitat is set aside in its natural state (Pima County, 2010b; Pima County, 2011a). Inspections are performed to verify the developed area matches that identified on the approved plan.

Staff training

Pima County will provide training to PDEQ inspectors for county stormwater-related ordinances, plan review procedures, grading and drainage design standards, structural and non-structural control measures to be applied at construction sites, maintenance of control measures, and post-construction control measures. The employees shall also be trained in inspection and enforcement procedures. Pima County will provide the same training noted above to staff involved in the review process, namely with staff from DSD and RFCD.

B. Structural/non-structural Stormwater Control Measures

Standard procedures and practices for post-construction stormwater controls

Pima County will develop a comprehensive description of structural and non-structural control measures to reduce pollutants in stormwater runoff from construction sites as well as when construction is complete. The comprehensive description shall be available within three years of the permit issuance and will be posted on the stormwater website.

Low Impact Development

Pima County is evaluating the benefit of Low Impact Development (LID) as applied to stormwater management in semi-arid environments. Two conferences have been hosted by Pima County to identify LID practices and paths to implementation of those practices. In the fourth year annual report, Pima County will submit a report describing how LID can reduce pollutants in stormwater discharges and how LID design standards can be incorporated into approved plans.

C. Site inspections and enforcement

Construction Site Prioritization

PDEQ prioritizes the construction sites in the inventory. Low priority active sites are inspected twice each year. High priority sites include road construction projects, projects that are 50 acres or larger, and projects for which PDEQ has received more than two complaints for either air quality issues or stormwater issues. Once a priority is established, construction sites are grouped by quadrant and inspected to increase efficiency.

The permit specifies at least 90% of plans are to be reviewed. Pima County reviews all construction design plans for stormwater ordinances prior to issuance of a building permit or grading permit.

Inspections

Pima County implements three types of inspections. The inspections by DSD on private property ensure compliance with the IBC and Pima County ordinances. The inspections by RFCD verify the riparian mitigation plan is being implemented. The third type of inspection addresses AZPDES stormwater requirements. For consistency with the ADEQ CGP, AZPDES inspectors look for posted NOIs at the construction site, the presence of a complete SWPPP, implementation of surface stabilization control measures, and proper management of pollutant controls. For compliance with Pima County ordinances, AZPDES inspectors verify sources of pollutants are not exposed or have been removed from the environment, erosion prevention measures are effective and construction right-of-ways convey stormwater and are clean.

AZPDES inspections are performed at least twice a year for low priority construction sites and at least quarterly for the high priority. For Pima County construction projects, Pima County staff attends the pre-construction meeting and present the Stormwater Pollution Prevention Plan (SWPPP) to the contractor. The contents of the SWPPP are reviewed and both Pima County and the contractor walk the site to discuss the stormwater controls being implemented. For roadway construction projects, PDOT staff regularly inspects the sites to verify the contractor is abiding by the SWPPP. PDEQ will inspect the site at PDOTs request.

After each inspection, PDEQ sends the contractors an electronic version of the Site Inspection Report indicating whether they are consistent with the ADEQ CGP or are in compliance with Pima County Ordinances. If they are inconsistent or out of compliance, the operator is given 30 days to complete corrective actions; shorter time frames may be specified when the inconsistency or non-compliance is likely to result in pollutant discharges or flooding and a rainfall event is imminent. Corrective actions for updates to a SWPPP may be demonstrated by sending information electronically. Corrective actions for control measures are inspected when the operator notifies PDEQ the actions are complete. If the follow-up inspection shows the construction activity is inconsistent with the ADEQ CGP, PDEQ refers the site to ADEQ. Pima County will write a Notice of Violation (NOV) for unresolved construction activities violating Pima County Code.

Compliance Activities/Enforcement

A new Construction Site Inspection Standard Operating Procedure is being implemented, which includes compliance activities and enforcement.

D. Other Practices to Control Pollutants from Construction Sites

Flood Prone Land Acquisition Plan

The FLAP provides the funds and the mechanism for volunteers to offer their flood prone and erosion prone land for purchase (Pima County, 2011b). RFCD ranks the lands according to land use, flood potential, quality of the habitat, and watercourse hierarchy. These purchases keep undeveloped land in the natural floodplain condition while developed land can be returned to natural conditions. Both reduce the downstream flooding peaks and erosive potential of the water, which improves surface water quality.

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PART VIII. WATERSHED MONITORING

A. Wet Weather Monitoring

Rainfall measurements are logged using the Automated Local Evaluation in Real Time (ALERT) system. The ALERT system is composed of weather stations equipped with real-time sensors and a radio telemetry system transmitting the data to base station computers at RFCD. The weather station is equipped with a tipping bucket rain gage accurate to 0.04 inches of rainfall. The data is stored on-line and can be easily downloaded. Each time a tipping bucket registers 0.04 inches of rainfall, a notice is sent to the stormwater monitoring team who mobilize to the monitor sites and collect first-flush samples within the first half hour of rainfall, or as soon as is feasible, in accordance with the Sample and Analysis Plan (Appendix I). Sampling is scheduled for the first rain event in the winter season in November and the summer monsoon in late June. The summer season sampling begins in June and ends in October, which means the summer season sampling spans two fiscal years. The summer season sampling is reported for the later fiscal year.

The water samples are analyzed for conventional parameters, nutrients, oil & grease, metals, volatile organic compounds and semi volatile organic compounds to characterize the presence of pollutants. Samples are transported on ice and delivered to the Pima County laboratory that performs the analysis or contracts with another lab certified to perform the analysis. The data is initially reviewed to verify it passes quality assurance and quality control requirements.

B. Discharge Characterization

The water quality data is compared to surface water quality standards (SWQS). If a sample indicates concentrations are higher than the SWQS, the watershed draining to the monitor point is evaluated to determine the source of the pollutant. Additionally pollutant load estimates are calculated for 14 metals and 4 conventional parameters. The pollutant load is based on the area of the watershed, the rate of flow and the concentration of the parameter.

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PART IX. PROGRAM ASSESSMENT, REPORTS AND REVISIONS

A. Annual Program Assessment and Update

At the end of each fiscal year when all the data arrives from each department, PDEQ evaluates the results to see how well the program is performing. Changes will be made based on completeness of work, water quality results, and observed control measures performance.

B. Reporting Requirements

Pima County reports the results of the Stormwater Management Plan in each Annual Report due on September 30th. PDEQ assembles information provided by RFCD, DSD, RWRD and PDOT on a semi-annual basis. The annual report is reviewed by each division prior to signature by the Deputy Administrator John Bernal. The Annual Report is posted on PDEQ Stormwater website. In addition, when Pima County becomes aware of construction sites or industrial facilities that are operating without the appropriate permit, a notice is sent to ADEQ informing them of the address, owner and type of activities potentially qualifying the site or facility as an AZPDES non-filer. Pima County's 2011 AZPDES permit also requires notification when there is prior knowledge of a pollutant concentration that will be discharged that is larger than Arizona SWQS. As there are no such discharges from the MS4, this type of reporting is expected to be rare.

C. SWMP Revisions

The 2013 SWMP was modified by rearranging several sections to match the organization of the MS4 Permit, Appendix C. Also, the Delegation Agreement with ADEQ authorized PDEQ to investigate and enforce the used oil management regulations.

Revisions are expected in the future as the program develops to provide additional protection to the chemical, physical, and biological integrity of the surface waters in Pima County. Each new revision is certified (Appendix J).

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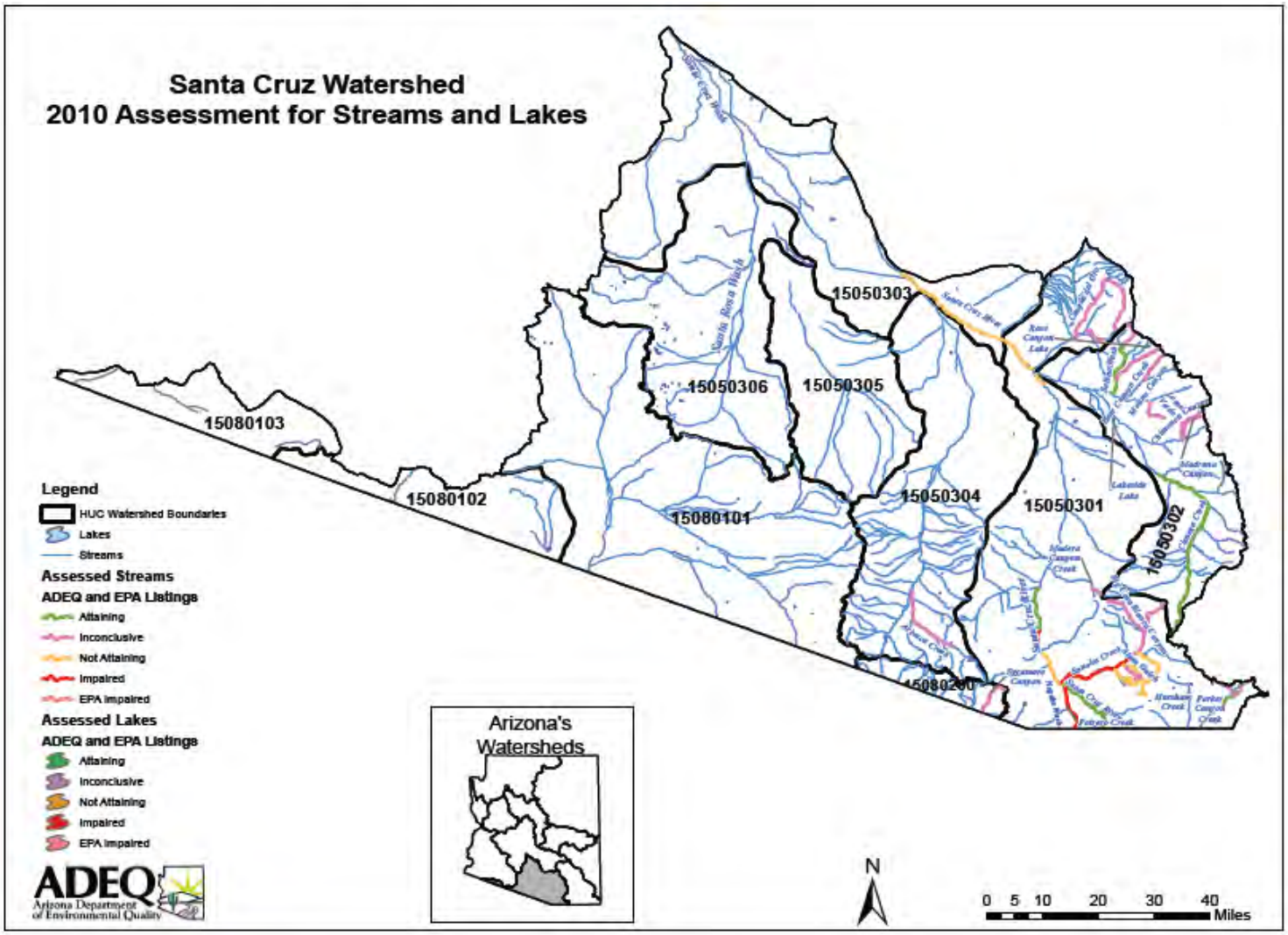

second consists of EPA 303(d) listings.

ADEQ'S 303(d) Impaired Waters

This list contains assessment units that were assessed as impaired by ADEQ during current and previous assessment listing cycles. The year each parameter was listed is located in parentheses after each parameter. The most current listings are in **bold.**

Assessment Unit	Size (acres/miles)	Cause(s) of Impairment	Category*	Status of TMDL Development
Bill Williams Watershed				
Alamo Lake 15030204-0040A	14,150 a	Ammonia (2004), High pH (1996) Low dissolved oxygen (**2006**)	5	Nutrient TMDL to be initiated in 2010.
Bill Williams River From Alamo Lake to Castaneda Wash 15030204-003	35.9 mi	Ammonia, low dissolved oxygen, and high pH (**2006**)	5	Nutrient TMDL to be initiated in 2010.
Santa Maria River From Little Sycamore Creek to Little Shipp Wash 15030203-013	6.8 mi	Mercury[(d)] (**2006**)	5	Alamo Lake TMDL may address mercury loadings affecting this reach. TMDL to be initiated in 2010.
Colorado – Grand Canyon Watershed				
Colorado River From Lake Powell to Paria River 14070006-001	16.3 mi	Selenium[(t)] (**2006**)	5	TMDL to be initiated in 2008.
Colorado River From Parashant Canyon to Diamond Creek 15010002-003	27.6 mi	Selenium[(t)] and suspended sediment (2004)	5	TMDL to be initiated in 2010.
Paria River From Utah border to Colorado River 14070007-123	29.4 mi	Suspended sediment (2004), *E. coli* (**2006**)	5	TMDL to be initiated in 2010.
Virgin River From Beaver Dam Wash to Big Bend Wash 15010010-003	10.1 mi	Selenium[(t)] and suspended sediment (2004)	5	TMDL to be initiated in 2011.
Colorado – Lower Gila Watershed				
Colorado River From Hoover Dam to Lake Mohave 15030101-015	40.4 mi	Selenium[(t)]	5	TMDL to be initiated in 2010.
Colorado River From Main Canal to Mexico border 15030107-001	32.2 mi	Low dissolved oxygen and selenium[(t)] (**2006)**	5	TMDL to be initiated in 2010.
Gila River From Coyote Wash to Fortuna Wash 15070201-003	28.3 mi	Selenium[(t)] and boron[(t)] (2004)	5	TMDL to be initiated in 2009.
Painted Rock Borrow Pit Lake 15070201-1010	185 a	Low dissolved oxygen (1992)	5	The low dissolved oxygen TMDL will be initiated when the lake refills and stabilizes.
Little Colorado Watershed				
Little Colorado River From Silver Creek to Carr Wash 15020002-004	6.1 mi	*E. coli* (2004)	5	To initiate in 2007.
Little Colorado River From Porter Tank Draw to McDonalds Wash 15020008-017	17.4 mi	Copper[(d)] and silver[(d)] (1992), suspended sediment (2004)	5	To initiate in 2007.
Middle Gila Watershed				
Alvord Lake 15060106B-0050	27 a	Ammonia (2004)	5	To initiate in 2007.
Chaparral Park Lake 15060106B-0300	12 a	Low dissolved oxygen and *E. coli* (2004)	5	To initiate in 2007.
Cortez Park Lake 15060106B-0410	2 a	Low dissolved oxygen and high pH (2004)	5	To initiate in 2007.

second consists of EPA 303(d) listings.

Assessment Unit	Size (acres/miles)	Cause(s) of Impairment	Category*	Status of TMDL Development
Gila River From San Pedro River to Mineral Cr. 15050100-008	19.8 mi	Suspended sediment (**2006**)	5	TMDL to be initiated in 2009.
Gila River From Centennial Wash to Gillespie Dam 15070101-008	5.3 mi	Boron[(t)] (1992), selenium[(t)] (2004)	5	To be initiated in 2012.
Hassayampa River From headwaters to Copper Creek 15070103-007A *Also on Not Attaining List	11 mi	Low pH (**2006**)	5	Mine remediation actions should also address low pH.
Mineral Creek From Devil's Canyon to Gila River 15050100-012B	19.6 mi	Copper[(d)] (1992), selenium[(t)] (2004), and low dissolved oxygen (**2006**)	5	Terms of consent decree should negate need for TMDL.
Queen Creek From headwaters to mining discharge 15050100-014A	8.8 mi	Copper (2002)	5	Copper TMDL in progress. To be completed in 2009.
Queen Creek From mining WWTP discharge to Potts Canyon 15050100-014B	5.9 mi	Copper (2004)	5	Copper TMDL in progress. To be completed in 2009.
Salt Watershed				
Apache Lake 15060106A-0070	2,190 a	Low dissolved oxygen (**2006**)	5	Salt River Reservoir nutrient TMDL to be initiated in 2010.
Canyon Lake 15060106A-0250	450 a	Low dissolved oxygen (2004)	5	Salt River Reservoir nutrient TMDL to be initiated in 2010.
Christopher Creek From headwaters to Tonto Creek 15060105-353 *Also on Not Attaining List	8 mi	Phosphorus (**2006**)	5	Nutrient reduction strategies should also address phosphorus.
Five Point Tributary From headwaters to Pinto Creek 15060103-885	2.9 mi	Copper[(d)] (**2006**)	5	Loadings from this tributary should be addressed in the Pinto Creek Phase II TMDL.
Pinto Creek From West Fork Pinto Creek to Roosevelt Lake 15060103-018C *Also on Not Attaining List	17.8 mi	Selenium[(t)] (2004)	5	To be initiated in 2009.
Salt River From Pinal Creek to Roosevelt Lake 15060106A-004	7.5 mi	Suspended sediment (**2006**)	5	To be initiated in 2010.
Salt River From Stewart Mountain Dam to Verde River 15060106A-003	10.1 mi	Low dissolved oxygen (2004)	5	Salt River Reservoir nutrient TMDL to be initiated in 2010.
Tonto Creek From headwaters to 341810/1110414 15060105-013A *Also on Not Attaining List	8.1 mi	Phosphorus (**2006**)	5	Nutrient reduction strategies should reduce phosphorus loadings. TMDL will be initiated in 2010 if needed.
San Pedro Watershed				
Brewery Gulch From headwaters to Mule Gulch 15080301-337	1 mi	Copper[(d)] (2004)	5	Copper loadings from this tributary will be addressed in the Mule Creek copper TMDL.
Mule Gulch From headwaters to above Lavender Pit 15080301-090A	3 mi	Copper[(d)] (1990)	5	Ongoing TMDLs to be completed in 2009 to establish site-specific criteria for copper.

second consists of EPA 303(d) listings.

Assessment Unit	Size (acres/miles)	Cause(s) of Impairment	Category*	Status of TMDL Development
Mule Gulch From above Lavender Pit to Bisbee WWTP discharge 15080301-090B	0.8 miles	Copper[(d)] (1990)	5	Ongoing TMDLs to be completed in 2009 to establish site-specific criteria for copper.
Mule Gulch From Bisbee WWTP discharge to Highway 80 bridge 15080301-090C	3.8 mi	Cadmium[(d)], copper[(d)(t)], low pH, zinc[(d)] (1990)	5	Ongoing TMDLs to be completed in 2009 to establish site-specific criteria for copper.
San Pedro River From Babocomari Creek to Dragoon Wash 15050202-003	17 mi	*E. coli* (2004)	5	Initiated TMDL in 2006. To complete in 2009.
San Pedro River From Dragoon Wash to Tres Alamos Wash 15050202-002	15.5 mi	Nitrate (1990)	5	Ongoing Superfund remediation and monitoring. Will initiate TMDL if WQARF cleanup is not effective.
San Pedro River From Aravaipa Creek to Gila River 15050203-001	14.8 mi	*E. coli* and selenium[(t)] (2004)	5	Initiated TMDL in 2006. To complete in 2009.
Santa Cruz Watershed				
Nogales Wash From Mexico border to Potrero Creek 15050301-011	6.2 mi	Ammonia (2004), chlorine (1996), copper[(d)] (2004), *E. coli* (1998)	5	Necessity of TMDL development will be based on outcome of current international remediation activities on infrastructure in Mexico.
Santa Cruz River From New Mexico border to Nogales Intl WWTP discharge 15050301-010	17 mi	*E. coli* (2004)	5	Will initiate TMDL when stream flow returns. (Current drought.)
Sonoita Creek From 750 feet below Patagonia WWTP discharge to Santa Cruz R. 15050301-013C	18.6 mi	Zinc[(d)] (2004), low dissolved oxygen (**2006**)	5	To initiate in 2006 and complete in 2009.
Upper Gila Watershed				
Blue River From Strayhorse Creek to San Francisco River 15040004-025B	25.4 mi	*E. coli* (**2006**)	5	To initiate in 2009.
Cave Creek From headwaters to South Fork Cave Creek 15040006-852A	7.5 mi	Selenium[(t)] (2004)	5	Initiated TMDL in 2006. To complete in 2009.
Gila River From New Mexico border to Bitter Cr 15040002-004	16.3 mi	*E. coli* and suspended sediment (**2006)**	5	Initiated TMDL in 2006. To complete in 2009.
Gila River From Bonita Creek to Yuma Wash 15040005-022	5.8 mi	*E. coli* (2004)	5	Initiated TMDL in 2006. To complete in 2009.
Gila River From Skully Creek to San Francisco River 15040002-001	15.2 mi	Selenium[(t)] (2004)	5	Initiated TMDL in 2006. To complete in 2009.
San Francisco River From Blue River to Limestone Gulch 15040004-003	18.7 mi	*E. coli* (**2006)**	5	To initiate TMDL in 2009. To complete in 2011.
Verde Watershed				
East Verde River From American Gulch to Verde River 15060203-022C	25.8 mi	Arsenic[(t)] and boron[(t)] (**2006)**	5	To initiate TMDL in 2009. To complete in 2011.
East Verde River From Ellison Creek to American Gulch 15060203-022B	20.3 mi	Selenium[(t)] (2004)	5	To initiate TMDL in 2011.
Oak Creek From headwaters to West Fork Oak Creek	7.4 mi	*E. coli* (**2006**)	5	Initiated Phase II bacteria TMDL in 2004. To complete in 2009.

second consists of EPA 303(d) listings.

Assessment Unit	Size (acres/miles)	Cause(s) of Impairment	Category*	Status of TMDL Development
15060202-019				
Oak Creek From West Fork Oak Creek to tributary at 345709/1114513 15060202-018A	5 mi	*E. coli* (**2006**)	5	Initiated Phase II bacteria TMDL in 2004. To complete in 2009.
Oak Creek From tributary at 345709/1114513 to downstream boundary of Slide Rock State Park 15060202-018B	1 mi	*E. coli* (1992)	5	Initiated Phase II bacteria TMDL in 2004. To complete in 2009.
Oak Creek From Slide Rock State Park to Dry Creek 15060202-018C	20 mi	*E. coli* (**2006**)	5	Initiated Phase II bacteria TMDL in 2004. To complete in 2009.
Oak Creek From Dry Creek to Spring Creek 15060202-017	10 mi	*E. coli* (**2006**)	5	Initiated Phase II bacteria TMDL in 2004. To complete in 2009.
Spring Creek From Coffee Creek to Oak Creek 15060202-022	6.4 mi	*E. coli* (**2006**)	5	To address bacteria loading from this tributary in the Oak Creek Phase II bacteria TMDL.

second consists of EPA 303(d) listings.

EPA'S 303(d) IMPAIRED WATERS

These assessment units were assessed as impaired by EPA and will remain on Arizona's list of impaired waters until EPA determines that they are no longer impaired or a TMDL is approved.

Assessment Unit	Size (acres/miles)	Cause(s) of Impairment	Status of TMDL Development
Bill Williams Watershed			
Alamo Lake 15030204-0040	14,150 a	Mercury in fish tissue (2002)	Initiated in 2004. To complete in 2009.
Boulder Creek From unnamed wash at 34°41'14"/113°03'34" to Wilder Creek 15030202-006B	14.4 mi	Mercury[(d)] (2004)	Initiate in 2011. Complete in 2013.
Boulder Creek From Wilder Creek to Butte Creek 15030202-005A	1.4 mi	Mercury[(d)] (2004)	Initiate in 2011. Complete in 2013.
Burro Creek From Boulder Creek to Black Canyon Creek 15030202-004	17.2 mi	Mercury[(d)] (2004)	Initiate in 2011. Complete in 2013.
Coors Lake 15030202-5000	230 a	Mercury in fish tissue (2004)	Initiate in 2011. Complete in 2013.
Colorado - Grand Canyon Watershed			
There are no listings of this type for this watershed. See other lists.			
Colorado – Lower Gila Watershed			
Painted Rock Borrow Pit Lake 15070201-1010	180 a	DDT metabolites, toxaphene and chlordane in fish tissue (2002)	Initiate in 2009. To complete in 2011.
Little Colorado – San Juan Watershed			
Bear Canyon Lake 15020008-0130	55 a	High pH (2004)	Initiate in 2009.
Lake Mary (lower) 15020015-0890		Mercury in fish tissue (2002)	Initiated in 2003. To complete in 2009.
Lake Mary (upper) 15020015-0900		Mercury in fish tissue (2002)	Initiated in 2003. To complete in 2009.
Little Colorado River From Silver Creek to Carr Wash 15020002-004	6 mi	Suspended sediment (2004)	Initiated in 2007. To complete in 2009.
Long Lake (lower) 15020008-0820		Mercury in fish tissue (2002)	Initiated in 2003. To complete in 2009.
Lyman Lake 15020001-0850	1308 a	Mercury in fish tissue (2002)	Initiated in 2008.
Soldier's Annex Lake 15020008-1430		Mercury in fish tissue (2002)	Initiated in 2003. To complete in 2009.
Soldier's Lake 15020008-1440		Mercury in fish tissue (2002)	Initiated in 2003. To complete in 2009.
Middle Gila Watershed			
Gila River Salt River - Agua Fria River 15070101-015		DDT metabolites, toxaphene and chlordane in fish tissue (2002)	Initiate in 2009. To complete in 2011.
Gila River Agua Fria River - Waterman Wash 15070101-014		DDT metabolites, toxaphene and chlordane in fish tissue (2002)	Initiate in 2009. To complete in 2011.
Gila River Waterman Wash - Hassayampa River 15070101-010		DDT metabolites, toxaphene and chlordane in fish tissue (2002)	Initiate in 2009. To complete in 2011.
Gila River Hassayampa River - Centennial Wash 15070101-009		DDT metabolites, toxaphene and chlordane in fish tissue (2002)	Initiate in 2009. To complete in 2011.

second consists of EPA 303(d) listings.

Assessment Unit	Size (acres/miles)	Cause(s) of Impairment	Status of TMDL Development
Gila River Centennial Wash - Gillespie Dam 15070101-008		DDT metabolites, toxaphene and chlordane in fish tissue (2002)	Initiate in 2009. To complete in 2011.
Gila River Gillespie Dam - Rainbow Wash 15070101-007		DDT metabolites, toxaphene and chlordane in fish tissue (2002)	Initiate in 2009. To complete in 2011.
Gila River Rainbow Wash - Sand Tank 15070101-005		DDT metabolites, toxaphene and chlordane in fish tissue (2002)	Initiate in 2009. To complete in 2011.
Gila River Sand Tank - Painted Rocks Reservoir 15070101-001		DDT metabolites, toxaphene and chlordane in fish tissue (2002)	Initiate in 2009. To complete in 2011.
Hassayampa River Buckeye Canal – Gila River 15070103-001B		DDT metabolites, toxaphene and chlordane in fish tissue (2002)	Initiate in 2009. To complete in 2011.
Painted Rocks Reservoir 15070101-1020A		DDT metabolites, toxaphene and chlordane in fish tissue (2002)	Initiate in 2009. To complete in 2011.
Salt River 23rd Ave WWTP - Gila River 15060106B-001D		DDT metabolites, toxaphene and chlordane in fish tissue (2002)	Initiate in 2009. To complete in 2011.
Salt River Watershed			
Crescent Lake 15060101-0420	157 a	High pH (2002)	Initiate in 2010. To complete in 2012.
Tonto Creek From headwaters to unnamed tributary 15060105-013A	8.1 mi	Low dissolved oxygen (2004)	Initiate in 2010. To complete in 2012.
San Pedro – Willcox Playa – Rio Yaqui Watershed			
Brewery Gulch From headwaters to Mule Gulch 15080301-337	1 mi	Copper[(d)] (2004)	Copper loadings from this tributary will be addressed in the Mule Creek copper TMDL.
Mule Gulch From above Lavender Pit to Bisbee WWTP 15080301-090B	0.8 mi	Low pH (2002)	Initiated in 2000. Complete TMDL after site specific criteria are established (2009).
Santa Cruz – Rio Magdalena – Rio Sonoyta Watershed			
Parker Canyon Lake 15050301-1040	130 a	Mercury in fish tissue (2004)	Initiated in 2006. To complete in 2009.
Rose Canyon Lake 15050302-1260	7 a	Low pH (2004)	Initiate in 2009. To complete in 2011.
Upper Gila Watershed			
Cave Creek From headwaters to South Fork of Cave Creek 15040006-852A	8 mi	Selenium[(t)] (2004)	Initiated in 2006. To complete in 2009.
Gila River From Bonita Creek to Yuma Wash 15040005-022	6 mi	Sediment (2004)	Initiated in 2006. To complete in 2009.
San Francisco River From headwaters to New Mexico Border 15040004-023	13.1 mi	Sediment (2004)	Initiate in 2009. To complete in 2011.
Verde Watershed			
Granite Creek From headwaters to Willow Creek 15060202-059A	13 mi	Low dissolved oxygen (2004)	Initiate in 2010. To complete in 2012.
Watson Lake 15060202-1590	150 a	Nitrogen, low dissolved oxygen, high pH (2004)	Initiate in 2008. To complete in 2010.
Whitehorse Lake 15060202-1630	40 a	Low dissolved oxygen (2004)	Initiate in 2010. To complete in 2012.

second consists of EPA 303(d) listings.

*Assessment Categories:

Category 5 – Impaired surface waters where a Total Maximum Daily Load (TMDL) analysis is required.

Category 4 – At least one designated use is impaired or threatened but development of a TMDL is not needed (at this time). Note that these assessment units are considered impaired under permit requirements. Three subcategories exist in Arizona:

4A – The TMDL has been completed, is being implemented, and appears to be sufficient;
4B – Alternative pollution control requirements or actions are expected to result in the attainment of water quality standards;
4C – The impairment is caused by pollution but not a pollutant; or
4N – Impairment is caused *solely* due to natural conditions (no human contribution).

(Further information is provided in the *Surface Water Assessment Methods and Technical Support* document.)

Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 27)	Lake Category	Aquatic and Wildlife				Human Health				Agricultural	
				A&Wc	A&Ww	A&We	A&Wedw	FBC	PBC	DWS	FC	AgI	AgL
MG	Salt River (EDW)	City of Mesa NW WRF outfall at 33°26'45"/111°56'35" to Tempe Town Lake at 33°26'01"/111°54'55"					A&Wedw		PBC				
MG	Salt River	Below Tempe Town Lake to I-10 bridge				A&We			PBC				
MG	Salt River	I-10 bridge to the 23rd Avenue WWTP at 33°25'03"/112°06'41.6"			A&Ww				PBC		FC		
MG	Salt River (EDW)	23rd Avenue WWTP to confluence with Gila River at 33°22'55"/112°18'21.6"					A&Wedw		PBC		FC	AgI	AgL
MG	Siphon Draw (EDW)	Superstition Mountains WWTP outfall at 33°21'40"/111°33'30" to 6 km downstream at 32°21'01"/111°36'59"					A&Wedw		PBC				
MG	Sycamore Creek	Headwaters to confluence with Tank Canyon at 34°19'32"/111°50'12"		A&Wc				FBC			FC		AgL
MG	Sycamore Creek	Below confluence with Tank Canyon to the Agua Fria River at 34°19'30"/112°04'12"			A&Ww			FBC			FC		AgL
MG	Tempe Town Lake	At Mill Avenue Bridge at 33°26'30"/111°53'30"	Urban		A&Ww			FBC			FC		
MG	Tule Creek	Tributary to the Agua Fria River at 33°57'25"/112°14'13"			A&Ww			FBC			FC		AgL
MG	Turkey Creek	Headwaters to confluence with unnamed tributary at 34°19'28"/112°21'28"		A&Wc				FBC			FC	AgI	AgL
MG	Turkey Creek	Below confluence with unnamed tributary to Poland Creek at 34°14'20"/112°12'54"			A&Ww			FBC			FC	AgI	AgL
MG	Unnamed Wash (EDW)	City of Phoenix Cave Creek WRF outfall at 33°45'20"/112°00'59" to unnamed wash to 0.5 km downstream at 33°35'07"/112°01'12"					A&Wedw		PBC				
MG	Unnamed Wash (EDW)	Gila Bend WWTP outfall to the Gila River at 32°58'13"/112°43'46"					A&Wedw		PBC				
MG	Unnamed Wash (EDW)	Luke Air Force Base WWTP outfall to the Agua Fria River at 33°32'21"/112°19'15"					A&Wedw		PBC				
MG	Unnamed Wash (EDW)	Florence Gardens WWTP outfall at 33°03'49.54"/111°23'13.28" to confluence with Gila River at 33°02'59"/111°23'15"					A&Wedw		PBC				
MG	Unnamed Wash (EDW)	Prescott Valley WWTP outfall to the Agua Fria River at 34°35'16"/112°16'18"					A&Wedw		PBC				
MG	Unnamed Wash (EDW)	Queen Valley Sanitary District WWTP outfall at 33°17'38"/111°18'31" to the confluence with Queen Creek					A&Wedw		PBC				
MG	Wagner Wash (EDW)	Buckeye Festival Ranch WRF outfall at 33°39'14"/112°40'18" to 2 km downstream					A&Wedw		PBC				
MG	Vista Del Camino Park North	Urban Lake; 7700 East Roosevelt Street, Scottsdale at 33°27'33"/111°54'49.3"			A&Ww				PBC		FC		
MG	Walnut Canyon Creek	Tributary to the Gila River at 33°06'47"/111°05'20"			A&Ww			FBC			FC		AgL
MG	Weaver Creek	Tributary to Martinez Creek at 34°03'18"/112°46'48"			A&Ww			FBC			FC		AgL
MG	White Canyon Creek	Tributary to Walnut Canyon Creek at 33°09'25"/111°04'48"			A&Ww			FBC			FC		AgL
SC	Agua Caliente Lake	Urban Lake; 12325 East Roger Road, Tucson	Urban		A&Ww				PBC		FC		
SC	Agua Caliente Wash	Headwaters to Soldier Trail at 32°17'48"/110°42'58.5"			A&Ww			FBC			FC		AgL
SC	Agua Caliente Wash	Below Soldier Trail to Tanque Verde Creek at 32°14'35"/110°47'17"				A&We			PBC				AgL
SC	Aguirre Wash	Those reaches not located on the Tohono O'odham Indian Reservation				A&We			PBC				
SC	Alambre Wash	Tributary to Brawley Wash at 31°57'47"/111°23'28"				A&We			PBC				
SC	Alamo Wash	Tributary to Rillito Creek at 32°16'23"/110°54'18"				A&We			PBC				
SC	Altar Wash	Tributary to Brawley Wash at 31°57'47"/111°23'28"				A&We			PBC				
SC	Alum Gulch	Headwaters to 31°28'20"/110°43'51"				A&We			PBC				AgL
SC	Alum Gulch	From 31°28'20"/110°43'51" to 31°29'17"/110°44'25"			A&Ww			FBC			FC		AgL
SC	Alum Gulch	Below 31°29'17"/110°44'25" to Sonoita Creek at 31°30'58"/110°47'06"				A&We			PBC				AgL
SC	Arivaca Creek	Tributary to Altar Wash at 31°43'01"/111°25'41"			A&Ww			FBC			FC		AgL
SC	Arivaca Lake	31°31'50"/111°15'05"	Igneous		A&Ww			FBC			FC	AgI	AgL
SC	Atterbury Wash	Tributary to Pantano Wash at 32°10'52"/110°48'50"				A&We			PBC				AgL
SC	Bear Grass Tank	31°33'01"/111°11'32"			A&Ww			FBC			FC		AgL
SC	Big Wash	Tributary to Cañada del Oro at 32°24'47"/110°56'28"				A&We			PBC				
SC	Black Wash (EDW)	Pima County WWMD Avra Valley WWTP at 32°09'50"/111°10'49" to confluence with Brawley Wash at 32°15'00"/111°14'34"					A&Wedw		PBC				
SC	Bog Hole Tank	31°28'34"/110°37'07"			A&Ww			FBC			FC		AgL
SC	Brawley Wash	Tributary to Los Robles Wash at 32°21'54"/111°17'31"				A&We			PBC				

Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 27)	Lake Category	Aquatic and Wildlife				Human Health				Agricultural	
				A&Wc	A&Ww	A&We	A&Wedw	FBC	PBC	DWS	FC	AgI	AgL
SC	California Gulch	South of Ruby			A&Ww			FBC			FC		AgL
SC	Cañada del Oro	Headwaters to Highway 89 at 32°24'48"/ 110°56'14"			A&Ww			FBC			FC	AgI	AgL
SC	Cañada del Oro	Below Highway 89 to the Santa Cruz River at 32°19'30"/111°03'47"				A&We			PBC				AgL
SC	Cienega Creek	Headwaters to confluence with Gardner Canyon and Spring Water Canyon at 31°47'38"/ 110°35'17"			A&Ww			FBC			FC		AgL
SC	Cienega Creek (OAW)	From confluence with Gardner Canyon and Spring Water Canyon to USGS gaging station at 32°02'09"/110°40'34" (becomes Pantano Wash below this point)			A&Ww			FBC			FC		AgL
SC	Davidson Canyon	Headwaters to unnamed spring at 31°59'00"/ 110°38'46"				A&We			PBC				AgL
SC	Davidson Canyon (OAW)	Unnamed Spring to confluence with unnamed tributary at 31°59'32.5"/110°38'43.5"			A&Ww			FBC			FC		AgL
SC	Davidson Canyon (OAW)	From confluence with unnamed tributary to unnamed spring at 32°00'54"/110°38'54"				A&We			PBC				AgL
SC	Davidson Canyon (OAW)	From unnamed spring at 32°00'54"/ 110°38'54" to confluence with Cienega Creek at 32°01'05"/110°38'32"			A&Ww			FBC			FC		AgL
SC	Empire Gulch	Headwaters to unnamed spring at 31°47'14"/ 110°38'13"				A&We			PBC				
SC	Empire Gulch	From 31°47'14" / 110°38'13" to31°47'11" / 110°00'39"			A&Ww			FBC			FC		
SC	Empire Gulch	Below 31°47"11" / 110°00'39" to 31°47'18" / 110°36'57"				A&We			PBC				AgL
SC	Empire Gulch	From 31°47'18" / 110°36'57" to confluence with Cienega Creek at 31°48'32"/110°35'20"			A&Ww			FBC			FC		
SC	Flux Canyon	Tributary to Alum Canyon at 31°30'22"/ 110°46'41"				A&We			PBC				AgL
SC	Gardner Canyon Creek	Headwaters to confluence with Sawmill Canyon at 31°42'51"/110°44'43"		A&Wc				FBC			FC		
SC	Gardner Canyon Creek	Below Sawmill Canyon to Cienega Creek at 31°47'38"/110°35'17"			A&Ww			FBC			FC		
SC	Greene Wash	Tributary to the Santa Cruz River at 33°00'54"/111°59'46"				A&We			PBC				
SC	Harshaw Creek	Tributary to Sonoita Creek at 31°32'35"/ 110°44'42"				A&We			PBC				AgL
SC	Hit Tank	32°43'57"/111°03'18"			A&Ww			FBC			FC		AgL
SC	Holden Canyon Creek	Headwaters to Mexico border at 31°23'38"/ 111°15'54" in the Coronado National Forest			A&Ww			FBC			FC		
SC	Huachuca Tank	31°21'11"/110°30'12"			A&Ww			FBC			FC		AgL
SC	Julian Wash	Tributary to the Santa Cruz River at 32°11'20"/110°59'13"				A&We			PBC				
SC	Kennedy Lake	Urban Lake; Mission Road & Ajo Road, Tucson at 32°10'48.5"/111°00'27"	Urban		A&Ww				PBC		FC		
SC	Lakeside Lake	Urban Lake; 8300 East Stella Road, Tucson at 32°11'10.5"/110°49'00"	Urban		A&Ww				PBC		FC		
SC	Lemmon Canyon Creek	Headwaters to confluence with unnamed tributary at 32°23'47"/110°47'46"		A&Wc				FBC			FC		
SC	Lemmon Canyon Creek	Below unnamed tributary to Sabino Canyon Creek at 32°23'02"/110°47'28"			A&Ww			FBC			FC		
SC	Los Robles Wash	Tributary to the Santa Cruz River at 32°32'13"/111°23'53"				A&We			PBC				
SC	Madera Canyon Creek	Headwaters to confluence with unnamed tributary at 31°43'42"/110°52'50"		A&Wc				FBC			FC		AgL
SC	Madera Canyon Creek	Below unnamed tributary to the Santa Cruz River at 31°46'55"/111°00'58"			A&Ww			FBC			FC		AgL
SC	Mattie Canyon	Tributary to Cienega Creek at 31°51'31"/ 110°34'25"			A&Ww			FBC			FC		AgL
SC	Nogales Wash	Tributary to Potrero Creek at 31°24'07"/ 110°57'11"			A&Ww				PBC				
SC	Oak Tree Canyon	Tributary to Cienega Creek at 31°48'43"/ 110°35'24"				A&We			PBC				
SC	Palisade Canyon Creek	Headwaters to confluence with unnamed tributary at 32°22'34"/110°45'35"		A&Wc				FBC			FC		
SC	Palisade Canyon Creek	Below unnamed tributary to Sabino Canyon Creek at 32°21'54"/110°46'23"			A&Ww			FBC			FC		
SC	Pantano Wash	Tributary to Tanque Verde Creek at 32°16'23"/110°54'18"				A&We			PBC				
SC	Paradise Lake	32°44'18"/111°40'42"	Urban		A&Ww				PBC			AgI	
SC	Parker Canyon Creek	Headwaters to confluence with unnamed tributary at 31°24'17"/110°28'44.5"		A&Wc				FBC			FC		
SC	Parker Canyon Creek	Below unnamed tributary to Mexico border at 31°19'59"/110°33'58"			A&Ww			FBC			FC		
SC	Parker Canyon Lake	31°25'35"/110°27'15"	Deep	A&Wc				FBC			FC	AgI	AgL
SC	Patagonia Lake	31°29'30"/110°52'00"	Deep		A&Ww			FBC			FC	AgI	AgL

Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 27)	Lake Category	Aquatic and Wildlife				Human Health				Agricultural	
				A&Wc	A&Ww	A&We	A&Wedw	FBC	PBC	DWS	FC	AgI	AgL
SC	Peña Blanca Lake	31°24'12"/111°05'04"	Igneous		A&Ww			FBC			FC	AgI	AgL
SC	Potrero Creek	Headwaters to Interstate 19 at 31°23'24"/ 110°57'30"				A&We			PBC				AgL
SC	Potrero Creek	Below Interstate 19 to Santa Cruz River at 31°27'07"/110°57'40"			A&Ww			FBC			FC		AgL
SC	Puertocito Wash	Tributary to Altar Wash at 31°43'01"/ 111°25'41"				A&We			PBC				
SC	Quitobaquito Spring	(Pond and Springs) 31°56'39"/113°01'06"			A&Ww			FBC			FC		AgL
SC	Redrock Canyon Creek	Tributary to Harshaw Creek at 31°32'35"/ 110°44'13"			A&Ww			FBC			FC		
SC	Rillito Creek	Tributary to the Santa Cruz River at 32°18'50"/111°03'18"				A&We			PBC				AgL
SC	Romero Canyon Creek	Headwaters to confluence with unnamed tributary at 32°24'30"/110°50'35"		A&Wc				FBC			FC		
SC	Romero Canyon Creek	Below unnamed tributary to Sutherland Wash at 32°25'52"/110°53'56"			A&Ww			FBC			FC		
SC	Rose Canyon Creek	Tributary to Rose Canyon Lake at 32°23'10"/ 110°43'01"		A&Wc				FBC			FC		
SC	Rose Canyon Lake	32°23'13"/110°42'38"	Igneous	A&Wc				FBC			FC		AgL
SC	Ruby Lakes	Near the town of Ruby at 31°26'28.5"/ 111°14'19"	Igneous		A&Ww			FBC			FC		AgL
SC	Sabino Canyon Creek	Headwaters to confluence with unnamed tributary at 32°23'28"/110°47'00"		A&Wc				FBC		DWS	FC	AgI	
SC	Sabino Canyon Creek	Below unnamed tributary to Tanque Verde River at 32°15'40"/110°49'30"			A&Ww			FBC		DWS	FC	AgI	
SC	Salero Ranch Tank	31°35'42"/110°53'22"			A&Ww			FBC			FC		AgL
SC	Santa Cruz River	Headwaters to the International Boundary at 31°19'58"/110°35'48"			A&Ww			FBC			FC	AgI	AgL
SC	Santa Cruz River	International Boundary to the Nogales International WWTP outfall at 31°27'24"/ 110°58'05"			A&Ww			FBC		DWS	FC	AgI	AgL
SC	Santa Cruz River (EDW)	Nogales International WWTP outfall to the Tubac Bridge at 31°36'25"/110°02'00"					A&Wedw		PBC				AgL
SC	Santa Cruz River	The Tubac Bridge to Roger Road WWTP outfall				A&We			PBC				AgL
SC	Santa Cruz River (EDW)	Roger Road WWTP outfall to Baumgartner Road at 32°35'37"/111°28'08"					A&Wedw		PBC				
SC	Santa Cruz Wash	Baumgartner Road to the Ak Chin Indian Reservation				A&We			PBC				AgL
SC	Santa Cruz Wash, West Branch	Tributary to the Santa Cruz Wash at 32°12'07"/110°59'20"				A&We			PBC				AgL
SC	Santa Cruz Wash, North Branch	Tributary to the Santa Cruz Wash at 32°55'55"/111°53'10"				A&We			PBC				
SC	Santa Cruz Wash, North Branch (EDW)	City of Casa Grande WRF outfall at 32°54'57"/111°47'13" to 1 km downstream at 32°54'49"/111°47'48"					A&Wedw		PBC				
SC	Santa Rosa Wash	Below Tohono O'odham Indian Reservation to the Ak Chin Indian Reservation				A&We			PBC				
SC	Santa Rosa Wash (EDW)	Palo Verde Utilities WWTP outfall at 33°04'20"/112°01'47" to the Gila River Indian Reservation					A&Wedw		PBC				
SC	Soldier Lake	32°25'34"/110°44'41"		A&Wc				FBC			FC		AgL
SC	Sonoita Creek	Headwaters to the Town of Patagonia WWTP outfall at 31°32'15"/110°45'30"				A&We			PBC				AgL
SC	Sonoita Creek (EDW)	Town of Patagonia WWTP outfall to permanent groundwater upwelling point approximately 1600 feet downstream of outfall					A&Wedw		PBC				AgL
SC	Sonoita Creek	Below 1600 feet downstream of Town of Patagonia WWTP outfall to the Santa Cruz River at 31°29'43"/110°58'37"			A&Ww			FBC			FC	AgI	AgL
SC	Split Tank	31°28'15"/111°05'15"			A&Ww			FBC			FC		AgL
SC	Sutherland Wash	Tributary to Cañada del Oro at 32°25'05"/ 110°55'26"			A&Ww			FBC			FC		
SC	Sycamore Canyon	From 32°21'36" / 110°45'21" to Sycamore Reservoir			A&Ww			FBC			FC		
SC	Sycamore Canyon Creek	Headwaters to the U.S./Mexico border at 31°22'48"/111°13'19"			A&Ww			FBC			FC		AgL
SC	Sycamore Reservoir	32°20'57"/110°44'52"		A&Wc				FBC			FC		AgL
SC	Tanque Verde Creek	Headwaters to Houghton Road at 32°14'13"/ 110°46'04"			A&Ww			FBC			FC		AgL
SC	Tanque Verde Creek	Below Houghton Road to Rillito Creek at 32°16'08"/110°52'30"				A&We			PBC				AgL
SC	The Lake Tank	32°54'14"/111°04'14"			A&Ww			FBC			FC		AgL
SC	Three R Canyon	Headwaters to 31°28'35"/110°46'19"				A&We			PBC				AgL

Watershed	Surface Waters	Segment Description and Location (Latitude and Longitudes are in NAD 27)	Lake Category	Aquatic and Wildlife				Human Health				Agricultural	
				A&Wc	A&Ww	A&We	A&Wedw	FBC	PBC	DWS	FC	AgI	AgL
SC	Three R Canyon	From 31°28'35"/110°46'19" to 31°28'27"/110°47'12"			A&Ww			FBC			FC		AgL
SC	Three R Canyon	From 31°28'27"/110°47'12" to Sonoita Creek at 31°29'56"/110°48'54"				A&We			PBC				AgL
SC	Tinaja Wash	Headwaters to the Santa Cruz River at 31°32'58.4"/111°02'45.7"				A&We			PBC				AgL
SC	Unnamed Wash (EDW)	Oracle Sanitary District WWTP outfall at 32°36'54"/110°48'02" to 5 km downstream					A&Wedw		PBC				
SC	Unnamed Wash	5 km downstream of the Oracle Sanitary District WWTP outfall				A&We			PBC				
SC	Unnamed Wash (EDW)	Arizona City Sanitary District WWTP outfall at 32°45'47"/111°44'20" to confluence with Santa Cruz Wash at 35°45'45"/111°46'43"					A&Wedw		PBC				
SC	Unnamed Wash (EDW)	Saddlebrook WWTP outfall at 32°32'00"/110°52'59" to confluence with Cañada del Oro at 32°30'20"/110°52'27"					A&Wedw		PBC				
SC	Vekol Wash	Those reaches not located on the Ak-Chin, Tohono O'odham and Gila River Indian Reservations				A&We			PBC				
SC	Wakefield Canyon	Headwaters to confluence with unnamed tributary 31°52'47"/110°26'25"		A&Wc				FBC			FC		AgL
SC	Wakefield Canyon	Below confluence with unnamed tributary to Cienega Creek at 31°52'47.5"/110°26'25"			A&Ww			FBC			FC		AgL
SC	Wild Burro Canyon	Headwaters to confluence with unnamed tributary at 32°28'36"/111°05'18"			A&Ww			FBC			FC		AgL
SC	Wild Burro Canyon	Below confluence with unnamed tributary to Santa Cruz River at 32°28'34"/111°05'15.5"				A&We			PBC				AgL
SC	Williams Ranch Tanks	31°55'15"/110°25'30"			A&Ww			FBC			FC		AgL
SP	Abbot Canyon	Headwaters to confluence with Whitewater Draw at 31°33'32"/109°48'39.6"			A&Ww			FBC			FC		AgL
SP	Aravaipa Creek	Headwaters to confluence with Stowe Gulch at 32°52'10"/110°22'00"			A&Ww			FBC			FC		AgL
SP	Aravaipa Creek (OAW)	Stowe Gulch confluence to downstream boundary of Aravaipa Canyon Wilderness Area at 32°54'23"/110°33'40"			A&Ww			FBC			FC		AgL
SP	Aravaipa Creek	Below downstream boundary of Aravaipa Canyon Wilderness Area to the San Pedro River at 32°50'20"/110°42'50"			A&Ww			FBC			FC		AgL
SP	Ash Creek	Chiricahua Mountains, near Whitewater Draw at 31°50'28"/109°40'01.2"			A&Ww			FBC			FC	AgI	AgL
SP	Babocomari River	Tributary to the San Pedro River at 31°43'19"/110°11'35"			A&Ww			FBC			FC		AgL
SP	Bass Canyon Creek	Headwaters to confluence with unnamed tributary at 32°26'06"/110°13'18"		A&Wc				FBC			FC		AgL
SP	Bass Canyon Creek	Below confluence with unnamed tributary to Hot Springs Canyon Creek at 32°20'53"/110°15'14"			A&Ww			FBC			FC		AgL
SP	Bass Canyon Tank	32°24'00"/110°13'00"			A&Ww			FBC			FC		AgL
SP	Bear Creek	Headwaters to U.S./Mexico border at 31°19'59"/110°22'58.5"			A&Ww			FBC			FC		AgL
SP	Big Creek	Tributary to Pitchfork Canyon at 32°35'24"/109°57'07"		A&Wc				FBC			FC		AgL
SP	Blacktail Pond	Fort Huachuca Military Reservation at 31°24'13"/110°17'21"			A&Ww			FBC			FC		
SP	Blackwater Draw	Headwaters to the U.S./Mexico border at 31°20'02"/109°15'36" in the San Bernardino Valley			A&Ww			FBC			FC		AgL
SP	Booger Canyon Creek	Tributary to Aravaipa Creek at 32°54'54"/110°29'35"			A&Ww			FBC			FC		AgL
SP	Buck Canyon	Headwaters to Buck Creek Tank at 31°33'06"/109°52'43"			A&Ww			FBC			FC		AgL
SP	Buck Canyon	Below Buck Creek Tank to Dry Creek at 31°31'08"/109°18'25"				A&We			PBC				AgL
SP	Buehman Canyon Creek (OAW)	Headwaters to confluence with unnamed tributary at 32°24'31.5"/110°32'08"			A&Ww			FBC			FC		AgL
SP	Buehman Canyon Creek	Below confluence with unnamed tributary at 32°25'41"/110°29'53"			A&Ww			FBC			FC		AgL
SP	Bull Tank	32°31'15"/110°12'45"			A&Ww			FBC			FC		AgL
SP	Bullock Canyon	Tributary to Buehman Canyon at 32°23'00"/110°33'04"			A&Ww			FBC			FC		AgL
SP	Carr Canyon Creek	Headwaters to confluence with unnamed tributary at 31°27'00"/110°15'45"		A&Wc				FBC			FC		AgL
SP	Carr Canyon Creek	Below confluence with unnamed tributary to the San Pedro River at 31°30'32"/110°07'37"			A&Ww			FBC			FC		AgL
SP	Copper Creek	Headwaters to confluence with Prospect Canyon at 32°44'48"/110°30'18"			A&Ww			FBC			FC		AgL
SP	Copper Creek	Below confluence with Prospect Canyon to the San Pedro River at 32°41'17"/110°36'43"				A&We			PBC				AgL

OUTSTANDING ARIZONA WATERS (OAWs)

A.A.C. R18-11-112(G)

1. West Fork of the Little Colorado River, from its headwaters at 33°55'02"/109°33'30" to Government Springs at 33°59'33"/109°27'54" (approximately 9.1 river miles);
2. Oak Creek, from its headwaters at 35°01'30"/111°44'12" to its confluence with the Verde River at 34°40'41"/111°56'30 (approximately 50.3 river miles);
3. West Fork of Oak Creek, from its headwaters at 35°02'44"/111°54'48" to its confluence with Oak Creek at 34°59'14"/111°44'46" (approximately 15.8 river miles);
4. Peeples Canyon Creek, from its headwaters at 34°23'57"/113°19'45" to its confluence with the Santa Maria River at 34°20'36"/113°15'12" (approximately 8.1 river miles);
5. Burro Creek, from its headwaters at 34°52'46.5"/113°05'13.5" to its confluence with Boulder Creek at 34°374.5"/113°18'36" (approximately 29.5 miles);
6. Francis Creek, from its headwaters at 34°54'38"/113°20'30" to its confluence with Burro Creek at 34°44'29"/113°14'37" (approximately 22.9 river miles);
7. Bonita Creek, from its boundary of the San Carlos Indian Reservation at 33°03'08"/109°33'41" to its confluence with the Gila River at 32°53'36"/109°28'43" (approximately 14.7 river miles);
8. Cienega Creek, from its confluence with Gardner Canyon and Spring Water Canyon at 31°47'38.5"/110°35'21.5" to the USGS gaging station at 32°02'09"/110°40'34" (approximately 28.3 river miles);
9. Aravaipa Creek, from its confluence with Stowe Gulch at 32°52'10"/110°22'03" to the downstream boundary of the Aravaipa Canyon Wilderness Area at 32°54'23"/110°33'42" (approximately 15.5 river miles);
10. Cave Creek, from its headwaters at 31°50'30"/109°17'04.5" to the Coronado National Forest boundary at 31°54'38"/109°08'40" (approximately 10.4 river miles);
11. South Fork of Cave Creek, from its headwaters at 31°50'20"/109°16'33" to its confluence with Cave Creek at 31°53'04"/109°10'30" (approximately 8.6 river miles);
12. Buehman Canyon Creek, from its headwaters at 32°52'0.5"/110°39'54.5" to its confluence with unnamed tributary at 32°24'31.5"/110°32'08" (approximately 9.8 river miles);
13. Lee Valley Creek, from its headwaters at 33°55'49"/109°31'34" to its confluence with Lee Valley Reservoir at 33°56'28"/109°30'15.5" (approximately 1.6 river miles);
14. Bear Wallow Creek, from its headwaters at 33°35'54"/109°26'54.5" to the boundary of the San Carlos Indian Reservation at 33°37'52"/109°29'44" (approximately 4.25 river miles);
15. North Fork of Bear Wallow Creek, from its headwaters at 33°34'47.5"/109°21'59.5" to its confluence with Bear Wallow Creek at 33°35'54"/109°26'54.5" (approximately 3.8 river miles);
16. South Fork of Bear Wallow Creek, from its headwaters at 33°34'38.5"/109°23'58" to its confluence with Bear Wallow Creek at 33°35'54"/109°26'54.5" (approximately 3.8 river miles);
17. Snake Creek, from its headwaters at 33°37'21.5"/109°26'11" to its confluence with the Black River at 33°40'31.5"/109°28'58.5" (approximately 6.2 river miles);
18. Hay Creek, from its headwaters at 33°51'00"/109°28'48" to its confluence with the West Fork of the Black River at 33°48'30"/109°25'19" (approximately 5.5 river miles);
19. Stinky Creek, from the White Mountain Apache Indian Reservation boundary at 33°52'36.5"/109°29'45" to its confluence with the West Fork of the Black River at 33°51'21.5"/109°27'09.5" (approximately 3.0 river miles);
20. KP Creek, from its headwaters at 33°34'03"/109°21'19" to its confluence with the Blue River at 33°31'44"/109°12'04.5" (approximately 12.7 river miles);
21. Davidson Canyon, from the unnamed spring at 31°59'00"/110°38'46" to its confluence with Cienega Creek; and
22. Fossil Creek, from its headwaters at the confluence of Sandrock and Calf Pen Canyons above Fossil Springs at 34°26'48.7"/111°32'25" to its confluence with the Verde River at 34°18'21.8"/111°40'31.6" (approximately 17.2 river miles).

Summary of applicable Pima County Codes and Environmental Policies

PIMA COUNTY CODE	Title
P.C.C. 07.21.025	General Prohibitions
P.C.C. 07.33	Removal of Rubbish, Trash, Weeds, Filth and Debris
P.C.C. 07.45	Environmental Nuisances
P.C.C. 10.44.030.N	Construction in County Right-of-Way: Liability and work rules
P.C.C. 16.04.030.D	Floodplain Management; Contents and purpose of provisions
P.C.C. 16.28	Erosion Hazard Areas and Building Setbacks
P.C.C. 16.30	Watercourse & Riparian Habitat Protection & Mitigation Requirements
P.C.C. 16.42	Sediment and Erosion Control
P.C.C. 16.48	Runoff Detention Systems
P.C.C. 18.07.080	Modification of Development Standards in Riparian Areas
P.C.C. 18.09.040	Cluster Development Option
P.C.C. 18.09.100	Conservation Subdivision
P.C.C. 18.61	Hillside Development Overlay Zone
P.C.C. 18.67	Buffer Overlay Zone
P.C.C. 18.72	Native Plant Preservation
P.C.C. 18.73	Landscaping, Buffering and Screening Standards
P.C.C. 18.75	Off-Street Parking and Loading Standards
P.C.C. 18.78	Gateway Overlay Zone
P.C.C. 18.81	Grading Standards

POLICIES	Title
Environmental Policy No. (F 50.1)	Pima County Environmental Policy (PCEP)
Technical Policy TECH-026	Interim Regulated Riparian Habitat Mitigation Standards and Implementation Regional Flood Control Guidelines - Supplement to Title 16 - Chapter 16.30 of the Watercourses and District Technical Riparian Habitat Protection and Mitigation Requirements, Ordinance No. 2005- FC2, January 2010 Draft.

DELEGATED AUTHORITY	
	Delegation Agreement with ADEQ
A.R.S. § 49-801	Management of Used Oil (801, 803, 811,812)
40 CFR § 279.1	Standards for Management of Used Oil

7.21.025 - General prohibitions.

A. No person shall cause or allow sewage or industrial waste to flow into waters of the county or upon or under any lands within the county in any manner determined by the environmental officer to be detrimental to the environment or the health, safety or welfare of any person.

B. No person shall cause pollution by the improper design, construction, quality or materials, use, location or maintenance of any on-site disposal system.

C. No person shall use a cesspool for the disposal of sewage or industrial waste.

D. An on-site disposal system is prohibited where the environmental officer determines in writing that, due to topography or soil or subsurface conditions, the on-site disposal system:

1. May cause pollution of the groundwater supply; or
2. Cannot be expected to function satisfactorily.

E. No person shall begin construction of any on-site disposal system or make any change or repair of a failed system which may affect capacity, quality, flow or operational performance of an on-site disposal system prior to receiving a certificate of approval to construct from the environmental officer. If a certificate of approval to construct is required pursuant to this chapter, the certificate shall be obtained before any building permit will be issued for any structure utilizing the on-site disposal system.

F. No person shall operate an on-site disposal system that:

1. Does not meet all operational and maintenance requirements set forth in this title;
2. Does not conform to any construction plans submitted to and approved by the department or any other governmental regulatory agency;
3. Does not conform to all design criteria required by law at the time the on-site disposal system is constructed, replaced, reconstructed or significantly altered or repaired.

(Ord. 1991-137 § 13 (part), 1991)

Chapter 7.33 - REMOVAL OF RUBBISH, TRASH, WEEDS, FILTH AND DEBRIS*

Sections:

7.33.010 - Definitions.

A. In this chapter, unless the context otherwise requires:

1. "Contiguous areas" means sidewalks, streets, trails and alleys dedicated and open to the public that are contiguous to property.
2. "Occupant" means an occupant of property, but does not include any corporation or association operating or maintaining rights-of-way for and on behalf of the United States of America, either under contract or under federal law.
3. "Property" means real property including buildings, grounds and lots.
4. "Weed" includes any species of plant that is listed in Arizona Administrative Code R3-4-244, including Pennisetum ciliare (L.) Link-Buffelgrass

(Ord. No. 2008-117, § 1 (part), 2009)

7.33.020 - Removal.

The owner, lessee or occupant of property shall remove all rubbish, trash, weeds, filth, debris, and dilapidated buildings that constitute a hazard to public health and safety from the property and contiguous areas.

(Ord. No. 2008-117, § 1 (part), 2009)

7.33.023 - Calculation of time.

A. Unless otherwise specified, time periods for actions involving an opportunity to correct for weeds shall be calculated as follows:

1. For time periods of fourteen days or less, only business days are included in calculating the total number of days;
2. For time periods of longer than fourteen days, each calendar day is included in calculating the total number of days;
3. For all time periods, the date on which the time period begins to run is excluded from the calculation of the total number of days.

B. Calculation of time for purposes of actions involving the opportunity to correct shall begin upon the signature date on the certified receipt or date hand delivered by the county.

C. Calculation of time for situations where the certified mail sent by Pima County is:

1. Refused by the recipient, the time shall begin on the date of refusal; or
2. Unclaimed, the time shall begin fifteen calendar days from the postal service's first attempt to deliver.

(Ord. No. 2008-117, § 1 (part), 2009)

7.33.025 - Opportunity to correct for weeds.

A. Upon reasonable belief that a violation of Section 7.33.020 has occurred with respect to weeds listed in Arizona Administrative Code R3-4-244, the county shall provide the owner, lessee or occupant an opportunity to correct the violation. The opportunity to correct shall be sent by certified mail or hand delivered.

B. The notice of opportunity to correct shall include the following:

1. A requirement that the owner, lessee, or occupant notify the county, in writing, that they have received notice within thirty days of receipt of the notice.
2. A requirement that the owner, lessee or occupant develop a written abatement plan to be submitted to the county within sixty days of receipt of the notice. The abatement plan shall include:
   a. A map identifying the property and extent of weed infestation
   b. A description and schedule of management and eradication techniques to be implemented
   c. An estimated cost of implementing the abatement plan. The basis for the cost estimate shall be specified.
   d. A statement of any other legal or physical factors or characteristics affecting the plan

C. The owner, lessee or occupant shall provide additional information as requested by the county to address deficiencies in a submitted abatement plan. The owner, lessee or occupant shall be allowed an opportunity to amend the abatement plan before denial. Failure to provide adequate information or respond to the county's request for information within the time frame specified by the county may result in the county issuing a notice of abatement.

D. The county shall approve or deny the abatement plan. If denied, the county shall state in writing the reasons for denial. Denial of an abatement plan may result in the county issuing a notice of abatement.

E. Pima County's decisions concerning a notice of opportunity to correct or an abatement plan are not appealable.

(Ord. No. 2008-117, § 1 (part), 2009)

7.33.030 - Notice of abatement.

A. A county department director, or designee, may issue a notice of abatement when:

1. The director reasonably believes that a violation Section 7.33.020 has occurred; or,
2. An acceptable abatement plan required by Section 7.33.030 is not submitted; or,
3. An approved abatement plan is not complied with.

B. The notice shall include the following:
   1. A compliance date, which is not less than thirty calendar days from the notice date, to remove all rubbish, trash, weeds, filth, debris, and dilapidated buildings that constitute a hazard to public health and safety from the property and contiguous areas;
   2. The estimated cost to the county for the removal if the owner, occupant or lessee, does not comply. The basis for the cost estimate shall be included in the notice.

C. Within ten business days of the date of the notice of abatement the owner, occupant or lessee may appeal the notice to the board of supervisors. All appeals shall be in writing and shall specify the grounds for appeal. The appeal shall be filed with the clerk of the board. The date of mailing of the appeal shall be the date of filing. The clerk of the board shall set a date to hear the appeal after receipt of a timely notice of appeal. Written notice of the hearing shall be provided to the appropriate county departments and to the owner and any lessee or occupant who is appealing. The board of supervisors' decision is final.

D. The notice of abatement shall be personally served or sent by certified mail to the owner and any lessee or occupant at their last known address, or at the address on file in the county treasurer's office to which the most recent property tax bill was mailed. If the owner of the property does not reside on the property, a duplicate notice shall be mailed to the owner at the owner's last known address. The notice of abatement should be mailed to any known lienholder.

E. The county may provide a copy of the notice of abatement to the local fire authority.

(Ord. No. 2008-117, § 1 (part), 2009)

7.33.040 - Abatement by county.

A. If the owner, lessee, or occupant fails to remove or abate all rubbish, trash, weeds, filth, debris, and dilapidated buildings by the compliance date determined in the Notice of Abatement, or the Board of Supervisors' final appeal hearing decision, the county may remove, abate, enjoin or cause the removal or abatement of the rubbish, trash, weeds, filth, debris, and dilapidated buildings by the county's employees, agents or contractors at the expense of the owner, lessee or occupant.

B. The county shall provide advance written notice identifying the scheduled date of abatement to the owner, lessee or occupant at their last known address, or at the address on file in the County Treasurer's office to which the most recent property tax bill was mailed. The notice shall be sent by certified mail or hand delivered. If the owner of the property does not reside on the property, a duplicate notice shall be mailed to the owner at the owner's last known address.

(Ord. No. 2008-117, § 1 (part), 2009)

7.33.050 - Assessments.

A. After the county, its employees, agents or contractors have removed, abated, or caused the removal or abatement of the rubbish, trash, weeds, filth, debris, and dilapidated buildings pursuant to this chapter, the county shall issue a written order of assessment. The order of assessment shall include the following:
   1. The date of the assessment;
   2. The common address, legal description and tax parcel number of the property; and
   3. The amount of the assessment, including a detailed itemized list of costs for removal including all incidental costs, legal costs, and costs for any additional inspections;

B. The owner may request an informal review of the detailed itemized cost with the county department issuing the assessment. The request shall be made in writing, and received by the county department director within ten business days of the date of the order of assessment. Unless the director and owner agree otherwise, the informal review shall take place within twenty calendar days after the director's receipt of the request. The director shall arrange the date and location of the informal review with the owner at least ten business days before the informal review. The director shall review whether itemized costs including all incidental costs, legal costs, and additional inspection costs are correct and reasonable for the tasks involved. The director may adjust the costs based upon the informal review. The director shall mail his or her decision on the informal review to the owner within ten business days after the informal review date.

C. The owner, lessee, lienholder or occupant shall have ten business days from receipt of the order of assessment or the receipt of the director's written decision on an informal review to appeal the assessment to the board of supervisors as provided in subsection E of this section.

D. The order of assessment shall be recorded in the office of the county recorder when the time to appeal expires, if the owner agrees to the amount or on final decision on an appeal by the board of supervisors.

E. Within ten business days of the order of assessment or the decision on an informal review the owner, occupant, lienholder or lessee may appeal the amount of the assessment levied by the county to the board of supervisors. All appeals shall be in writing and shall specify the grounds for appeal. Only the amount of the assessment may be appealed. The board of supervisors shall not hear any appeals of violations upon appeal of an order of assessment. The appeal shall be filed with the clerk of the board. The date of mailing of the appeal shall be the date of filing. The clerk of the board shall set a date to hear the appeal after receipt of a timely notice of appeal. Written notice of the hearing shall be provided to the appropriate county departments and to the owner, lessee, lienholder or occupant who is appealing. The board of supervisors shall determine whether the assessment was made in accordance with the provisions of this chapter and state statute and whether the amount actually represents the costs incurred by the county. The board of supervisors shall issue its determination in writing upholding or modifying the amount of the assessment. The board of supervisors' decision is final.

F. The assessment shall be paid to the county treasurer and any delinquent assessments shall bear interest at the legal rate from the date of delinquency. Interest will accrue at the rate stated in A.R.S. Section 44-1201(A).

G. A prior assessment under this chapter is not a bar to a subsequent assessment or assessments under this chapter, and any number of liens pursuant to this chapter may be enforced in the same action.

H. Assessments that are imposed under this chapter run against the property until they are paid and are due and payable in equal annual installments as follows:

1. Assessments of less than five hundred dollars shall be paid within one year after the assessment is recorded.
2. Assessments of five hundred dollars or more but less than one thousand dollars shall be paid within two years after the assessment is recorded.
3. Assessments of one thousand dollars or more but less than five thousand dollars shall be paid within three years after the assessment is recorded.

4. Assessments of five thousand dollars or more but less than ten thousand dollars shall be paid within six years after the assessment is recorded.

5. Assessments of ten thousand dollars or more shall be paid within ten years after the assessment is recorded.

I. The county shall maintain a list of all delinquent assessments made pursuant to this chapter.

J. All assessments sixty calendar days delinquent shall be forwarded to the county administrator or his designee for review. If the county administrator or his designee determines that the value of the assessment and interest, together with the value of all other liens having priority over the assessment does not exceed the value of the property, the county attorney may commence legal action to foreclose the lien and request the superior court to order the property sold and the proceeds used to pay off all liens having priority and the assessment and interest.

K. If the county administrator or his designee determines that the value of assessment and interest, together with the value of all other liens having priority over the assessment exceeds the value of the property, legal action to foreclose the lien need not be commenced.

L. On payment in full of an assessment and interest, the county shall record a notice of satisfaction of assessment in the office of the county recorder. The notice shall contain the name of the owner of the property, the tax parcel number, the common street address and the legal description of the subject property. The notice shall refer to the date of the order of assessment and the docket and page number in the office of the county recorder where such order is recorded.

(Ord. No. 2008-117, § 1 (part), 2009)

7.33.055 - Cost recovery for injunction.

If the county obtains an injunction to compel compliance with Section 7.33.020, the court shall award attorneys' fees and all costs associated with securing or enforcing the injunction, including costs of additional inspections, to the county. An award of fees and costs by a court is not appealable to the board of supervisors. The court's order awarding fees and costs may be recorded as an assessment and may be collected in the manner provided for in this section and A.R.S. Section 11-268(E).

(Ord. No. 2008-117, § 1 (part), 2009)

7.33.060 - Penalties.

A. In addition to the abatement and assessment procedure or injunction provided for by this chapter, any person, firm or corporation that places any rubbish, trash, filth or debris upon any private or public property located in the unincorporated areas of the county not owned or under the control of the person, firm or corporation is guilty of a Class 1 misdemeanor.

B. The provisions of this section are cumulative and do not bar any other enforcement action provided for by law.

(Ord. No. 2008-117, § 1 (part), 2009)

7.33.070 - Applicability.

The provisions of this chapter apply to all unincorporated areas of the county.

(Ord. No. 2008-117, § 1 (part), 2009)

Chapter 7.45 - ENVIRONMENTAL NUISANCES

Sections:

7.45.010 - Purpose—Delegation.

A. The purpose of this chapter is to preserve and secure the health, safety and welfare of the public by prohibiting the maintenance of and requiring the abatement of environmental nuisances and by providing for the recovery of public moneys expended to regulate, mitigate and abrogate environmental nuisances.

B. This chapter shall be effective when, and to the extent which, the state delegates task and enforcement responsibility for environmental nuisances, A.R.S. Chapter 1, Article 3 (A.R.S. Section 49-141 et seq.), to the department.

(Ord. 1996-49 § 46, 1996: Ord. 1991-137 § 20 (part), 1991)

7.45.020 - Environmental nuisances.

The director may take action under this section to abate environmental nuisances. As used in this section, an environmental nuisance is the creation or maintenance of a condition in the soil, air or water that causes harm to the public health or the environment and that is not otherwise subject to regulation under A.R.S. Title 49. Subject to this limitation, the following conditions may constitute environmental nuisances:

1. A condition or place in populous areas which constitutes a breeding place for flies, rodents, mosquitoes and other insects which are capable of carrying and transmitting disease-causing organisms to any person;
2. A place, condition or building which is controlled or operated by any governmental agency, state or local, and which is not maintained in a sanitary condition;
3. Sewage, human excreta, wastewater, garbage or other organic wastes deposited, stored, discharged or exposed so as to be a potential instrument or medium in the transmission of disease to or between any person or persons;
4. A vehicle or container which is used in the transportation of garbage or human excreta and which is defective and allows leakage or spillage of contents;

5. The maintenance of an overflowing septic tank or cesspool, the contents of which may be accessible to flies;
6. The pollution or contamination of any domestic waters;
7. The use of the contents of privies, cesspools, or septic tanks or the use of sewage or sewage plant effluents for fertilizing or irrigation purposes for crops or gardens except by specific approval of the Arizona Department of Health Services or the Arizona Department of Environmental Quality;
8. The storage, collection, transportation, disposal and reclamation of garbage, trash, rubbish, manure and other objectionable wastes other than as provided and authorized by law;
9. Water, other than used by irrigation, industrial or similar systems for nonpotable purposes, which is sold to the public, distributed to the public or used in production, processing, storing, handling, servicing or transportation of food and drink and which is unwholesome, poisonous or contains deleterious or foreign substances or filth or disease-causing substances or organisms.

(Ord. 1996-49 § 47, 1996: Ord. 1991-137 § 20 (part), 1991)

7.45.030 - Prohibition.

No person shall maintain an environmental nuisance.

(Ord. 1991-137 § 20 (part), 1991)

7.45.040 - Order of abatement.

A. If the director determines that an environmental nuisance exists, the director may pursue enforcement in accordance with A.R.S. Sections 49-142, 49-143 and 49-261.

B. An order of abatement issued pursuant to this section may be appealed pursuant to A.R.S. Section 49-261.

(Ord. 1996-49 § 48, 1996: Ord. 1991-137 § 20 (part), 1991)

7.45.050 - Site security.

Reserved.

7.45.060 - Abatement by the department.

A. If an owner or occupant fails or refuses to comply with the terms of an order of abatement issued pursuant to Section 7.45.040 or if after reasonable attempts the director is unable to serve the order, the director may cause the environmental nuisance to be abated at the department's expense.

B. If an environmental nuisance is abated pursuant to subsection A of this section, the director shall be entitled to recover the reasonable costs of abatement incurred in accordance with any terms of the order that have been upheld after all rights to appeal or judicial review have been exhausted or waived.

(Ord. 1996-49 § 50, 1996: Ord. 1991-137 § 20 (part), 19910

7.45.070 - Right of inspection.

A.

B. The department may, if the director deems it necessary, enter any land, building, or structure for the purpose of examining, destroying, removing or preventing an environmental nuisance.

If the department is refused entrance under subsection A, the director may file a complaint of the refusal under oath to a justice of the peace. The justice of the peace shall issue a warrant directing the sheriff or other peace officer accompanied by and under the direction of at least one employee of the department to examine, destroy, remove or prevent, between the hours of sunrise and sunset, the environmental nuisance.

(Ord. 1991-137 § 20 (part), 1991)

7.45.080 - Standard for abatement of petroleum contaminated soil.

If an environmental nuisance described in Section 7.45.010 consists in whole or in part of soil contaminated by petroleum, the nuisance shall be remediated in accordance with A.R.S. Section 49-152.

(Ord. 1996-49 § 51, 1996: Ord. 1991-137 § 20 (part), 1991)

Chapter 16.28 - EROSION HAZARD AREAS AND BUILDING SETBACKS

Sections:

16.28.010 - Building setback requirements.

In erosion hazard areas where watercourses are subject to flow-related erosion hazards, building setbacks are required from the primary channel or channels as set forth in Sections 16.28.020 and 16.28.030.

(Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999 FC-1 § 1 (part), 1999; Ord. 1988 FC-2 Art. 12 (part), 1988)

16.28.020 - Setbacks near major watercourses.

For major watercourses with base flood peak discharges of two thousand cfs or greater, the following building setbacks shall be required where approved bank protection is not provided:

A. Along the following major natural watercourses, where no unusual conditions exist, a minimum (default) building setback shall be provided at the time of the development, unless an alternative setback is determined by an engineering analysis, prepared by an Arizona registered civil engineer, based on ADWR standards or other applicable engineering methods, which establishes acceptable safe limits for the development and is approved by the chief engineer.

B. Along natural channels where no unusual conditions exist (such as a pronounced channel curvature), the default building setback for erosion hazard protection shall be:

1. A distance of five hundred feet along the Santa Cruz River, Rillito Creek, Pantano Wash, Tanque Verde Creek, San Pedro River, and the Canada del Oro Wash;
2. A distance of two hundred fifty feet along major watercourses with base flood peak discharges greater than ten thousand cfs;
3. A distance of one hundred feet along all major watercourses with base flood peak discharges of ten thousand cfs or less, but more than five thousand cfs; and
4. A distance of seventy-five feet along all other major watercourses with base flood peak discharges of five thousand cfs or less, but more than or equal to two thousand cfs.

C. Along major natural watercourses where unusual conditions do exist that may increase or decrease the required erosion hazard setback, building setbacks shall be established on a case-by-case basis by the chief engineer using the standard adopted

by the ADWR or other applicable engineering methods which establish safe limits for the development. Unusual conditions include but are not limited to historical meandering of the watercourse, large excavation pits, poorly defined or poorly consolidated banks, natural channel armoring, proximity to stabilized structures such as bridges or rock outcrops, and changes in the direction, amount and velocity of the flow of waters within the watercourse.

D. When determining building setback requirements, the chief engineer shall consider the danger to life and property due to existing flood heights or velocities and historical channel meandering.

E. For constructed channels, structural bank protection to prevent erosion is required for major watercourses with base flood peak discharges of more than two thousand cfs unless a written waiver of the requirement is granted by the chief engineer. A waiver of the requirement for structural bank protection may be granted based on an acceptable engineering study, which has been prepared and sealed by an Arizona registered civil engineer, demonstrating an appropriate building setback for an earthen channel, based on soil and natural flow conditions.

(Ord. 2010-FC5 § 1 (part), 2010; Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999 FC-1 § 1 (part), 1999; Ord. 1988 FC-2 Art. 12 (A), 1988).

16.28.030 - Setbacks from minor washes.

A. For minor natural washes with a base flood peak discharge of less than two thousand cfs, the following building setbacks shall be required:

1. A distance of fifty feet for watercourses with base flood peak discharges of less than two thousand cfs, but more than five hundred cfs;
2. A distance of twenty-five feet for watercourses with base flood peak discharges of five hundred cfs to one hundred cfs;
3. Alternative safe limits for erosion setbacks approved in writing by the chief engineer based on an acceptable engineering study prepared and sealed by an Arizona registered civil engineer. However, at no time shall a setback of less than twenty-five feet from the top of channel bank be permitted in order to provide for reasonable access and stability of nearby structure foundations, except as allowed pursuant to subsection B of this section.

B. Along minor natural washes where unusual conditions exist, building setbacks shall be established on a case-by-case basis by the chief engineer, using ADWR standards or other applicable engineering methods or an acceptable engineering study is prepared and sealed by an Arizona registered civil engineer and approved by the chief engineer. When determining building setback requirements, the chief engineer shall consider danger to life and property due to existing flood heights or velocities and historical channel meandering. Unusual conditions include but are not limited to historical meandering of the watercourse, large excavation pits, poorly defined or poorly consolidated banks, natural channel armoring, proximity to stabilized structures such as bridges or rock outcrops, and changes in the direction, amount, and velocity of flow of the waters in the watercourse.

C. For constructed channels, channel banks are required to be stabilized to prevent erosion along minor watercourses with base flood peak discharges of less than two thousand cfs, but greater than five hundred cfs. Stabilization is required unless a waiver to the requirement is granted by the chief engineer based on an engineering study prepared and sealed by an Arizona registered civil engineer which demonstrates an appropriate building setback for an earthen channel, based on soil and natural flow conditions. For constructed channels with a

base flood peak discharge of less than five hundred cfs, channel stabilization may be required based on engineering analysis and assessment of soil conditions and flow velocities.

(Ord. 2010-FC5 § 1 (part), 2010; Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999-FC-1 §§ 1 (part) 1999; Ord. 1988-FC2 Art. 12 (B), 1988)

16.28.040 - Appeals and variances.

A. Appeals. Any applicant disputing a written finding of the chief engineer denying a permit or delineating an erosion hazard setback may appeal to the board as provided in Chapter 16.56 of this title.

B. Variances. Any property owner requesting a variance from the requirements of this title shall submit a request for a variance to the board through the chief engineer as provided in Chapter 16.56 of this title.

(Ord. 2010-FC5 § 1 (part), 2010; Ord. 2005 FC-2 § 2 (part), 2005)

Chapter 16.30 - WATERCOURSE AND RIPARIAN HABITAT PROTECTION AND MITIGATION REQUIREMENTS

Sections:

16.30.010 - Purpose.

The purpose of this chapter is to promote stable flow and sediment transport conditions, preserve natural floodplain functions, and provide watercourse management by preserving and/or enhancing riparian vegetation and habitat along watercourses and floodplains and to:

A. Promote benefits provided by riparian habitat resources, including but not limited to, groundwater recharge, natural erosion control and protection of surface-water quality.

B. Ensure the long-term stability of natural floodplains and survival of the full spectrum of plants and animals that are indigenous to the county by:

1. Assuring riparian habitat acreage and existing or natural functional values are not diminishing during development;
2. Promoting continuity of riparian habitat along watercourses;
3. Providing land-use guidance for avoiding, minimizing and mitigating damage to important riparian areas; and
4. Providing ecological sound transmission between riparian habitat and developed areas.

C. Promote an economic benefit to the county by providing aesthetic, recreation and wildlife values of riparian habitat for the enjoyment of residents and visitors.

(Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999 FC-1 § 1 (part), 1999; Ord. 1994 FC-2 (part), 1994: Ord. 1988 FC-2 Art. 10 (A), 1988)

16.30.020 - Description.

For purposes of this chapter, "a regulated riparian habitat" is defined by the riparian classification maps adopted by the board. These habitats are generally characterized by vegetation that is different in plant species composition or an increase in the size and/or density of vegetation as compared to upland areas and occur in association with regulatory floodplains through which waters flow at least periodically, as well as any spring, cienega, lake, watercourse, river, stream,

creek, wash, arroyo, or other body of water. These communities represent a continuum of plant species' response to available moisture, and can be subdivided into hydroriparian, mesoriparian, and xeroriparian classifications as well as identification as important riparian areas providing ecological connectivity and biological corridors.

A. Hydroriparian. Riparian habitats generally associated with perennial watercourses and/or springs. Plant communities are dominated by obligate or preferential wetland plant species such as willow and cottonwood.

B. Mesoriparian. Riparian habitats generally associated with perennial or intermittent watercourses or shallow groundwater. Plant communities may be dominated by species that are also found in drier habitats (e.g., mesquite); but contain some preferential riparian plant species such as ash or netleaf hackberry.

C. Xeroriparian. Riparian habitats generally associated with an ephemeral water supply. These communities typically contain plant species also found in upland habitats; however, these plants are typically larger and/or occur at higher densities than adjacent uplands. Xeroriparian habitat is further divided into four subclasses for Class A, B, C, and D habitat as defined in the mitigation standards approved by the Board as maintained by the floodplain administrator. Mitigation in xeroriparian habitat is to be determined based at least on total vegetative volume (TVV) as provided within the mitigation standards as adopted by the board as well as replacement of other lost riparian habitat functions necessary to sustain riparian habitat.

D. Important Riparian Areas. Important riparian areas occur along the major river systems and provide critical watershed and water resources management functions as well as providing a framework for landscape linkages and biological corridors. Important riparian areas are valued for their higher water availability, vegetation density, and biological productivity, compared to adjacent uplands. Important riparian areas are essential for floodplain management and every effort should be made to protect, restore, and enhance the structure and functions of these areas including hydrological, geomorphological, and biological functions.

(Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999 FC-1 § 1 (part), 1999; Ord. 1994 FC-2 (part), 1994: Ord. 1988 FC-2 Art. 10 (B), 1988)

16.30.030 - Applicability.

This chapter shall apply to all properties within unincorporated Pima County that contain riparian habitat, as delineated on riparian habitat maps adopted by the board. This chapter shall apply to the county, the district, and to all parties acting on behalf of the district and county. This chapter shall apply to individual building permits, including grading permits issued by the county, and land development permits associated with subdivisions and development plans. All requirements of this chapter shall apply to regulated hydroriparian, mesoriparian, important riparian areas, and, xeroriparian Classes A, B, C, and D habitat.

(Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999 FC-1 § 1 (part), 1999; Ord. 1998 FC-1 Section 3, 1998; Ord. 1994 FC-2 (part), 1994: Ord. 1988 FC-2 Art. 10 (C), 1988)

16.30.040 - Permits.

As part of the floodplain use permit process for property subject to provisions of this chapter, the proposed development will be reviewed for impacts to mapped riparian habitat whenever more than 1/3 of an acre of a property's regulated riparian habitat is disturbed. In order to avoid such

alteration of the riparian habitat or to mitigate disturbance on the subject property, an applicant may apply to the county for a modification of the development standards under Section 18.07.080 of the County Zoning Code. Such modifications may include reduction in building setbacks or approval to provide onsite mitigation and enhancement in natural areas.

A. Submittals. Permit applications shall include:
   1. Evidence that no reasonably practicable alternative exists to the proposed impact on mapped habitat and evidence that the impact has been minimized to the maximum extent practicable.
   2. A map delineating riparian habitat boundaries and clearly delineating areas of proposed disturbance to mapped riparian habitat;
   3. A description of the vegetation that will be disturbed;
   4. A habitat mitigation plan for disturbance to mapped riparian habitat areas as provided in 16.30.050 when required by the district; and
   5. Such additional supporting information as the district determines to be necessary to carry out review under this chapter.

B. Permit Conditions. Conditions may be placed on the permit that, to the extent reasonably practicable, require preservation of, or mitigate the impact on, riparian habitat. If mitigation is required, compliance with an approved habitat mitigation plan shall be made a condition of the permit.

(Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999 FC-1 § 1 (part), 1999; Ord. 1998 FC-1, Section 3, 1998; Ord. 1994 FC-2 (part), 1994; Ord. 1988 FC-2 Art. 10 (D), 1988)

16.30.050 - Mitigation.

A. Mitigation Plan. If an applicant demonstrates to the satisfaction of the district that alteration of regulated riparian habitat areas cannot reasonably be avoided, a mitigation plan shall be submitted to the district for approval when more than 1/3 of an acre of regulated riparian habitat is disturbed.

B. Mitigation plans shall be approved by the board for disturbance of hydroriparian, mesoriparian and/or important riparian areas whenever more than 5% of a property's regulated riparian habitat is disturbed, except for those disturbances that are less than 1/3 acre.

C. Mitigation Plan Requirement. The mitigation plan shall delineate all mitigation measures to be taken by the owner and shall include a schedule of completion. The mitigation plan shall be consistent with any riparian habitat mitigation standards adopted by the board, and shall be prepared in accordance with best available scientific or management practices. Mitigation may be incorporated into measures taken to satisfy other requirements of the district and county. Where appropriate, the mitigation plan shall at a minimum provide for:
   1. Construction methods that identify and protect riparian habitat that is to be left unaltered;
   2. Selective clearing or other habitat manipulation;
   3. Replacement of affected vegetation with appropriate plant species in ratios that will result in simulation of the pre-alteration vegetation within 5 years;
   4. Irrigation with passive water harvesting, where possible, or installation and maintenance of irrigation methods until plantings are established;
   5. Periodic monitoring of mitigation features;
   6. Maintenance and replacement of damaged plantings; and

7. Posting a performance bond or financial assurances.

D. Mitigation banking, or other alternative mitigation measures as approved by the board. At the request of the property owner, and with board approval, the mitigation plan requirement under this chapter may be waived by contributing funds to an account established and administered by the district for the purpose of offsetting damage to riparian habitat.

(Ord. 2005 FC-2 § 2 (part), 2005)

16.30.060 - Review process.

The application and any proposed mitigation plan shall be evaluated by their effectiveness in:

A. Avoiding the impact;

B. Minimizing the impact;

C. Rectifying the impact;

D. Reducing or eliminating the impact over time; and

E. Compensating for the impact.

(Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999-FC-1 § 1 (part) 1999; Ord. 1994 FC-2 (part), 1994: Ord. 1988 FC-2 Art. 10 (F), 1988)

16.30.070 - Appeals and variances.

A. Appeals. Any applicant disputing a written finding of the chief engineer may appeal to the board as provided in Chapter 16.56 of this title.

B. Variance. Any property owner requesting a variance from the requirements of this title shall submit a request for a variance to the board through the chief engineer as provided in Chapter 16.56 of this title.

(Ord. 2010-FC5 § 1 (part), 2010; Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999 FC-1 § 1 (part), 1999; Ord. 1994 FC-2 (part), 1994: Ord. 1988 FC-2 Art. 10 (G), 1988)

16.30.080 - Riparian classification maps.

A. Riparian classification maps shall be adopted by resolution of the board and shall detail on a parcel level, the general location of riparian habitat and important riparian areas subject to the requirements of this chapter.

B. Where a question arises as to the location of any regulated riparian habitat or important riparian area, the question shall be decided by the chief engineer consistent with riparian habitat standards adopted by the board. The chief engineer's decision shall be final, except as provided for in Chapter 16.56 of this title. Any person contesting the location of any boundary shall be given a reasonable opportunity to present technical evidence, if so desired.

C. The riparian classification maps shall be kept on file and made available to the public in the offices of the district.

(Ord. 2010-FC5 § 1 (part), 2010; Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999 FC-1 § 1 (part), 1999; Ord. 1995 FC-1 §§ 1, 2, 1995)

Chapter 16.42 - SEDIMENT AND EROSION CONTROL

Sections:

16.42.010 - Application of chapter provisions.

A. Within a regulatory floodplain or sheet flood zone, any activity that may have an effect on the flow of storm water runoff, flood water, storm water quality, or that may effect the erosion or the sediment carrying capacity of a watercourse, is subject to this title and to the provisions of this chapter.

B. Prior to receiving a floodplain use permit, both temporary and permanent measures for sediment and erosion control must be clearly delineated on plans or other written documents. The Grading Design Manual, prepared pursuant to Chapter 18.81 of the zoning code, and other design standards, as approved by the chief engineer, shall be used to prepare these plans or documents.

(Ord. 2010-FC5 § 1 (part), 2010; Ord. 2005 FC-2 § 2 (part), 2005)

16.42.020 - Soil investigations.

The chief engineer may require appropriate soil investigation reports for the purpose of determining the erosive properties of areas or lands to be graded or disturbed, and which may create sediment deposition or erosion in any floodplain or floodprone area regulated by this title.

(Ord. 2005 FC-2 § 2 (part), 2005)

16.42.030 - Grading or alteration of watercourses.

A. Any grading or the alteration of any watercourse regulated by this title shall be performed in a controlled manner in order to minimize the loss of soil through erosion from rainfall or storm water flow. Prior to granting a floodplain use permit for work in any floodplain, methods to control erosion and sedimentation during construction and post-construction must be demonstrated to be appropriate to the satisfaction of the chief engineer.

B. Due to the rapidly changing hydraulic characteristics of watercourses within the county, and the effects that sand and gravel mining and other excavations have on these hydraulic characteristics, floodplain use permits for grading and construction shall only be issued for a limited time period, not to exceed one year, subject to annual renewal and upon review by the chief engineer.

C. In addition to those conditions provided for elsewhere, floodplain use permits for excavations may impose conditions regarding the area and location in which excavations are allowed, the

maximum amount of material to be excavated, mining mitigation plans and other reasonable restraints on the methods of operating including time restraints.

D. The chief engineer may require hydrologic, hydraulic, geomorphic, and riparian habitat analyses that address both existing and future conditions, as well as the impacts that could potentially occur during grading and construction.

(Ord. 2010-FC5 § 1 (part), 2010; Ord. 2005 FC-2 § 2 (part), 2005)

16.42.040 - Grading or alterations in sheet flooding areas.

A. Grading or any alteration that diverts, obstructs, or retards the flow of flood waters is subject to the provision of this title and shall require permits as specified within this title.

B. Slope protection and terracing to control surface drainage, erosion, and debris on cut or fill slopes may be required in accordance with the floodplain use permit and the adopted Grading Design Manual.

C. In accordance with the Grading Design Manual, erosion control shall be implemented and maintained in order to prevent erosion of slopes and cleared, brushed, grubbed, or graded areas.

(Ord. 2005 FC-2 § 2 (part), 2005)

Chapter 16.48 - RUNOFF DETENTION SYSTEMS

Sections:

16.48.010 - Runoff reduction required when—Specifications adopted.

Any new development shall provide some method of peak or volumetric runoff reduction, unless fees in lieu of detention are proposed pursuant to Section 16.48.040 and approved by the chief engineer. The amount of reduction is stipulated within the Storm Water Detention/Retention Manual. The peak runoff reduction should be provided through detention of storm water and storm water harvesting for supplemental irrigation, where possible. The Storm Water Detention/Retention Manual, approved for use by the board, or other applicable engineering standards for storm water control and/or storm water harvesting that is approved by the chief engineer shall be used for design. Any revisions to the Storm Water Retention/Detention Manual will be reviewed by the flood control district advisory committee, prior to adoption by the board as updated design standards for detention/retention.

(Ord. 2010-FC5 § 1 (part), 2010; Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999 FC-1 § 1 (part), 1999; Ord. 1988 FC-2 Art. 14 (part), 1988)

16.48.020 - Balanced and critical basins—Development conditions.

A. Balanced and critical drainage basins are watersheds that have been identified by the chief engineer as unsuitable for increased development because of the high probability of increased flooding with development and the potential for flooding of existing improvements or property. Critical and balanced basins may be developed further only upon the incorporation of adequate detention systems or flood control facilities, as reviewed and approved by the chief engineer. Drainage basins that have not previously been identified as unsuitable for additional urban development, shall be considered to be balanced basins, but upon study by the chief engineer, may be subject to the critical basin provisions of this chapter. These detention systems or flood control facilities shall be incorporated into any and all future basin-development proposals, regardless of size or land-use density, unless fees in lieu of detention are proposed pursuant to Section 16.48.040 and approved by the chief engineer.

B. Retention of storm water is not allowed without demonstrating that, over the long-term, the ponded waters will not cause a nuisance or a vector problem. In lieu of threshold retention, county requirements will be based upon additional detention requirements based on the guidance provided in the Storm Water Detention/Retention Manual.

(Ord. 2010-FC5 § 1 (part), 2010; Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999 FC-1 § 1 (part), 1999; Ord. 1988 FC-2 Art. 14 (A), 1988).

16.48.030 - Structural flood control measures.

A. Structural flood control measures may be proposed in conjunction with, or in place of, detention/retention systems if it can be clearly demonstrated that such measures will not alter the water and sediment equilibrium and storm water quality of the affected watercourse, and will mitigate environmental impacts.

B. Appropriate structural flood control measures, such as channelization to a logical conclusion downstream of the proposed development and/or improvements to existing offsite flood control systems within the applicable drainage or stream reach, shall be completed in accordance with plans reviewed and approved by the chief engineer.

(Ord. 2010-FC5 § 1 (part), 2010; Ord. 1999 FC-1 § 1 (part), 1999; Ord. 1988 FC-2 Art. 14 (B), 1988)

16.48.040 - Fee in lieu of detention requirements.

A fee may be collected by the county in lieu of a detention/retention system when it can be clearly demonstrated that detention at the site does not provide offsite flood relief due to the parcel size, location within the drainage basin, or other factors. The fees collected will be used to construct public flood control improvements that will mitigate the potential damage of flood waters originating from the property contributing the fees. In balanced and critical drainage basins, and where development is less than two units to the acre, use of a fee system will be encouraged in lieu of a detention system in order to preserve the natural drainage patterns. As appropriate, alternate post-construction best management practices for storm water quality will be required. The fee shall be equivalent to the cost of a detention system that would otherwise be constructed for the development to mitigate increased storm water runoff created by the proposed development.

(Ord. 2010-FC5 § 1 (part), 2010; Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999 FC-1 § 1 (part), 1999; Ord. 1988 FC-2 Art. 14 (C), 1988)

16.48.050 - Maps of balanced and critical basins.

The chief engineer shall prepare, and retain for public inspection and use, an official map designating balanced and critical drainage basins within the county.

(Ord. 2005 FC-2 § 2 (part), 2005; Ord. 1999 FC-1 § 1 (part), 1999; Ord. 1988 FC-2 Art. 14 (D), 1988)

18.07.080 - Modification of development standards in riparian areas.

A. Applicability. Whenever development requires a floodplain use permit to promote the protection of riparian habitat as defined by the Pima County flood control district pursuant to Chapter 16.30 of the Pima County Code, development standards may be modified in accordance with this section. Any such modification shall be consistent with the purpose of Chapter 16.30, and may only be allowed:

1. When a mitigation plan required by Chapter 16.30 would be unnecessary if the modification is granted; or
2. When development within the riparian habitat area cannot reasonably be avoided and an application for modification is submitted as part of a mitigation plan submitted pursuant to Chapter 16.30

B. Types of Modifications. Development standards may be modified consistent with section A above, including but not limited to the following:

1. Setbacks. The zoning inspector may modify any minimum setback or distance between structures. The modification shall be processed pursuant to the procedures and standards of Section 18.07.070, except that no fee shall be charged.
2. Subdivision Lot Size. Minimum lot size requirements for subdivision lots in the CR-I, CR-2, CR-3, GR-1 and CMH-1 zones may be modified at the time of plat approval in order to promote the protection of riparian habitat and undisturbed natural areas. Additional undisturbed natural area may be included in the preserved area if at least one acre or ten percent of the total preserved area is riparian habitat as defined in Chapter 16.30 of the Pima County Code. Such lot size modifications are available only where an area of riparian habitat and undisturbed natural areas will be owned by a homeowners association and preserved from alteration by recorded covenants running with the land enforceable by the county. The sum total of square feet by which the area of each lot in the subdivision is reduced shall not exceed the square feet of the preserved area. No more lots shall be allowed by the reduction than would be allowed without the reduction.
    a. Minimum lot size requirements for lots in a CR-1 or GR-1 subdivision may be reduced from thirty-six thousand square feet to eighteen thousand square feet;
    b. Minimum lot size requirements for lots in a CR-2 subdivision may be reduced from sixteen thousand square feet to twelve thousand square feet;
    c. Minimum lot size requirements for lots in a CR-3 or CMH-1 subdivision may be reduced from eight thousand square feet to seven thousand square feet.
3. Off-Street Parking. The subdivision and development review committee may modify off-street parking requirements, pursuant to Chapter 18.75, when it is demonstrated that such adjustment will not result in a danger to persons or property or in increased traffic.
4. Bufferyard Requirements. The number of trees in bufferyards required pursuant to Chapter 18.73 may be reduced up to fifty percent when riparian habitat in an area regulated by the Pima County flood control district pursuant to Chapter 16.30 is preserved. The number of required bufferyard trees may be reduced at the rate of one bufferyard tree per three hundred square feet of preserved riparian vegetation. Measurement of the riparian vegetation shall be done by aerial canopy coverage or an alternative means acceptable to the county. The measurement of the square footage

of the riparian vegetation shall be rounded up or down to a whole number using three hundred as the base number. (For example, four hundred thirty square feet shall equal one tree, while seven hundred eighty square feet shall equal three trees.)

5. An owner or a developer may request additional development standard modifications which promote the purposes of Chapter 16.30. Any such request shall be reviewed subject to statutory or ordinance provisions, including the appeals process or a development agreement approved by the board.

(Ord. 1998-52 § 1, 1998; Ord. 1994-113 § 1, 1994)

18.09.040 - Cluster development option.

A. Purpose.

1. The purpose of the cluster development option is to provide:
   a. Site planning and unity of design in harmony with the natural features and constraints of specific sites, and particularly on sites possessing unique or severe topographic or hydrologic features;
   b. Protection of natural, historic and man-made elements of scenic, environmental or cultural significance;
   c. Design innovation;
   d. Flexibility in the siting of structures and roadways;
   e. More cost-effective development due to decreased grading and more efficient servicing of the development with utilities, roads and other essential services;
   f. Additional open space for private or community purposes;
   g. Protection of existing neighborhoods through the provision of open space buffers and the location of structures;
   h. A preferred planning tool for the development of land within the buffer overlay zone, Chapter 18.67

B. Definitions. Certain terms used in this section shall be defined, for purposes of this section only, as follows:

1. Cluster grouping: A designed contexture of residential units and their accessory facilities which may be used as a repetitive motif to form a cluster pattern. Each cluster grouping shall be separated by landscaped areas or natural open space to form the larger cluster development.
2. Cluster open space: Open space, either natural or functional, provided to compensate for lot size reductions from minimum lot area requirements in the applicable zone.
3. Common open space: Land area within a development, not individually owned or dedicated for public use, which is designed and intended for the common use or enjoyment of the residents of the development. Common open space may be either natural open space or functional open space, as defined in this section.
4. Contexture: A body or structure made by the interweaving or putting together of parts where the arrangements and union of the constituent parts form a characteristic, unified whole.
5. Public open space: Open space owned by a public agency, such as Pima County, and maintained by it for the use and enjoyment of the general public.
6. Review committee: Review committee means design review committee (refer to Section 18.99.030, DRC).

C. Scope: The cluster development option is permitted in the following zones:

1. RH: Refer also to Section 18.13.070 (RH rural homestead zone);
2. GR-1: Refer also to Section 18.14.060 (GR-1 rural residential zone);
3. ML: Refer also to Section 18.15.060 (ML mount lemmon zone);
4. SR: Refer also to Section 18.17.060 (SR Suburban Ranch Zone);
5. SR-2: Refer also to Section 18.18.050 (SR-2 suburban ranch estate zone);
6. SH: Refer also to Section 18.19.050 (SH suburban homestead zone);

7. CR-1: Refer also to Section 18.21.050 (CR-1 single residence zone);
8. CR-2: Refer also to Section 18.23.050 (CR-2 single residence zone);
9. CR-3: Refer also to 18.25.050 (CR-3 single residence zone);
10. CMH-1: Refer also to Section 18.33.060 (CMH-1 county manufactured and mobile home—1 zone).

D. Permitted uses and accessory structures.
1. Uses:
   a. Residential subdivided lots and units, as permitted in the zones listed in Section 18.09.040(C),
   b. Cluster open space, as defined in Section 18.09.040(B);
2. Accessory buildings and structures:
   a. In individual, subdivided lots:
      1) Permitted coverage: Ten percent of lot area,
      2) Maximum height: Fifteen feet,
      3) Minimum setback: In accordance with applicable county building codes (Title 15),
   b. In functional open space areas:
      1) Permitted coverage: Three percent of required area,
      2) Maximum height: Thirty-four feet,
      3) Minimum setback: In accordance with applicable county building codes (Title 15).

E. Development standards.
1. Minimum site area: None, all permitted zones.
2. Average site area per dwelling unit (maximum density factor):
   a. ML/CR-1/GR-1: Thirty-six thousand square feet;
   b. SR: One hundred forty-four thousand square feet;
   c. SH: Eighteen thousand square feet;
   d. SR-2: Seventy-two thousand square feet;
   e. CR-2: Sixteen thousand square feet;
   f. CMH-1: Eight thousand square feet;
   g. CR-3: Eight thousand square feet;
   h. RH: One hundred eighty thousand square feet.
3. Minimum lot area per dwelling unit (minimum allowable lot size):
   a. Sewered lots: No minimum lot size, as may be approved by the review committee.
4. Minimum setback requirements: As may be approved by the review committee, consistent with the requirements of major streets and scenic routes plan and the Arizona Department of Health Services.
5. Maximum height: Thirty-four feet.
6. Minimum distance between buildings: As may be approved by the review committee.
7. Minimum distance between cluster groupings: As may be approved by the review committee.
8. Cluster groupings:
   a.

All residential units may be common-walled or detached, but shall not be formed into cluster groupings that exceed six common-walled residential units each, unless approved by the review committee.

b. Cluster groupings shall be separated by cluster open space to provide spatial definition between groupings, and shall be as approved by the review committee.

9. Utilities:

a. Utilities and sewers shall be located within the developed portion of the site wherever possible to reduce the future impact of maintenance and repair activities on cluster open space.

b. Public sewers shall be designed such that manholes are located in paved areas which have paved access, unless otherwise approved by the director of the wastewater management department.

10. Excess cut and fill material shall be disposed of in accordance with Chapter 18.81 (Grading).

11. Roads: All streets and highways must have horizontal and vertical alignment consistent with an approved design speed, and roadway geometrics consistent with an approved design vehicle, as specified in criteria available from the department of transportation and flood control district.

12. Landscaping: In accordance with Chapter 18.73 (Landscaping Standards).

13. Buffers:

a. Buffers shall be provided to protect existing neighborhoods by mitigating the adverse impacts of sound, visibility and traffic.

b. Buffers may include landscaping, walls, fences, pathways, drainageways, natural features, existing vegetation and natural open space (refer to Chapter 18.73, Landscaping Standards).

14. Exterior lighting: Any lights used to illuminate parking spaces, drives and recreation facilities shall be in accordance with the county outdoor lighting code (Title 15).

F. Open space requirements.

1. Cluster open space area and ratio requirements: Cluster open space shall comprise at least thirty percent of the gross site area and be equal to or greater than the difference between the total area of the residential lots to be subdivided and the required average site area per dwelling unit total in the applicable zone.

2. Cluster open space ownership and control shall be only:

a. As part of an individual, private lot with recorded covenants running with the land;

b. By a homeowner's association, as specified in this section; or

c. By Pima County, as legally dedicated to and approved by the board of supervisors.

3. Third-party ownership of cluster open space shall not be allowed. The association may enter into contracts or lease agreements to allow third-party operation of uses permitted within functional open space, as defined in this option.

4. Natural open space adjacent to public parks, preserves or county-maintained stream channels may be deeded to Pima County as public open space, if approved by the board of supervisors.

5. Cluster open space shall be an integral part of the site design and shall be within the boundaries of the cluster development it serves.

6. Phased developments shall provide cluster open space for each phase, so that each phase may stand alone in conformance with Section 18.09.040(K).
7. Cluster open space shall not include public or private streets, driveways, parking areas, channelized drainageways, and disturbed, unvegetated areas.
8. Final plats shall be delineated and annotated to reflect the cluster open space requirements.

G. Cluster development plan requirements.
1. A cluster development procedures checklist, to aid in the preparation of the plan, shall be available from the planning and development services department.
2. The development plan for cluster review shall include:
   a. A site analysis, in accordance with county "Site Analysis Requirements" document, Section IV, A through L;
   b. A preliminary development plan, in accordance with Section 18.91.030(E) (Zoning Code Amendments and Zone Changes);
   c. An evaluation of the effect of the proposed development, in accordance with county "Site Analysis Requirements" document, Section V, B through P;
   d. Architectural renderings, elevations and perspectives, as required, to present the style, color, materials and context of proposed structures;
   e. Delineation of cluster open space and calculations for its derivation;
   f. Landscape plan, in accordance with Section 18.73.030 (Landscaping Standards); and
   g. Any descriptive data that may be appropriate, including drafts of the proposed covenants, conditions and restrictions that will apply to the cluster project.

H. Review committee. Proposed plans in a cluster development shall be reviewed by the design review committee (refer to Section 18.99.030, DR).

I. Cluster development review procedures.
1. Preliminary review:
   a. Preliminary review by the development services department is required for all proposals prior to the submittal of a cluster development plan. The preliminary review procedures shall be as listed in the cluster development checklist in accordance with Section 18.09.040(G).
   b. The developer shall consult with other agencies and parties potentially interested in the development, such as other county departments, all affected utility companies, and homeowners' and neighborhood associations, and property owners within the notice area as required by Section 18.09.040(I)(4)(a).
2. Submittal: Application for cluster development plan review shall be subject to the procedures and requirements listed in the checklist prepared by the development services department and submitted in writing together with required fees to the development services department, along with the required number of copies of the plan, as prepared in accordance with Section 18.09.040(G).
3. Compliance review: The development services department shall review the plan for compliance with the cluster development checklist and this section, and shall, in writing, either accept or reject the plan for further review within thirty days of plan submittal:
   a.

If accepted, copies of the plan shall be transmitted to appropriate county staff for review and comment. The plan shall be scheduled for the next regularly scheduled review committee meeting that is scheduled to occur at least thirty days after the date of acceptance. Notice of the public hearing shall be provided as required in this section.

b. If rejected, the developer may:

1) Resubmit the plan with the appropriate corrections and development services department staff shall, in writing, either accept or reject the plan for further review within thirty days of plan submittal; or

2) Appeal to the review committee at a regularly scheduled meeting. The review committee may then either accept or reject the resubmitted plan for review at a future meeting.

4. Review Committee notice and hearing:

a. Notice of the review committee hearing shall be mailed, at least fifteen days prior to the meeting, to owners of property within three hundred feet of the applicant's property line, except that notice shall be expanded to include owners of property within 1,000 feet if the existing zoning of the applicant's property is RH, SR, SR-2, GR-1 or CR-1. In addition, notice shall be sent to any affected neighborhood association and to any affected homeowners' association, as defined by section 18.99.020(A)(1). Notice shall also be provided at least fifteen days prior to the meeting by publication once in a newspaper of general circulation in the county seat.

b. The review committee shall hold a public hearing on the request.

5. Review committee decision:

a. The review committee shall review the cluster development plan for conformance with the purpose and requirements of this section and of this code, and refer to design guidelines and standards contained in the cluster design review manual. In acting on a proposed cluster plan, the review committee shall give particular consideration to the following criteria:

1) Individual lots, buildings, streets, and parking areas shall be designed and situated to minimize alteration of the natural and historic site features and structures to be preserved.

2) The utility of functional open space shall be determined by the size, shape, topographic, and location requirements of the particular purpose proposed for the functional open space.

3) Cluster open space shall include irreplaceable natural features if located in the site (such as, but not limited to, watercourses, significant stands of vegetation and trees, individual trees and cacti of significant size, rock outcroppings, peaks, ridges and slopes).

4) Cluster open space intended for a recreation or common use shall be easily accessible to pedestrians, and accessibility shall meet the needs of the handicapped and elderly.

5) The suitability of cluster open space intended for scenic purposes shall be determined by its visual impact and quality as seen from a significant number of units, buildings or by its visibility along the nearest lengths of public or private streets, and shall be validated in the site analysis.

6)

Suitability of individual building types and designs shall be determined by how well they function and relate to the natural constraints of the site.

7) Individual lots, buildings, and units shall be arranged and situated to relate to surrounding properties, to improve the view of buildings, and to minimize the land area devoted to motor vehicle access.

8) Individual lots, buildings, units, and parking areas shall be situated to avoid the adverse effects of pollution, noise, lighting and traffic on the residents of the site.

9) Sites, structures and landmarks having a potential for historic preservation shall be identified and, where possible, be integrated into the development plan as a designed feature of the project.

b. The review committee may deny the proposed project design; or approve the proposed project design, or approve the proposed project design with conditions; or continue the hearing until a future meeting pending submittal of additional information.

c. If the review committee approves the cluster development plan with conditions the design review committee shall specify the general conditions and revisions that shall be met before the plan can be approved.

d. If approved without modification, the developer shall comply with Chapter 18.69 (Subdivision Standards) and submit the required documents and fees to the development services department subdivision coordinator.

e. If approved subject to modification, the developer may:

1) Submit the revised plan to the development services department for final compliance review; or

2) Appeal any review committee requirements in accordance with Section 18.09.040(I)(6).

f. If the plan approved by the review committee constitutes a substantial change from a preliminary development plan previously approved by the board of supervisors, the following applies:

1) The planning director shall schedule a duly noticed public hearing at which the board of supervisors shall be requested to consider the cluster development option plan in lieu of the previously approved preliminary development plan.

2) The request shall be at the fee established by the board of supervisors for an unadvertised public hearing and shall specifically cite the substantial change or difference between the two plans. The request shall provide the rationale for the review committee's recommendation.

3) The supervisors' directions shall be applied to the cluster option plan, which shall be further processed in accordance with Section 18.09.040 (I).

g. Projects requiring a rezoning:

1) A cluster project requiring a rezoning shall first be heard by the planning and zoning commission at public hearing before being heard at a public hearing before the review committee.

2) Following a decision by the review committee, the board of supervisors shall review the project at a public hearing. If the board approves the rezoning with the design of the project per the review committee

decision, the project shall comply with all requirements for approved rezonings. If the board approves the rezoning with modifications to the review committee decision, the board may remand the project back to the review committee for review at a regularly scheduled public meeting prior to approval of the final plat for conformance with the direction of the board and the requirements of Section 18.09.040

h. Written decisions of the review committee shall be available within five working days of the meeting.

6. Appeal of review committee decision:

a. Decisions, conditions and requirements specified by the review committee may be appealed to the board of supervisors by the developer, by owners of property abutting (or across the street from) the project site, or by a homeowners' or neighborhood association of record that includes those properties abutting (or across the street from) the project site. A written appeal shall be directed to the planning director within ten working days of the review committee decision for scheduling of a noticed public hearing. Reasons for and evidence to support the appeal shall be stated in the written notice of appeal. Notice of the appeal hearing shall be provided to all who received notice of the review committee meeting at which the decision, conditions or requirements being appealed were established. The public hearing shall be scheduled for the next regularly scheduled board meeting that is scheduled to occur at least thirty days after the date the appeal is submitted.

b. The fee for the appeal before the board of supervisors shall be the same as for an advertised public hearing and shall be paid at the time the written request for appeal is submitted for review.

c. At the hearing to review the appeal, the board of supervisors may approve the design, conditions, or requirements of the project appealed, approve subject to modifications the design, conditions, or requirements of the project being appealed, or deny the design of the project being appealed.

d. If the board of supervisors approves the project design subject to modifications, the board may remand the project back to the review committee for review at a regularly scheduled public meeting prior to approval of the final plat for conformance to the directions of the board of supervisors and the requirements of Section 18.09.040

e. If the board of supervisors denies the appeal, the applicant may resubmit a new application for a cluster project at any time, provided that the new submittal substantially differs from the project denied by the board. The new submittal must include a statement showing how the new project differs substantially from the project denied by the board. Review of the new submittal shall conform to all requirements of Section 18.09.040

7. Final compliance review: All plans revised in conformance with the decisions of the review committee or the supervisors shall be submitted to the development services department for final compliance review prior to submittal of a tentative plat. A compliance decision shall be provided within five working days of the revised plan submittal.

8. Tentative plat submittal: Following final cluster development option compliance approval, the developer shall submit to the planning and development services department the following:

a. A tentative subdivision plat for review, in accordance with Chapter 18.69 (Subdivision Standards);
b. Approved cluster arrangements and schematic elevations, keyed to the approved cluster site plan;
c. A type 2 grading plan, in accordance with Section 18.81.060 (Grading);
d. Delineation of cluster open space;
e. Landscape plan, in accordance with Section 18.73.030 (Landscaping Standards);
f. Proposed covenants for the development; and
g. Documentation outlining the proposed percentage of development to be accomplished prior to the homeowners' association assuming responsibility for the maintenance of common areas and property (reference Section 18.09.040J2).

9. Time limits:
a. Approval of a cluster development plan shall be effective for two years from the date of final compliance approval, unless a tentative plat has been approved in accordance with Chapter 18.69 (Subdivision Standards).
b. Failure to record a final plat within four years of the review committee approval date shall require a project feasibility review and approval to proceed by the planning and development services director, who shall determine the need for additional cluster option review, based on land use changes surrounding the site area during the four-year period.

J. Homeowners' Association. The applicant shall submit for recording a set of covenants, running with the land, providing for the creation of a homeowners' association. The covenants shall contain the following provisions:

1. A hold-harmless clause assuring that Pima County is not responsible for maintenance or liability of the private and common areas of the development, which shall include, but not be limited to:
a. Cluster open space,
b. Parks,
c. Buffers,
d. Landscaping,
e. Recreational facilities,
f. Streets and trails, and
g. Private sewers, utilities and septic systems;

2. The association's structure and its operating rules and regulations must be documented and approved before any lots or residential units are sold. The developer shall present, for design review committee approval, a plan for the transfer of all common areas and facilities control to the homeowners. The transfer of control may be based on an elapsed time period or the number or percentage of lots sold.

3. All common open space and improvements shall be established and maintained in accordance with the following requirements:
a. The applicant or developer shall provide for and establish a nonprofit organization or other legal entity under the laws of Arizona for the ownership, care, and maintenance of all such lands and improvements,
b.

Such organization shall be governed by covenants running with the land and shall be composed of all persons having ownership within the subdivision. Such organization shall be responsible for the perpetuation, maintenance and function of all common lands, uses, and facilities,

c. All common open space and improvements shall be described and identified as to location, size, use, and control in the covenants, and such covenant shall set forth the method of assessment for the maintenance of such land. The covenants shall be written so as to run with the land and be in full force and effect for a period of not less than twenty-five years, and shall be automatically extended for successive periods of twenty-five years unless terminated in a manner set forth hereinafter. The covenants shall become part of the deed to each lot or parcel within the development,

d. Such restrictive covenant and organization shall continue in effect so as to control the availability of the facilities and land thereby provided, to maintain the land and facilities for their intended function, and to protect the development from additional and unplanned densities or uses. Such organization shall not be dissolved, nor shall such organization dispose of any common open space, by sale or otherwise,

e. No common open space shall be denuded, defaced, nor otherwise disturbed in any manner not previously approved without the approval of the board of supervisors,

f. The covenants shall provide that in the event the homeowners' organization established to own and maintain such common open space and improvements shall at any time after establishment of the development fail to maintain the common open space and improvements in reasonable order and condition in accordance with the approved plans, the county may serve notice in writing upon such homeowners' organization or upon the homeowners within the development setting forth the manner in which the homeowners' organization has failed to maintain the common open space and improvements in reasonable condition, and said notice shall contain a demand that such deficiencies of maintenance be cured within thirty days thereof, and shall state the date and place of a public hearing thereon which shall be held within twenty days of the notice,

g. At such hearing the county may modify the terms of the original notice as to the deficiencies and may grant an extension of time within which they shall be cured,

h. If the deficiencies set forth in the original notice or in the modifications thereof shall not be cured within said thirty days or any extension thereof, the county, in order to preserve the taxable values of the properties within the development and to prevent the common open space and improvements from becoming a public nuisance, may enter upon said common open space and maintain the same for one year,

i. Said entry and maintenance shall not vest in the public any rights to use the common open space and improvements, except when the same is voluntarily dedicated to the public by the owners,

j. Before the expiration of said one-year period, the county shall, upon its initiative or upon the request of the homeowners' organization responsible for the maintenance of the common open space and improvements, call a public

hearing upon notice in writing to such organization or to the homeowners within the development, to be held by the supervisors, at which hearing the organization shall show cause why such maintenance of the county shall not, at the election of the supervisors, continue for a succeeding one-year period,

k. If the supervisors determine that such organization is ready and able to maintain the common open space and improvements in reasonable condition, the county shall cease to maintain the common open space and improvements at the end of said one-year period,

l. If the supervisors determine that such organization is not ready and able to maintain the common open space and improvements in a reasonable condition, the county may, in its discretion, continue to maintain the common open space and improvements during the next succeeding year, and subject to a similar hearing and determination in each year thereafter,

m. The covenants shall further provide that the cost of such maintenance by the county shall be assessed ratably against the properties within the development that have a right of enjoyment of the common open space and improvements, and shall become a charge on said properties, and such charge shall be paid by the homeowners of said properties within thirty days after receipt of a statement.

K. Phased development.

1. Approval may be given for the development of delineated phases of the site, after submittal of a unified cluster site plan for the total project. The phased portions shall be shown on the subdivision plat.

2. Open space requirements for each phase shall be the same as stated in Section 18.09.040(F). Separate homeowners' associations with provisions for expansion or consolidation may be created. Prior to the sale of any lot, site, unit or dwelling in a phased portion, the open space and recreation areas in that portion shall be designated, recorded and developed or maintained in conformance with the approved development plan.

L. Amendments to final plan.

1. Unsubstantial changes in the location, siting or character of buildings may be authorized by the planning and development services director, if required by engineering or other circumstances not foreseen at the time of the final subdivision plat approval.

2. Substantial changes to the approved cluster site plan shall require a complete, new review of the entire project, to include additional fees, plan submittals and meetings in accordance with this section.

(Ord. 2011-2 § 4 (part), 2011; Ord. 2009-3 § 1, 2009; Ord. 1998-51 § 2, 1998; Ord. 1996-58 § 4 (part), 1996; Ord. 1994-147 § 3 (part), 1994; Ord. 1988-116 § 4, 1988; Ord. 1986-187 § 1 (part), 1986; Ord. 1985-187 § 1 (part), 1985; Ord. 1985-111 § 1 (part), 1985; Ord. 1985-82 (part), 1985)

18.09.100 - Conservation subdivision.

A. Purpose. The purpose of this section is to encourage, and provide incentives for, innovative site planning of residential subdivision lots that are designed in harmony with the natural features and constraints of property. This section establishes subdivision development standards which allow a landowner to achieve full density under the existing zoning of the land, and which also provide substantial preservation of natural open space and natural and cultural resources.

The goal of conservation site planning is to protect conservation features such as designated peaks and ridges, riparian areas, native plants and plant communities, areas near public preserves, wildlife habitat areas, biological corridors, and sites of archaeological and cultural value. Conservation subdivisions promote the establishment of conservation natural areas and, where possible and practicable, support interconnected, continuous, and integrated open space systems within an area, particularly when located contiguous to public preserves.

B. Applicability. These standards may be used to develop subdivisions on land containing undeveloped indigenous habitat and conservation features identified by the property owner in a conservation subdivision plat through aerials and supporting documentation, and certified as containing undeveloped indigenous habitat by the planning official. Any dispute about applicability of these standards to a particular parcel of land shall be reviewed at a public hearing before the planning and zoning commission. Except as noted in this section all other requirements of the Pima County Zoning Code shall apply.

C. Definitions. The following definitions apply to this section:

1. Conservation subdivision. A residential subdivision that is designed according to the procedures set forth in this section. A conservation subdivision allows a property to be developed to the full residential density permitted under the existing zoning classification, while also providing for the permanent conservation of substantial amounts of environmentally and culturally valuable open space areas, such as designated peaks and ridges, riparian areas, native plants and plant communities, areas near public preserves, wildlife habitat areas, biological corridors, and sites of archaeological and cultural value.
2. Conservation natural areas. Those areas within a conservation subdivision that are permanently designated and deed restricted to natural open space use by a conservation easement or owned in fee.
3. Conservation easement. A nonpossessory interest of a holder in real property imposing limitations or affirmative obligations for conservation purposes.
4. Conservation purposes. Any of the following activities which yield a significant public benefit:
    a. Protecting a relatively natural habitat of wildlife, plants, similar ecosystem, or conservation natural area.
    b. Preserving open space, including natural open space and conservation natural area, if the preservation is either:
        1) For the scenic preservation of the natural area.
        2) Pursuant to a clearly delineated federal, state or county governmental conservation policy.
    c. Protection of archaeological and cultural resources.
5. Designated homesite area. That portion of a lot not restricted by a conservation easement.
6. Disturbed, disturbance. Refers to a significant visible man-caused change to an undisturbed natural area, site or conservation feature such as the ground surface, geology, vegetation, riparian area, or nesting habitat; and wherein such change results in (a) the degradation of the undisturbed natural area, site or conservation feature and (b) a corresponding reduction in the resource value of the natural area, site or conservation feature. Intrusive activities which degrade undisturbed natural area, site or conservation features, and reduce resource value include dumping,

burning, toxic spills, plant pruning and removal, planting invasive and/or high water usage plant material that endangers or threatens the survivability of existing or introduced native plants and low water use, drought tolerant plant material, man caused erosion, grading, grubbing, scarifying, storage, vehicular, motorized and wheeled activity, grazing, pasturing, farming, and other similar intrusive activities.

7. Holder. Either:
   a. A governmental body empowered to hold an interest in real property under the laws of this state or the United States.
   b. A homeowners association, nonprofit charitable corporation or trustee of a charitable trust, the purposes or powers of which include retaining or protecting the natural, scenic or open space values of real property, and assuring the preservation, maintenance, and management of real property, and protecting and enhancing the undisturbed character and quality of conservation natural areas.
8. Indigenous habitat. Undeveloped areas consisting of plant communities that grow naturally in and are native to Pima County.
9. Primary conservation features. Those parts of the site which contain primary resource value natural features such as:
   a. Lakes, ponds, wetlands, floodway and erosion hazard setback areas;
   b. Riparian areas, prominent hilltops, peaks or ridges, and prominent rock outcroppings extending from public preserves;
   c. Riparian habitat corridors and riparian areas of hydroriparian, mesoriparian, and xeroriparian A, B, and C, and any segments of riparian areas that are hydroriparian and mesoriparian according to Riparian Habitat Regulations in Article X of the Pima County Floodplain and Erosion Hazard Management Ordinance;
   d. prominent vegetative and geologic features of a site, including saguaros and ironwoods, mesquite bosques, prominent hilltops and prominent rock outcrops, and peaks or ridges;
   e. habitat with plant species listed as Highly Safeguarded by the Arizona Native Plant Law;
   f. areas of undisturbed native upland vegetative communities adjacent to primary riparian area; and
   g. slopes of twenty-five percent (25%) or greater.
10. Private living area. That portion of a designated homesite occupied by buildings, walls, patios, vehicular parking and circulation areas, and connecting pedestrian walks.
11. Riparian area. A geographically delineated area with distinct resource values that is characterized by deep-rooted plant species that depend on having roots in the water table or its capillary zone and that occurs within or adjacent to a natural perennial or intermittent stream channel, or within or adjacent to a lake, pond or marsh bed maintained primarily by natural water sources, or in or adjacent to ephemeral stream channels. Riparian areas routinely include hydroriparian, mesoriparian, and xeroriparian A, B, and C, any segments of riparian areas that are hydroriparian and mesoriparian. Riparian habit area does not include artificially created stockponds, man-made storage reservoirs constructed primarily for conservation or regulatory

storage, municipal and industrial ponds or man-made water transportation, distribution, off-stream storage and collection systems.

12. Restored, restoration, mitigation. The process of repairing a previously disturbed, damaged, or graded site area or site feature and replicating its previously undisturbed, undamaged, or ungraded condition of vegetation, plant communities, geologic structures, grade, drainages, and riparian area that historically existed on site or in the neighborhood. Restoration of previously disturbed or graded areas will include revegetation, and may include corrective grading, natural and artificial rock, and top dressing.

13. Secondary conservation features. Those parts of a site which contain the secondary resource value natural features such as:
    a. Segments of riparian area not connected to or extending from a public preserve;
    b. Riparian areas not designated as primary conservation features;
    c. Areas of undisturbed native upland vegetation communities;
    d. Habitat with plant species listed as Salvage Restricted per the Arizona Native Plant Law;
    e. Areas between fifteen percent (15%) and up to but not including twenty-five percent (25%) slopes;
    f. One hundred year floodplain areas; and
    g. Sites and features of archaeological and/or cultural value.

14. Third party right of enforcement. A right granted in a conservation easement to enforce any of its terms granted to a governmental body, nonprofit charitable corporation, charitable trust, or foundation, which, although eligible to be a holder, is not a holder.

15. Wildlife friendly fencing. Shall be a maximum 42″ high fence using T-posts and 12-gauge wire as installed, maintained and further provided, and revised in conformance with the requirements and specifications of the Arizona Game and Fish Department for Standard Game Fence, or any subsequent revisions.

D. Permitted zones. This applies to subdivision development in the following zones: IR, RH, GR -1, SR, SR-2, SH, and CR-1, and specific plan development areas with land use designations that are comparable to IR, RH, GR-1, SR, SR-2, SH, or CR-1 zones.

E. Development standards.

1. Maximum density yield: Maximum density yield is obtained by dividing the minimum area per dwelling unit standard allowed under the zone of the property into the gross area of the subdivision site. SH shall use the same minimum area per dwelling unit as GR-1.

2. Minimum lot size:
    a. GR-1, SH, and, CR-1: eighteen thousand (18,000) square feet, however, twenty percent (20%) of the lots may be smaller than eighteen thousand (18,000) square feet provided that the smaller lots are located on the interior of the project and provided that no lot is smaller than twelve thousand (12,000) square feet;
    b. SR-2: thirty thousand (30,000) square feet;
    c. IR, RH, SR: forty-three thousand five hundred and sixty (43,560) square feet;
    d. All lots using a septic system shall meet all county requirements pertaining to lot size and septic use.

3. Minimum building setback:
   a. Subdivision site setbacks for the entire subdivision are the same as the setbacks permitted in the zone for a single lot, but in no case shall a subdivision site setback be less than thirty feet (30′);
   b. Front yard setbacks of individual lots shall be a minimum of twenty feet (20′);
   c. Rear yard setbacks of individual lots shall be a minimum of ten feet (10′);
   d. Side yard setbacks along an internal subdivision street frontage and between adjoining subdivision lots shall be a minimum of ten feet (10′);
   e. The provisions of Section 18.07.070 (modification of setback requirements) apply to a conservation subdivision. For the purposes of this section, site setbacks and front yard setbacks in a conservation subdivision may also be reviewed for modification.
4. Domestic animals: the subdivision plat shall have covenants regulating the keeping of domestic animals as follows:
   a. Domestic pets shall be confined to private living areas or accompanied on a leash outside private living areas by a resident or trainer, except as provided in the following subsection b. Domestic pets are domestic animals whose nature is consistent with the residential character of the neighborhood or the adjoining conservation natural area.
   b. Fenced dog runs may be located outside private living areas within the designated homesite area;
   c. Livestock may be kept in SR, RH, & IR Conservation Subdivisions and such livestock shall be confined in barns, sheds or fenced enclosures all within the designated home site areas.
   d. No wild animal, as defined in Chapter 6.04 Pima County Code shall be kept.
   e. The number of domestic animals on a lot shall be consistent with the residential character of the neighborhood.
5. Fencing and walls are permitted as follows:
   a. Fencing and walls in private living areas on individual lots;
   b. Wildlife friendly fencing that is required to protect cultural and natural resources from negative impacts such as human trespass and adjacent grazing areas;
   c. Fencing and walls for livestock enclosures in the designated homesite area.
6. Driveway widths shall be limited to twelve feet (12′) with a maximum six-foot (6′) graded area on each side of the driveway where required to accommodate sloping site conditions.

F. Conservation natural areas standards. The planning official, or the planning official's designated representative qualified in such matters, shall review the subdivision's conservation natural area to ensure that it protects natural area connections and important habitat features. A conservation subdivision shall comply with the following standards:
1. Minimum conservation natural area designation:
   a. A minimum of fifty percent (50%) of the area of the subdivision site after deducting major streets and scenic routes rights-of-way dedications shall be set aside and restricted to conservation natural areas. When the best available scientific information confirmed by the planning official, or his designated representative qualified in such matters, indicates that a higher percentage of conservation natural area or conservation easement is required, such additional area shall be provided to the maximum extent practicable. Primary

conservation features shall be the highest priority feature to be included in conservation natural areas within the subdivision. After all primary conservation features are designated as conservation natural area, any remaining required percentage of natural area shall include secondary conservation features.

b. On lots containing two (2) or more acres, or in low density subdivisions with a density less than one (1) dwelling unit per two (2) acres, up to thirty percent of the conservation natural areas required in the preceding subsection 1.a. may be located within individual subdivision lots, provided they are restricted to natural area use through recorded conservation easements.

c. No graded or disturbed area shall be part of the conservation natural area calculation.

2. Grading and conservation natural areas.

a. Grading of a subdivision site is permitted only for roadways, utilities and within the approved development areas.

b. The maximum grading area on lots smaller than one (1) acre shall be twenty thousand (20,000) square feet plus the area of a single lane twelve foot (12′) wide driveway that extends from the lot property line to the garage or carport.

c. The maximum grading area on lots one (1) acre or larger shall be thirty thousand (30,000) square feet plus the area of a single lane twelve foot (12′) wide driveway that extends from the lot property line to the garage or carport.

d. To the fullest extent possible, improvements shall be sited to minimize disturbance in conservation natural areas and of the primary and secondary conservation features within them.

e. The design of the development area shall be done so the grading has the least impact on the primary conservation features.

f. Mitigation of disturbed conservation features shall be done in accordance with the purpose of this section, as approved by the planning official, or his designated representative qualified in such matters.

g. Mitigated areas are not counted or included in the calculation of the percent of conservation natural area required for a subdivision site.

h. Washes. Within washes that are primary or secondary conservation features, only that grading for roadways and utilities that is necessary to provide access to approved development areas is permitted in accordance with Chapter 16.54 (Riparian Habitat Ordinance) of this code. Wash disturbance shall be minimized and all utilities shall be installed within roadway easements, except that where a roadway easement is not a practicable location for the utility as confirmed by the planning official, or his designated representative qualified in such matters, then the utility may cross a wash using the least intrusive construction methodology and subject to mitigation and revegetation of the wash disturbance. Wash areas so disturbed and subsequently mitigated shall not be included as part of any open space or natural area requirement.

i. Native plants. To the fullest extent possible, buildings and other improvements shall be sited so as not to disturb primary and secondary conservation features such as saguaros and ironwood trees. Transplantation of existing indigenous plant material shall be within the subdivision. Transplanting or mitigation shall be conducted as follows:

1)

Mitigation including transplanting and revegetation for roadways, utilities, and siting of dwellings and private living areas must be done in accordance with Chapter 18.72 (Native Plant Preservation Standards).

2) Grading and disturbed areas in designated homesite areas located outside private living areas, fenced dog runs, and livestock enclosures shall be revegetated with plant material indigenous to the site or subdivision that replicates the understory, midstory, and canopy of adjoining conservation natural areas; except that native, drought-tolerant, low-water use plants (including trees shrubs, cacti, ground cover, grasses and seed mixes) approved by the planning official, or his designated representative qualified in such matters, may also be used.

j. Except as otherwise provided in subparagraph i. above, revegetation of graded or disturbed areas shall be with indigenous trees, shrubs, and ground cover to simulate understory, midstory, and canopy of adjoining natural areas.

k. Site development shall include reduction of storm water runoff by means of water harvesting (swales, basins, gabions, mulches, etc.), erosion control through benign grade stabilization, and careful siting of improvements to minimize negative impacts in conformance with permaculture practices and concepts.

3. To assure the most beneficial natural area design, conservation natural areas shall provide, where possible and practicable, connections to public preserves, undisturbed riparian areas, and natural areas on adjoining properties, and protection of undeveloped indigenous habitat.

4. Long thin strips of natural areas shall be avoided unless the feature is linear, such as a wash or the configuration is necessary to connect with other washes or trails. The conservation natural areas shall generally abut existing or potential natural areas on adjacent parcels. Where possible, such subdivision conservation natural areas shall be designed as part of a larger contiguous and integrated open space system of undeveloped indigenous habitat.

G. Infrastructure standards.

1. Conservation subdivisions may use the more flexible street development standards established in the standards and policies of the department of transportation and flood control district for conservation subdivisions and shall emphasize protection of wildlife corridors and minimization of traffic killings of wildlife.

2. Notwithstanding the restriction on the length of cul de sacs contained in Section 18.69.040.A2.l (Subdivision Standards), there is no restriction on cul de sac length in a conservation subdivision. However, no cul-de-sac may serve more than one hundred dwellings or any use that would generate one thousand or more average daily vehicle trips.

3. Existing ingress and egress easements adjacent to or within the subdivision boundaries and which serve lots within the subdivision shall be designated as common area. Existing ingress and egress easements within the subdivision that do not serve lots within the subdivision but only serve parcels outside the subdivision may remain as part of a subdivision lot. Existing ingress and egress easements connected to subdivision boundaries may serve subdivision lots.

H. Site planning procedure.

1. Pre-application meeting: Prior to the submittal of a tentative subdivision plat, the applicant shall prepare a tentative plat sketch proposal which shows the proposed

conservation natural areas, the lot pattern, streets, and trail linkages of development areas and to meet with the planning official, or the planning official's designated representative, to discuss how the conservation subdivision standards can be applied to the subject property.

2. Tentative plat. The tentative plat shall be prepared in compliance with the following design process:
   a. Determine the maximum density yield.
   b. Identify conservation natural areas. All potential conservation natural areas are to be identified. Lands shall be considered for designation as conservation natural areas in the following order:
      1) Areas which qualify as primary conservation features;
      2) Areas which qualify as secondary conservation features;
      3) Areas the property owner may want to preserve.
   c. Identify development areas. The areas that are not identified as conservation natural areas and are available for development.
   d. Locate building sites. The approximate sites of individual buildings are tentatively located.
   e. Align streets. Streets shall be laid out in a way that avoids, or at least minimizes, adverse impacts on conservation natural areas to the greatest extent practicable. Wash crossings and streets traversing existing slopes greater than fifteen percent (15%) are discouraged.
   f. Draw the lot lines. The lot lines should, where possible, be located approximately midway between house locations and may include L-shaped lots which meet county standards.
3. County evaluation of tentative conservation subdivision plat. Development services shall review the plat to ensure that the design is appropriate to the site's natural, historic, and cultural features and the purposes of this section. Diversity and originality in lot layout are encouraged to achieve the best possible relationship between development and conservation natural areas. To the greatest extent possible and practicable, the layout of a tentative plat shall meet the following standards:
   a. Protects and conserves riparian areas, slopes greater than fifteen percent (15%), and designated peaks and ridges from clearing, grading, filling, or construction except as may be approved for essential infrastructure;
   b. Creates buffer areas to minimize conflicts between residential uses, public preserves, and wildlife habitat;
   c. Locates development on the least environmentally sensitive areas of the site with the least intrusion into primary and secondary conservation features and is least disruptive to connections with public preserves and surrounding undeveloped indigenous habitat;
   d. Protects wildlife habitat areas of species listed as endangered, threatened, or of special concern by the U. S. Fish and Wildlife Services, Arizona Game and Fish Department, and the adopted Sonoran Desert Conservation Plan.
   e. Minimizes development impacts on ironwoods, saguaros and their understory, and large clusters of sensitive plant groups protected by the native plant preservation standards (Chapter. 18.72);
   f. Avoids siting dwellings on prominent hilltops or ridges by taking advantage of lower topographic forms;

g. Designs around and preserve sites of historic, archeological, or cultural value and their environs insofar as needed to safeguard the character and integrity of the feature;

h. Improves public safety and protects the character of scenic routes by avoiding lot development which directly accesses onto scenic routes that are also major routes;

i. Where trails are provided, they shall be designed as a pedestrian circulation path system to ensure that pedestrians can walk safely and easily on the site, between properties and activities or special features within the neighborhood open space system;

j. Provides natural areas that are contiguous and whose configuration minimizes fragmentation of natural areas within the development;

k. Incorporates a water harvesting plan.

l. Revegetation shall be indigenous trees, shrubs, and ground cover to simulate when practicable understory, midstory, and canopy of adjoining natural areas.

I. Lot development. Lots thirty-six thousand (36,000) square feet or greater with grading areas greater than fourteen thousand (14,000) square feet shall, at the time the lot is developed, incorporate a thirty percent natural area set aside into the lot design, if not already delineated by the plat. The natural area set aside should, when possible, provide connections to adjoining common or individual lot conservation natural areas, and building area footprints should be minimized. To the maximum extent possible, open space areas adjacent to streets that are located on individual lots shall be left natural.

J. Conservation natural areas ownership and maintenance. Conservation natural areas shall be restricted to natural open space in perpetuity. The conservation natural areas shall remain undivided. Conservation natural areas located outside of individual residential lots shall be owned and managed by either a homeowners' association, the county, or a recognized land trust or conservancy.

1. Conservation natural areas located outside of individual lots shall be preserved by one of the following methods:

a. Dedication. Conservation natural areas may be dedicated to the county, either in fee simple or as a conservation easement, by a form of instrument approved by the county. The county may, but is not required, to accept conservation natural areas.

b. Transfer to a private conservation organization, land trust, or conservancy. Conservation natural areas may be transferred either in fee or by easement to a private nonprofit organization, among whose purposes it is to conserve conservation natural areas and/or natural resources provided that:

1) The organization is acceptable to the county;

2) The organization is a bona fide conservation organization with perpetual existence;

3) The conveyance contains appropriate provisions for the transfer of the conservation natural area to the county, an appropriate homeowners association, or another private nonprofit organization acceptable to the county, if the original organization becomes unwilling or unable to continue carrying out its function; and

4)

A maintenance agreement approved by the county is entered into by the owner of the subdivision site and the non profit conservation organization.

c. Transfer to a homeowners' association and maintenance standards. If the conservation natural areas are to be owned and maintained by the homeowners' association of the subdivision, the subdivider shall record covenants, conditions and restrictions including maintenance and preservation standards, running with the land, providing for the creation of a homeowners' association. The covenants shall contain the following provisions:

1) A clause assuring that Pima County is not responsible for maintenance or liability of the common natural areas but that Pima County may enforce the maintenance and preservation standards;

2) A clause stating the common areas designated natural area on the subdivision plat shall be restricted to natural areas in perpetuity and maintained by the homeowners association and a requirement that the county is a third party beneficiary with a third party right of enforcement to such clause, and that the clause cannot be amended or repealed without the written consent of the county.

3) The developer shall present to the development services department a plan for the transfer of control of all common natural areas to the homeowners association;

2. Conservation natural areas on individual lots shall be preserved as recorded conservation easements. The conservation easement shall include a statement that all area within the conservation easement shall be preserved as natural open space and shall not be graded or disturbed except that previously graded or disturbed areas within the conservation easement shall be restored, and revegetated in conformance with the provisions of the following subsection 3.

3. Maintenance of conservation natural areas on individual lots:

a. Conservation natural areas shall be preserved as natural open space and shall not be graded or disturbed, except for restoration and the mitigation of previously disturbed area.

b. Existing grading or disturbance within the conservation natural area shall be restored, and mitigated subject to the following:

1) The existing grading and disturbance occurred two (2) years or more before the effective date of the ordinance that establishes this provision, and

2) The existing grading and disturbance was not created during the current owner's ownership of the lot, parcel, or project site.

3) An application for a building or grading permit on a lot, parcel, or project site that meets the preceding conditions in subparagraphs 1) and 2) shall be accompanied by a mitigation and revegetation plan which mitigates the existing grading and disturbance in conformance with the revegetation requirements of Section 18.61.100.F.2.i.2)

4) If the existing grading and disturbance does not meet one (1) or both of the preceding conditions in subparagraphs 1) and 2), then supplemental mitigation requirements may be established by the planning official or a hearing officer.

(Ord. 2001-22 § 1, 2001; Ord. 2000-66 § 1, 2000)

18.09.100 - Conservation subdivision.

A. Purpose. The purpose of this section is to encourage, and provide incentives for, innovative site planning of residential subdivision lots that are designed in harmony with the natural features and constraints of property. This section establishes subdivision development standards which allow a landowner to achieve full density under the existing zoning of the land, and which also provide substantial preservation of natural open space and natural and cultural resources.

The goal of conservation site planning is to protect conservation features such as designated peaks and ridges, riparian areas, native plants and plant communities, areas near public preserves, wildlife habitat areas, biological corridors, and sites of archaeological and cultural value. Conservation subdivisions promote the establishment of conservation natural areas and, where possible and practicable, support interconnected, continuous, and integrated open space systems within an area, particularly when located contiguous to public preserves.

B. Applicability. These standards may be used to develop subdivisions on land containing undeveloped indigenous habitat and conservation features identified by the property owner in a conservation subdivision plat through aerials and supporting documentation, and certified as containing undeveloped indigenous habitat by the planning official. Any dispute about applicability of these standards to a particular parcel of land shall be reviewed at a public hearing before the planning and zoning commission. Except as noted in this section all other requirements of the Pima County Zoning Code shall apply.

C. Definitions. The following definitions apply to this section:

1. Conservation subdivision. A residential subdivision that is designed according to the procedures set forth in this section. A conservation subdivision allows a property to be developed to the full residential density permitted under the existing zoning classification, while also providing for the permanent conservation of substantial amounts of environmentally and culturally valuable open space areas, such as designated peaks and ridges, riparian areas, native plants and plant communities, areas near public preserves, wildlife habitat areas, biological corridors, and sites of archaeological and cultural value.
2. Conservation natural areas. Those areas within a conservation subdivision that are permanently designated and deed restricted to natural open space use by a conservation easement or owned in fee.
3. Conservation easement. A nonpossessory interest of a holder in real property imposing limitations or affirmative obligations for conservation purposes.
4. Conservation purposes. Any of the following activities which yield a significant public benefit:
    a. Protecting a relatively natural habitat of wildlife, plants, similar ecosystem, or conservation natural area.
    b. Preserving open space, including natural open space and conservation natural area, if the preservation is either:
        1) For the scenic preservation of the natural area.
        2) Pursuant to a clearly delineated federal, state or county governmental conservation policy.

c. Protection of archaeological and cultural resources.

5. Designated homesite area. That portion of a lot not restricted by a conservation easement.

6. Disturbed, disturbance. Refers to a significant visible man-caused change to an undisturbed natural area, site or conservation feature such as the ground surface, geology, vegetation, riparian area, or nesting habitat; and wherein such change results in (a) the degradation of the undisturbed natural area, site or conservation feature and (b) a corresponding reduction in the resource value of the natural area, site or conservation feature. Intrusive activities which degrade undisturbed natural area, site or conservation features, and reduce resource value include dumping, burning, toxic spills, plant pruning and removal, planting invasive and/or high water usage plant material that endangers or threatens the survivability of existing or introduced native plants and low water use, drought tolerant plant material, man caused erosion, grading, grubbing, scarifying, storage, vehicular, motorized and wheeled activity, grazing, pasturing, farming, and other similar intrusive activities.

7. Holder. Either:
   a. A governmental body empowered to hold an interest in real property under the laws of this state or the United States.
   b. A homeowners association, nonprofit charitable corporation or trustee of a charitable trust, the purposes or powers of which include retaining or protecting the natural, scenic or open space values of real property, and assuring the preservation, maintenance, and management of real property, and protecting and enhancing the undisturbed character and quality of conservation natural areas.

8. Indigenous habitat. Undeveloped areas consisting of plant communities that grow naturally in and are native to Pima County.

9. Primary conservation features. Those parts of the site which contain primary resource value natural features such as:
   a. Lakes, ponds, wetlands, floodway and erosion hazard setback areas;
   b. Riparian areas, prominent hilltops, peaks or ridges, and prominent rock outcroppings extending from public preserves;
   c. Riparian habitat corridors and riparian areas of hydroriparian, mesoriparian, and xeroriparian A, B, and C, and any segments of riparian areas that are hydroriparian and mesoriparian according to Riparian Habitat Regulations in Article X of the Pima County Floodplain and Erosion Hazard Management Ordinance;
   d. prominent vegetative and geologic features of a site, including saguaros and ironwoods, mesquite bosques, prominent hilltops and prominent rock outcrops, and peaks or ridges;
   e. habitat with plant species listed as Highly Safeguarded by the Arizona Native Plant Law;
   f. areas of undisturbed native upland vegetative communities adjacent to primary riparian area; and
   g. slopes of twenty-five percent (25%) or greater.

10. Private living area. That portion of a designated homesite occupied by buildings, walls, patios, vehicular parking and circulation areas, and connecting pedestrian walks.

11. Riparian area. A geographically delineated area with distinct resource values that is characterized by deep-rooted plant species that depend on having roots in the water table or its capillary zone and that occurs within or adjacent to a natural perennial or intermittent stream channel, or within or adjacent to a lake, pond or marsh bed maintained primarily by natural water sources, or in or adjacent to ephemeral stream channels. Riparian areas routinely include hydroriparian, mesoriparian, and xeroriparian A, B, and C, any segments of riparian areas that are hydroriparian and mesoriparian. Riparian habit area does not include artificially created stockponds, man-made storage reservoirs constructed primarily for conservation or regulatory storage, municipal and industrial ponds or man-made water transportation, distribution, off-stream storage and collection systems.
12. Restored, restoration, mitigation. The process of repairing a previously disturbed, damaged, or graded site area or site feature and replicating its previously undisturbed, undamaged, or ungraded condition of vegetation, plant communities, geologic structures, grade, drainages, and riparian area that historically existed on site or in the neighborhood. Restoration of previously disturbed or graded areas will include revegetation, and may include corrective grading, natural and artificial rock, and top dressing.
13. Secondary conservation features. Those parts of a site which contain the secondary resource value natural features such as:
    a. Segments of riparian area not connected to or extending from a public preserve;
    b. Riparian areas not designated as primary conservation features;
    c. Areas of undisturbed native upland vegetation communities;
    d. Habitat with plant species listed as Salvage Restricted per the Arizona Native Plant Law;
    e. Areas between fifteen percent (15%) and up to but not including twenty-five percent (25%) slopes;
    f. One hundred year floodplain areas; and
    g. Sites and features of archaeological and/or cultural value.
14. Third party right of enforcement. A right granted in a conservation easement to enforce any of its terms granted to a governmental body, nonprofit charitable corporation, charitable trust, or foundation, which, although eligible to be a holder, is not a holder.
15. Wildlife friendly fencing. Shall be a maximum 42″ high fence using T-posts and 12-gauge wire as installed, maintained and further provided, and revised in conformance with the requirements and specifications of the Arizona Game and Fish Department for Standard Game Fence, or any subsequent revisions.

D. Permitted zones. This applies to subdivision development in the following zones: IR, RH, GR -1, SR, SR-2, SH, and CR-1, and specific plan development areas with land use designations that are comparable to IR, RH, GR-1, SR, SR-2, SH, or CR-1 zones.

E. Development standards.
1. Maximum density yield: Maximum density yield is obtained by dividing the minimum area per dwelling unit standard allowed under the zone of the property into the gross area of the subdivision site. SH shall use the same minimum area per dwelling unit as GR-1.
2. Minimum lot size:

a. GR-1, SH, and, CR-1: eighteen thousand (18,000) square feet, however, twenty percent (20%) of the lots may be smaller than eighteen thousand (18,000) square feet provided that the smaller lots are located on the interior of the project and provided that no lot is smaller than twelve thousand (12,000) square feet;

b. SR-2: thirty thousand (30,000) square feet;

c. IR, RH, SR: forty-three thousand five hundred and sixty (43,560) square feet;

d. All lots using a septic system shall meet all county requirements pertaining to lot size and septic use.

3. Minimum building setback:

a. Subdivision site setbacks for the entire subdivision are the same as the setbacks permitted in the zone for a single lot, but in no case shall a subdivision site setback be less than thirty feet (30′);

b. Front yard setbacks of individual lots shall be a minimum of twenty feet (20′);

c. Rear yard setbacks of individual lots shall be a minimum of ten feet (10′);

d. Side yard setbacks along an internal subdivision street frontage and between adjoining subdivision lots shall be a minimum of ten feet (10′);

e. The provisions of Section 18.07.070 (modification of setback requirements) apply to a conservation subdivision. For the purposes of this section, site setbacks and front yard setbacks in a conservation subdivision may also be reviewed for modification.

4. Domestic animals: the subdivision plat shall have covenants regulating the keeping of domestic animals as follows:

a. Domestic pets shall be confined to private living areas or accompanied on a leash outside private living areas by a resident or trainer, except as provided in the following subsection b. Domestic pets are domestic animals whose nature is consistent with the residential character of the neighborhood or the adjoining conservation natural area.

b. Fenced dog runs may be located outside private living areas within the designated homesite area;

c. Livestock may be kept in SR, RH, & IR Conservation Subdivisions and such livestock shall be confined in barns, sheds or fenced enclosures all within the designated home site areas.

d. No wild animal, as defined in Chapter 6.04 Pima County Code shall be kept.

e. The number of domestic animals on a lot shall be consistent with the residential character of the neighborhood.

5. Fencing and walls are permitted as follows:

a. Fencing and walls in private living areas on individual lots;

b. Wildlife friendly fencing that is required to protect cultural and natural resources from negative impacts such as human trespass and adjacent grazing areas;

c. Fencing and walls for livestock enclosures in the designated homesite area.

6. Driveway widths shall be limited to twelve feet (12′) with a maximum six-foot (6′) graded area on each side of the driveway where required to accommodate sloping site conditions.

F. Conservation natural areas standards. The planning official, or the planning official's designated representative qualified in such matters, shall review the subdivision's

conservation natural area to ensure that it protects natural area connections and important habitat features. A conservation subdivision shall comply with the following standards:

1. Minimum conservation natural area designation:
   a. A minimum of fifty percent (50%) of the area of the subdivision site after deducting major streets and scenic routes rights-of-way dedications shall be set aside and restricted to conservation natural areas. When the best available scientific information confirmed by the planning official, or his designated representative qualified in such matters, indicates that a higher percentage of conservation natural area or conservation easement is required, such additional area shall be provided to the maximum extent practicable. Primary conservation features shall be the highest priority feature to be included in conservation natural areas within the subdivision. After all primary conservation features are designated as conservation natural area, any remaining required percentage of natural area shall include secondary conservation features.
   b. On lots containing two (2) or more acres, or in low density subdivisions with a density less than one (1) dwelling unit per two (2) acres, up to thirty percent of the conservation natural areas required in the preceding subsection 1.a. may be located within individual subdivision lots, provided they are restricted to natural area use through recorded conservation easements.
   c. No graded or disturbed area shall be part of the conservation natural area calculation.
2. Grading and conservation natural areas.
   a. Grading of a subdivision site is permitted only for roadways, utilities and within the approved development areas.
   b. The maximum grading area on lots smaller than one (1) acre shall be twenty thousand (20,000) square feet plus the area of a single lane twelve foot (12′) wide driveway that extends from the lot property line to the garage or carport.
   c. The maximum grading area on lots one (1) acre or larger shall be thirty thousand (30,000) square feet plus the area of a single lane twelve foot (12′) wide driveway that extends from the lot property line to the garage or carport.
   d. To the fullest extent possible, improvements shall be sited to minimize disturbance in conservation natural areas and of the primary and secondary conservation features within them.
   e. The design of the development area shall be done so the grading has the least impact on the primary conservation features.
   f. Mitigation of disturbed conservation features shall be done in accordance with the purpose of this section, as approved by the planning official, or his designated representative qualified in such matters.
   g. Mitigated areas are not counted or included in the calculation of the percent of conservation natural area required for a subdivision site.
   h. Washes. Within washes that are primary or secondary conservation features, only that grading for roadways and utilities that is necessary to provide access to approved development areas is permitted in accordance with Chapter 16.54 (Riparian Habitat Ordinance) of this code. Wash disturbance shall be minimized and all utilities shall be installed within roadway easements, except that where a roadway easement is not a practicable location for the utility as confirmed by the planning official, or his designated representative qualified in such matters, then the utility may cross a wash using the least intrusive

construction methodology and subject to mitigation and revegetation of the wash disturbance. Wash areas so disturbed and subsequently mitigated shall not be included as part of any open space or natural area requirement.

i. Native plants. To the fullest extent possible, buildings and other improvements shall be sited so as not to disturb primary and secondary conservation features such as saguaros and ironwood trees. Transplantation of existing indigenous plant material shall be within the subdivision. Transplanting or mitigation shall be conducted as follows:

1) Mitigation including transplanting and revegetation for roadways, utilities, and siting of dwellings and private living areas must be done in accordance with Chapter 18.72 (Native Plant Preservation Standards).

2) Grading and disturbed areas in designated homesite areas located outside private living areas, fenced dog runs, and livestock enclosures shall be revegetated with plant material indigenous to the site or subdivision that replicates the understory, midstory, and canopy of adjoining conservation natural areas; except that native, drought-tolerant, low-water use plants (including trees shrubs, cacti, ground cover, grasses and seed mixes) approved by the planning official, or his designated representative qualified in such matters, may also be used.

j. Except as otherwise provided in subparagraph i. above, revegetation of graded or disturbed areas shall be with indigenous trees, shrubs, and ground cover to simulate understory, midstory, and canopy of adjoining natural areas.

k. Site development shall include reduction of storm water runoff by means of water harvesting (swales, basins, gabions, mulches, etc.), erosion control through benign grade stabilization, and careful siting of improvements to minimize negative impacts in conformance with permaculture practices and concepts.

3. To assure the most beneficial natural area design, conservation natural areas shall provide, where possible and practicable, connections to public preserves, undisturbed riparian areas, and natural areas on adjoining properties, and protection of undeveloped indigenous habitat.

4. Long thin strips of natural areas shall be avoided unless the feature is linear, such as a wash or the configuration is necessary to connect with other washes or trails. The conservation natural areas shall generally abut existing or potential natural areas on adjacent parcels. Where possible, such subdivision conservation natural areas shall be designed as part of a larger contiguous and integrated open space system of undeveloped indigenous habitat.

G. Infrastructure standards.

1. Conservation subdivisions may use the more flexible street development standards established in the standards and policies of the department of transportation and flood control district for conservation subdivisions and shall emphasize protection of wildlife corridors and minimization of traffic killings of wildlife.

2. Notwithstanding the restriction on the length of cul de sacs contained in Section 18.69.040.A2.l (Subdivision Standards), there is no restriction on cul de sac length in a conservation subdivision. However, no cul-de-sac may serve more than one hundred dwellings or any use that would generate one thousand or more average daily vehicle trips.

3.

Existing ingress and egress easements adjacent to or within the subdivision boundaries and which serve lots within the subdivision shall be designated as common area. Existing ingress and egress easements within the subdivision that do not serve lots within the subdivision but only serve parcels outside the subdivision may remain as part of a subdivision lot. Existing ingress and egress easements connected to subdivision boundaries may serve subdivision lots.

H. Site planning procedure.

1. Pre-application meeting: Prior to the submittal of a tentative subdivision plat, the applicant shall prepare a tentative plat sketch proposal which shows the proposed conservation natural areas, the lot pattern, streets, and trail linkages of development areas and to meet with the planning official, or the planning official's designated representative, to discuss how the conservation subdivision standards can be applied to the subject property.

2. Tentative plat. The tentative plat shall be prepared in compliance with the following design process:

   a. Determine the maximum density yield.

   b. Identify conservation natural areas. All potential conservation natural areas are to be identified. Lands shall be considered for designation as conservation natural areas in the following order:

      1) Areas which qualify as primary conservation features;

      2) Areas which qualify as secondary conservation features;

      3) Areas the property owner may want to preserve.

   c. Identify development areas. The areas that are not identified as conservation natural areas and are available for development.

   d. Locate building sites. The approximate sites of individual buildings are tentatively located.

   e. Align streets. Streets shall be laid out in a way that avoids, or at least minimizes, adverse impacts on conservation natural areas to the greatest extent practicable. Wash crossings and streets traversing existing slopes greater than fifteen percent (15%) are discouraged.

   f. Draw the lot lines. The lot lines should, where possible, be located approximately midway between house locations and may include L-shaped lots which meet county standards.

3. County evaluation of tentative conservation subdivision plat. Development services shall review the plat to ensure that the design is appropriate to the site's natural, historic, and cultural features and the purposes of this section. Diversity and originality in lot layout are encouraged to achieve the best possible relationship between development and conservation natural areas. To the greatest extent possible and practicable, the layout of a tentative plat shall meet the following standards:

   a. Protects and conserves riparian areas, slopes greater than fifteen percent (15%), and designated peaks and ridges from clearing, grading, filling, or construction except as may be approved for essential infrastructure;

   b. Creates buffer areas to minimize conflicts between residential uses, public preserves, and wildlife habitat;

   c. Locates development on the least environmentally sensitive areas of the site with the least intrusion into primary and secondary conservation features and is

least disruptive to connections with public preserves and surrounding undeveloped indigenous habitat;

d. Protects wildlife habitat areas of species listed as endangered, threatened, or of special concern by the U. S. Fish and Wildlife Services, Arizona Game and Fish Department, and the adopted Sonoran Desert Conservation Plan.

e. Minimizes development impacts on ironwoods, saguaros and their understory, and large clusters of sensitive plant groups protected by the native plant preservation standards (Chapter. 18.72);

f. Avoids siting dwellings on prominent hilltops or ridges by taking advantage of lower topographic forms;

g. Designs around and preserve sites of historic, archeological, or cultural value and their environs insofar as needed to safeguard the character and integrity of the feature;

h. Improves public safety and protects the character of scenic routes by avoiding lot development which directly accesses onto scenic routes that are also major routes;

i. Where trails are provided, they shall be designed as a pedestrian circulation path system to ensure that pedestrians can walk safely and easily on the site, between properties and activities or special features within the neighborhood open space system;

j. Provides natural areas that are contiguous and whose configuration minimizes fragmentation of natural areas within the development;

k. Incorporates a water harvesting plan.

l. Revegetation shall be indigenous trees, shrubs, and ground cover to simulate when practicable understory, midstory, and canopy of adjoining natural areas.

I. Lot development. Lots thirty-six thousand (36,000) square feet or greater with grading areas greater than fourteen thousand (14,000) square feet shall, at the time the lot is developed, incorporate a thirty percent natural area set aside into the lot design, if not already delineated by the plat. The natural area set aside should, when possible, provide connections to adjoining common or individual lot conservation natural areas, and building area footprints should be minimized. To the maximum extent possible, open space areas adjacent to streets that are located on individual lots shall be left natural.

J. Conservation natural areas ownership and maintenance. Conservation natural areas shall be restricted to natural open space in perpetuity. The conservation natural areas shall remain undivided. Conservation natural areas located outside of individual residential lots shall be owned and managed by either a homeowners' association, the county, or a recognized land trust or conservancy.

1. Conservation natural areas located outside of individual lots shall be preserved by one of the following methods:

a. Dedication. Conservation natural areas may be dedicated to the county, either in fee simple or as a conservation easement, by a form of instrument approved by the county. The county may, but is not required, to accept conservation natural areas.

b. Transfer to a private conservation organization, land trust, or conservancy. Conservation natural areas may be transferred either in fee or by easement to a private nonprofit organization, among whose purposes it is to conserve conservation natural areas and/or natural resources provided that:

1) The organization is acceptable to the county;
2) The organization is a bona fide conservation organization with perpetual existence;
3) The conveyance contains appropriate provisions for the transfer of the conservation natural area to the county, an appropriate homeowners association, or another private nonprofit organization acceptable to the county, if the original organization becomes unwilling or unable to continue carrying out its function; and
4) A maintenance agreement approved by the county is entered into by the owner of the subdivision site and the non profit conservation organization.

c. Transfer to a homeowners' association and maintenance standards. If the conservation natural areas are to be owned and maintained by the homeowners' association of the subdivision, the subdivider shall record covenants, conditions and restrictions including maintenance and preservation standards, running with the land, providing for the creation of a homeowners' association. The covenants shall contain the following provisions:
1) A clause assuring that Pima County is not responsible for maintenance or liability of the common natural areas but that Pima County may enforce the maintenance and preservation standards;
2) A clause stating the common areas designated natural area on the subdivision plat shall be restricted to natural areas in perpetuity and maintained by the homeowners association and a requirement that the county is a third party beneficiary with a third party right of enforcement to such clause, and that the clause cannot be amended or repealed without the written consent of the county.
3) The developer shall present to the development services department a plan for the transfer of control of all common natural areas to the homeowners association;

2. Conservation natural areas on individual lots shall be preserved as recorded conservation easements. The conservation easement shall include a statement that all area within the conservation easement shall be preserved as natural open space and shall not be graded or disturbed except that previously graded or disturbed areas within the conservation easement shall be restored, and revegetated in conformance with the provisions of the following subsection 3.

3. Maintenance of conservation natural areas on individual lots:
a. Conservation natural areas shall be preserved as natural open space and shall not be graded or disturbed, except for restoration and the mitigation of previously disturbed area.
b. Existing grading or disturbance within the conservation natural area shall be restored, and mitigated subject to the following:
1) The existing grading and disturbance occurred two (2) years or more before the effective date of the ordinance that establishes this provision, and
2) The existing grading and disturbance was not created during the current owner's ownership of the lot, parcel, or project site.
3)

An application for a building or grading permit on a lot, parcel, or project site that meets the preceding conditions in subparagraphs 1) and 2) shall be accompanied by a mitigation and revegetation plan which mitigates the existing grading and disturbance in conformance with the revegetation requirements of Section 18.61.100.F.2.i.2)

4) If the existing grading and disturbance does not meet one (1) or both of the preceding conditions in subparagraphs 1) and 2), then supplemental mitigation requirements may be established by the planning official or a hearing officer.

(Ord. 2001-22 § 1, 2001; Ord. 2000-66 § 1, 2000)

Chapter 18.61 - HILLSIDE DEVELOPMENT OVERLAY ZONE*

Sections:

18.61.010 - Purpose.

A. The purpose of this chapter is to establish standards for hillside areas which conserve and maintain the character, identity, and image of Pima County and promote the public health, safety, convenience and general welfare by:

1. Conserving the unique natural resources of hillside areas;
2. Permitting intensity of development (density) compatible with the natural characteristics of hillside terrain, such as steepness of slope and significant land forms;
3. Reducing the physical impact of hillside development by encouraging innovative site and architectural design, minimizing grading, and requiring more intense restoration of graded areas;
4. Minimizing disturbance of existing drainage patterns and soil erosion problems incurred in development alteration of hillside terrain;
5. Providing safe and convenient access to hillside development; and
6. Ensuring the efficient expenditure of public funds.

B.

The purpose of the Hillside Development Manual, a companion document adopted by resolution of the board of supervisors, is to promote compliance with this chapter by establishing technical requirements, implementation standards, guidelines, and procedures.

(Ord. 2000-52 § 1 (part), 2000)

18.61.020 - Definitions.

A. Certain terms used in this chapter shall be defined for purposes of this chapter only, as follows:

1. Development. Any human alteration to the existing state of the land, including its vegetation, soil, geology, topography or hydrology for any commercial, industrial, residential or accessory facilities, or any other use, including any and all utilities, sewers, septic systems and circulation areas, such as streets, private roads, parking areas or driveways.
2. Divide. To separate an existing land parcel into two or more land parcels.
3. Grading. The clearing, brushing, grubbing, excavating, or filling of a site.
4. Land parcel. An area of land with boundaries recorded in the Pima County recorder's office.
5. Mitigation. The replacement and/or restoration of a damaged or disturbed site feature or a high resource value element on-site to a condition that replicates the natural undisturbed condition that historically existed on-site or in the neighborhood. (See also Restoration).
6. Natural area. A land area, unimproved and not occupied by any structures or man-made elements, set aside for the conservation of permanent, undisturbed open space.
7. No practicable alternative. When used, the term means that the property owner has demonstrated to the satisfaction of the planning official that due to physical conditions existing on the property, compliance with the requirements of a section cannot reasonably be practically or functionally achieved.
8. Peak point. The single highest elevation spot of a peak from which the protected area is measured.
9. Perimeter exposed fill slope. For a development category 1 or 2 project on the grading requirements table, the outward most, outward facing exposed fill slope located on or adjacent to the project property line, or located on the perimeter of the project's mass graded area.
10. Perimeter wall. For a development category 1 or 2 project on the grading requirements table 18.71.054-1, the outward most, outward facing free standing wall which may be located on or adjacent to the project property line, within a bufferyard, on or adjacent to a perimeter exposed slope, or on the perimeter of a mass graded area.
11. Practicable alternative. When used shall mean an alternative that is functionally and environmentally acceptable, can be practically and functionally achieved, and in conformance with the purpose provisions of Section 18.61.010 as demonstrated to and confirmed by the planning official.
12. Project site. An area consisting of one or more land parcels that is planned, reviewed and developed as a unified project, including designated natural areas.
13. Protected area of a peak. The circular area defined by a 150-foot radius (map distance) from the peak point.
14.

Protected area of a ridge. The oval area defined by lines running parallel to and on either side of the ridge line at a map distance of 150 feet, combined with and terminating at a 150-foot radius (map distance) from the end points. For all previously adopted ridge lines, the protected area is the area depicted on the maps.

15. Restoration. The process of repairing a previously disturbed, damaged, or graded site area or site feature and replicating its previously undisturbed, undamaged, or ungraded condition of vegetation, plant communities, geologic structures, grade, drainages, and riparian habitat that historically existed on site or in the neighborhood. Restoration of previously disturbed areas will include enhanced revegetation, and may include corrective grading, natural and artificial rock, and top dressing.
16. Ridge line. A ground line running center and parallel to the long axis of a ridge, designated by the identification of two end points.
17. Structural development perimeter. A generally contiguous area on site defined by the outer surfaces or edges of curbs, walls, paving areas, utilities, and individual septic systems.
18. Twenty-five percent (25%) or greater slope(s). When the term is used it shall apply to any twenty-five percent (25%) or greater sloped area on a parcel, lot, or project site which is both longer than 50 feet when measured in any horizontal direction and greater than 7.5 feet when measured vertically.

(Ord. 2003-17 § 1 (part), 2003; Ord. 2000-52 § 1 (part), 2000; Ord. 1998-50 § 1, 1998)

18.61.030 - Applicability.

A. Applicable Lands.
1. This chapter applies to any land parcel, lot, or project site containing slopes of fifteen percent (15%) or greater, which are both longer than fifty feet (50′) when measured in any horizontal direction and higher than seven and one-half feet (7.5′) when measured vertically.
2. This chapter does not apply to a lot that is located within a subdivision for which a complete tentative plat was filed with the county between August 11, 1998, and July 7, 2000, and for which the final plat has been recorded within 18 months after July 7, 2000. All lots on the final recorded plat shall comply with the grading requirements of Chapter 18.61 in effect prior to July 7, 2000, except that grading on all lots in a nonmass graded subdivision are subject to the grading requirements of section 18.61.054G of this ordinance.

B. Prohibited Development.
1. A rezoning to TR, RVC, CB1, CB2, CPI, CI1, CI2 or CI3 zone is not permitted on a land parcel, lot, or project site having an average cross slope of fifteen percent (15%) or greater.
2. Nonresidential conditional uses (refer to Chapter 18.97) within a rural or residential zone are not permitted on land parcels, lots or project sites having average cross slopes of fifteen percent (15%) or greater.
3. A rezoning for residential uses with overall densities greater than 1.20 residences per acre is not permitted on land parcels with an average cross slope greater than fifteen percent (15%) prior to the exclusion of any natural area.

(Ord. 2003-17 § 1 (part), 2003; Ord. 2000-52 § 1 (part), 2000)

18.61.040 - Protected peaks and ridges designations.

A. Initiation of Protection for Peaks and Ridges. The designation of protected areas for certain peaks and ridges shall be initiated by the board of supervisors or the planning and zoning commission or as part of the comprehensive plan update program (refer to Section 18.89.050).

B. Criteria for Evaluation. Peaks and ridges shall be evaluated for designation as protected areas using the following criteria:

1. The peak point or ridge line lies within one mile of a public preserve;
2. The peak point or ridge line is within 300 feet of land subject to the buffer overlay zone (Chapter 18.67);
3. The peak or ridge is a dominant feature in the surrounding landscape or constitutes a significant linking element of such geographic feature;
4. The peak or ridge is an extension of a mountain, major hill or ridge, or other significant terrain feature, from a designated public preserve.
5. The peak or ridge is visible from a scenic route or a road leading to a designated trailhead;
6. The peak or ridge is visible to the community at large.

C. Level One and Level Two Designation. The board of supervisors shall designate protected peaks and ridges as level one or level two protected areas based upon their prominence and visibility to the community at large, with level one protected peaks and ridges being the most prominent and dominant.

1. A level one peak or ridge has communitywide viewshed significance based on the criteria one through six.
2. A level two peak or ridge may meet one or more of the criteria one through six. A level two peak or ridge shall include a topographic feature that has dominance in a local neighborhood area and has some degree of local viewshed significance. However, unlike a level one peak or ridge, a level two peak or ridge does not have communitywide view-shed significance or the likelihood for future inclusion into a public preserve.
3. Development is prohibited in level one protected areas, except as permitted by this chapter.
4. View mitigation standards shall be complied with for all development in level two protected areas in accordance with this chapter.
5. All protected peaks and ridges adopted prior to the effective date of this ordinance are designated as level one protected areas.

D. Public Notice Procedure for Designation.

1. Planning and zoning commission public hearing: A minimum of fifteen (15) days prior to the hearing, the planning division shall provide notice by:
   a. Publication once in a newspaper of general circulation in the county seat;
   b. Posting of the property or area to be considered at the hearing; and
   c. Mailing written notice to all property owners of the proposed protected peak or ridge, as defined by its proposed protected area, and all property owners within a minimum 1,000 feet of the proposed protected area.
2. Board of supervisors public hearing. As required for the commission.
3. Expansion of notice. The commission or supervisors may expand the notification area to greater than 1,000 feet, which shall be noticed prior to a public hearing.
4.

Failure to provide notice. Notice is based on the ownership of the property as shown on the county assessor records. The unintentional failure to give written notice to a property owner or the unintentional omission of the name of a property owner shall not invalidate an action of the commission or supervisors.

E. Map Notation. Protected peaks and ridges, and their protected areas, shall be shown on county zoning maps by their underlying zone designation plus the suffix PR-1 for level one features and PR-2 for level two features.

(Ord. 2003-17 § 1 (part), 2003; Ord. 2000-52 § 1 (part), 2000)

18.61.041 - Protected peaks and ridges standards.

A. Development Restrictions in and near Protected Areas.

1. All development is prohibited within the protected area of a peak or ridge except with a special use permit, level two permit, or addition permit as provided in this chapter.
2. On land parcels approved for rezoning after August 11, 1998, all development is further prohibited within one hundred fifty feet (map distance) from a level one protected area.
3. All development within a level two protected area must comply with the level two protected area mitigation standards as provided in this chapter.

B. Color Requirements in and near Protected Areas. All exposed exterior walls and roofs of buildings (unless a roof is screened by a parapet wall extending at least three feet above the building), retaining walls, accessory structures, roads and utility structures located within the protected area of a peak or ridge or within a horizontal radius (map distance) of three hundred fifty feet from the protected area of a peak or ridge shall be earthtone in color to blend with the natural setting. Colors shall not exceed a light-reflective value of thirty-eight percent. The earthtone color palette is below in Section 18.61.041(C)(7).

C. Level Two Protected Area Mitigation Standards. All development within the level two protected area shall be reviewed for a level two permit with the following standards:

1. Native trees and shrubs shall be planted and spaced in at most twenty foot intervals to screen all building walls. An alternative vegetation that would achieve the same results may be used if approved by the planning official or his assigned designee. In all cases, fifteen-gallon plants or larger shall be used, and they must be connected to an irrigation system;
2. Roadway edges shall be revegetated in accordance with Section 18.61.055
3. Building height shall not exceed eighteen feet;
4. Roof mounted antennas shall not be visible above the roofline;
5. Development activity shall comply with Section 18.61.042(C)(3)(c) through (f);
6. Lighting shall be in accordance with the county outdoor lighting code (Title 15); and
7. Building wall colors shall be earthtone and selected from a color palette of browns, adobes, rusts, tans, beiges, sepias, olives, mauves, and grays.
8. The width of a private driveway that must cross the protected area of a level two protected peak or ridge shall not exceed ten feet, and the width of a private roadway providing two-way access that must cross the protected area of a level two protected peak or ridge shall not exceed eighteen feet.
9. All utilities that cross the protected area of a level two peak or ridge shall be underground, with no accessory utility structures allowed within the protected area of

the peak or the ridge, and the pathway to construct and install the utilities shall be completely revegetated.

D. Development Review Adjacent to Protected Peaks or Ridges.

1. When development is proposed within three hundred fifty feet of a level one or level two protected area, the developer shall submit to the development services department a topographic map (scale no smaller than one inch equals one-hundred feet with ten-foot contour intervals) delineating the protected area of the peak or ridge, the peak point or ridge line, and elevations.

2. This map shall be submitted in conjunction with a grading plan for building permit review purposes, tentative plat or development plan. This requirement shall also apply when a road or development is proposed within a protected area, subject to the granting of a special use or an addition permit in accordance with Section 18.61.042

E. Site Design Guidelines for Level Two Peaks and Ridges. Development within the level two protected area shall be guided by the adopted Site Design Guidelines for Level 2 Peaks and Ridges.

(Ord. 2011-2 § 14, 2011; Ord. 2004-21 § 1 (part), 2004; Ord. 2003-17 § 1 (part), 2003)

18.61.042 - Special use permits and addition permits for protected areas of level one peaks or ridges.

A. Special Use Permit within Level One Protected Areas of Peaks or Ridges.

1. The board of supervisors may grant a special use permit for development within the protected area of a level one protected peak or ridge when such development can be proven by the developer to serve a need that outweighs the need for the restrictions of Section 18.61.041(A).

2. No permit shall be issued that:

a. Is contrary to the purpose and intent of this chapter;

b. Allows a use not allowed on a property by other chapters of this code; or

c. Allows a use that substantially injures the use of adjacent property conforming to the restrictions of this chapter.

3. Grounds for issuing a special use permit shall not include:

a. That the issuance of the permit would allow a more profitable use; or

b. Any condition resulting from a division of land parcels made after July 1, 1976.

4. The supervisors may place conditions on the permit to carry out the purpose and intent of this chapter.

5. The permit shall be void if not used to obtain building permits within two years of its issuance. The permit shall run with the land, but only after the construction of any authorized structures.

B. Addition Permit within Level One Protected Areas of Peaks and Ridges.

1. An addition permit may be granted so long as the main use is permitted and is a legal nonconforming use within a level one protected area.

2. An addition permit applies to an addition to the property such as additions to the main use, accessory structures and uses, including guest houses, swimming pools, walls and similar structures within level one protected areas of protected peaks or ridges in accordance with the provisions of this subsection if the main structure or use is a permitted dwelling. The granting of an addition permit shall not waive or modify any applicable building or fire codes.

3. Standards. The director of the development services department or an assigned designee may grant an addition permit only after a finding is made that the visual impact can be minimized by applying all the following standards and only conditioned upon all the standards being addressed:
   a. The height of the property addition shall not exceed the highest point in elevation of the main dwelling;
   b. The addition shall be located in such a manner that views of the prominent land forms, unusual stands of vegetation, and public preserves are not obstructed. If the addition cannot be reasonably and practicably located as required by this section, the addition shall result in the least reasonably possible obstruction of such viewshed;
   c. Drainage from the property addition shall not adversely affect adjoining properties and public rights-of-way;
   d. The property addition shall not significantly interfere with the air temperature/solar radiation orientation of buildings on adjoining properties;
   e. The location of the property addition shall not impose objectionable noise levels or odors on adjoining properties;
   f. No additional utility poles shall be erected. All utilities shall be underground.
4. Notice to owners of affected properties.
   a. Mailed notice including a sketch plan shall be sent to property owners within one thousand feet of the subject property;
   b. The director of the development services department or an assigned designee may waive the giving of notice, if the applicant submits written consent of the addition permit by all property owners of affected property as defined in Section 18.61.042(C)(4)(a) above.
5. Decision by the director of development services or an assigned designee.
   a. The director of the development services department or an assigned designee shall review all the submitted information and provide a written response to the applicant;
   b. The response shall state the reasons for the decision if the request is denied;
   c. If the director of the development services department or an assigned designee approves the permit, it may be issued for the property addition.
6. Appeals or referrals to the board of adjustment.
   a. The applicant may appeal the decision of the director of the development services department or an assigned designee to the applicable board of adjustment in accordance with Section 18.93.030 to be treated as a variance request.
   b. If a protest to a proposed addition within the protected area of a peak or ridge is submitted in writing within fifteen days of the date of the mailing of notice by an owner of affected property, as specified above, the director of the development services department or an assigned designee shall refer the application to the board of adjustment to be heard in accordance with Section 18.93.030. Protests shall be based solely upon characteristics of the proposed property addition.
7. The director of the development services department or an assigned designee may refer any application to the board of adjustment to be heard in accordance with Section 18.93.030

8. A separate fee is required for appeals filed with the board of adjustment in accordance with the standard fee for variance applications (as specified in the Planning and Development Services Fee Schedule).

(Ord. 2003-17 § 1 (part), 2003)

18.61.043 - Application and public notice for special use or addition permit in protected areas.

A. Submittal Requirements. A request for a special use permit or addition permit for development within a level one protected area of a peak or ridge shall be made on an application form provided by the development services department. The application shall include the following:

1. A legal description of the subject site;
2. Signatures of the property owners of record or the authorized agent of the owner;
3. Letter of authorization if the property owner is represented by an agent;
4. A site plan showing color of proposed development, existing and proposed buildings and structures, access driveways, parking, utility easements, and distances from buildings and structures to property lines as well as to other buildings and structures;
5. An elevation drawing showing all existing and proposed buildings or structures and their building heights;
6. A revegetation plan (including rip-rapping) showing existing vegetation, graded areas to be revegetated, the manner of revegetation and revegetation time schedule;
7. A statement describing the ability and intent of the property owner to apply for necessary county permits within nine months of receiving approval of an addition and within two years of receiving a special use permit;
8. A statement describing how the proposal complies with the applicable standards in Section 18.61.042C for an addition permit and in Section 18.61.042A for a level one special use permit;
9. Any other information required by the development services department as reasonably necessary to evaluate the application;
10. An application fee in accordance with the planning and development services fee schedule.

B. Public Notice for Special Use or Addition Permits within Level One Protected Areas of Peaks and Ridges.

1. Public notice and meeting for level one special use permit. The request for a level one special use permit shall be considered by the board of supervisors at an advertised public hearing with mailed notice to owners of property within 1,000 feet of the subject protected area.
2. Public notice for level one addition permit. Pima County shall mail notice, including copies of the submitted sketch plan, to owners of property within 1,000 feet of the applicant's property lines. The director of the development services department or an assigned designee may waive the giving of notice if the applicant submits written consents to the modification signed by all owners of property within 1,000 feet of the applicant's property lines.
3. Failure to provide notice. Notice is based on the ownership of the property as shown on the county assessor records. The unintentional failure to give written notice to a

property owner or the unintentional omission of the name of a property owner shall not invalidate an action of the committee, commission, or supervisors.

(Ord. 2003-17 § 1 (part), 2003)

18.61.050 - Development mitigation and performance standards.

Unless otherwise expressly excepted by this chapter, the development mitigation and performance standards set forth in Sections 18.61.051 to and including 18.61.057 apply to any and all development on lands subject to this chapter.

(Ord. 2000-52 § 1 (part), 2000)

18.61.051 - Average cross slope calculations.

A. Average Cross Slope. A method of determining the cross slope of a parcel or project site, by using the following equation:

$$\frac{I \times L \times 0.0023}{A}$$

Where:

I	=	Contour interval (maximum 10′) in feet;
L	=	Combined length in feet of all contour lines measured on the parcel or project site;
0.0023	=	Conversion of square feet into acres × 100;
A	=	Project site or parcel area in acres.

B. The average cross slope shall be rounded off to the nearest whole number. When .5 or higher is computed, the number shall be rounded off to the next highest whole number.

C. The average cross slope of a parcel or project site proposed for residential purposes only may be reduced by establishing a natural area on the parcel or project site and revising the average cross slope calculation to delete the natural area from the equation.

D. Natural areas set aside in any division of land shall not be included in the average cross slope calculation, neither in the combined length of contour (L) nor in the project site area (A). The total acreage of the project site may be used to calculate the number of dwelling units based on allowable density, provided that all other applicable provisions of this section are met.

E. The average cross slope is used for determining slope density requirements for residential development only.

(Ord. 2000-52 § 1 (part), 2000)

18.61.052 - Slope density requirements.

A. On land parcels or project sites with average cross slopes of fifteen percent (15%) or greater, dwelling unit density shall not exceed that allowed by either the existing zoning on the parcel or the following table 18.61.052-1, whichever is more restrictive.

Average Cross Slope (%)	Average Area (acres) per Dwelling Unit (density)
15	1.0

16	1.12
17	1.25
18	1.37
19	1.5
20	2.0
21	2.25
22	2.5
23	3.5
24	4.5
25	6.0
26	7.0
27	8.6
28	10.4
29	12.8
30	16.0
31	23.5
32	31.0
33 and greater	36.0

B. The provisions of Section 18.61.052A. do not apply to residential development on unsubdivided land parcels recorded in the county recorder's office prior to July 1, 1976.

C. If land parcels are divided or used for multifamily development after July 1, 1976, all appropriate provisions of this chapter shall apply.

D. Land parcels recorded with the county recorder's office after July 1, 1976, and prior to August 11, 1998, that are less in area than the required area per dwelling unit may be developed with a single dwelling unit, provided that all other applicable requirements of this chapter and code are met including the set-aside of natural area set forth in Section 18.61.053. All of the land area on the parcel outside of the allowable amount of grading shall be restricted as natural area in conformance with the requirements of 18.61.053C.

E. The slope density requirements shall not apply when the cluster development option (refer to Section 18.09.040) is used on land parcels with an average cross slope of less than twenty percent (20%), as calculated prior to the exclusion of natural areas.

F. The slope density requirements in Table 18.61.052-1 shall not apply to Conservation Subdivisions (Section 18.09.100) with an average cross slope of twenty percent (20%) or less provided that such Conservation Subdivisions have a minimum average area per dwelling unit of one (1) acre.

(Ord. 2001-22 § 2, 2001; Ord. 2000-52 § 1 (part), 2000)

18.61.053 - Natural areas.

A. Grading or development shall not be permitted within the legally described boundaries of a natural area except as follows:

1. If utility or sewer trenches cannot reasonably be provided without crossing natural areas of the project site, such trenches may be permitted, provided they are revegetated in accordance with Section 18.61.055

2. Development within previously disturbed parts of a natural area for the purposes of plant enhancement and mitigation is permitted in conformance with the natural area mitigation provisions in Section 18.61.055.D.5.

B.

Natural areas are to be established as large contiguous areas, rather than small, disconnected areas scattered over the site. Natural areas are permanent, once established and recorded.

C. Natural areas shall be surveyed and clearly delineated in a surveyable manner on all final plats, development plans, and grading plans submitted with building permit applications, and shall be sealed by a registered land surveyor. Natural areas shall be clearly labeled "HDZ Natural Area" on final plats, development plans and grading plans, and the plat or survey shall be recorded.

D. Natural areas shall be incorporated into a subdivision plat as either a portion of privately owned lots or as land parcels under the ownership of a homeowners' association. Where natural areas are located adjacent to major public parks, such areas may be deeded to Pima County, subject to approval by the county parks and recreation department and acceptance by the board of supervisors.

E. Land parcels which include a natural area designation shall not be further divided.

(Ord. 2000-52 § 1 (part), 2000)

18.61.054 - Grading requirements.

A. Except as otherwise provided herein, the following requirements of this Section 18.61.054 shall apply to grading on any land that is subject to this chapter, as determined by Section 18.61.030. A.1 and A.2.

B. Exceptions. Grading on a land parcel, lot or project site is not subject to the requirements of Section 18.61.054C., G.1., G.2., G.4., G.5., and H.1 if any one of the following apply:

1. Exclusion of fifteen percent (15%) slopes. When all of the fifteen percent (15%) or greater slopes are excluded from that portion of the parcel, lot or project site proposed to be graded.

2. Incidental encroachment. If the grading or disturbance of fifteen percent (15%) or greater slopes does not exceed 100 square feet on an individual graded residential lot or 1,000 square feet on a mass graded subdivision or a "Development Category 1" project, as shown in the Grading Requirements Table 18.61.054-1.

3. Vehicular access. If the grading or disturbance of fifteen percent (15%) or greater slopes is limited to grading for vehicular access as follows:

   a. Within an unsubdivided, single residential lot or a single residential lot not located in a mass graded subdivision:

      1) A single lane, twelve feet (12′) wide driveway, with a maximum six feet (6′) wide graded area on either side of the driveway, that extends from the property line to the garage or carport, and no possible practicable access alternative exists that will avoid grading slopes of fifteen percent (15%) or greater; or

      2) A recorded vehicle access easement that provides access to two (2) or more residential lots.

   b. For a mass graded subdivision or a Development Category 1 project as set forth in the Grading Requirements Table 18.61.054-1, grading is for an access street(s) that provides access from the property line to the mass graded area. This exception does not apply if the access street(s) encroaches into twenty-five percent (25%) or greater slopes, unless there is no practicable alternative to grading twenty-five percent (25%) or greater slopes for the access street(s).

4.

Existing grading. When the grading or disturbance of slopes of fifteen percent (15%) or greater is limited to areas of existing, non-permitted grading and disturbance on a lot, parcel, or project site, provided that all of the following apply:

a. The existing grading and disturbance occurred two (2) years or more before the effective date of the ordinance that establishes this provision, and

b. The existing grading and disturbance was not created during the current owner's ownership of the lot, parcel, or project site.

c. An application for a building or grading permit on a lot that meets the preceding conditions in 1) and 2) shall be accompanied by a mitigation and revegetation plan which mitigates the existing grading and disturbance in conformance with the requirements of Section 18.61.055D.

5. Building envelopes delineated on a recorded plat. If a grading envelope or building envelope is described on a lot in a subdivision plat recorded prior to July 7, 2000, the platted lot is exempt from the grading requirements of Section 18.61.054C., G.1., G.2., G.4., and G.5. However, grading within a platted building envelope on a lot is subject to the six foot (6′) grading limitation in Section 18.61.054G.3.e.

6. When a lot to be individually graded is located within a CR-1 cluster development option subdivision (Section 18.09.040) or a CR-1 lot reduction option subdivision (Section 18.09.050) recorded prior to August 11, 1998; provided, however, that grading on the lot complies with the horizontal grading limitations in Section 18.61.054G.4.

a. Natural open space is required by the plat; and

b. Such natural open space is described on the plat as a common area, or an easement or a dedication to the public, or any combination thereof; and

c. The natural open space so reserved has been maintained in a substantially undisturbed condition.

C. The total area of all grading shall conform with the grading requirements in the Grading Requirements Table 18.61.054-1 except as modified by other provisions in Section 18.61.054

Grading Requirements Table 18.61.054-1

Development Category	Parcel/Lot Size Per Dwelling Unit	Grading Calculation	Maximum Grading
1. Multiple dwellings/business offices/existing commercial and industrial (mass graded)	varies	80% of the project site	80% of the project site
2. Single attached or detached dwelling units (mass graded subdivisions)	<20,000 sq. ft.	50% of the project site *	50% of the project site *
3. Single detached dwelling units (individually graded lots)	<20,000 sq. ft.	50% of the lot	50% of the lot
4. Single detached dwelling units (individually graded lots)	20,000 sq. ft. to 43,560 sq. ft. **	10,000 sq. ft. or 40% of lot, whichever is greater	10,000 - 17,424 sq. ft.
5. Single detached dwelling units (individually graded lots)	>43,560 sq. ft. to 72,000 sq. ft.	17,425 sq. ft. or 30% of lot, whichever is greater	17,425 - 21,600 sq. ft.

6. Single detached dwelling units (individually graded lots)	>72,000 sq. ft. to 144,000 sq. ft.	21,601 sq. ft. or 17% of lot, whichever is greater	21,601 - 24,480 sq. ft.
7. Single detached dwelling units (individually graded lots)	>144,000 sq. ft. to 180,000 sq. ft.	24,481 sq. ft. or 15% of lot, whichever is greater	24,481 - 27,000 sq. ft.
8. Single detached dwelling units (individually graded lots)	>180,000 sq. ft.	27,001 sq. ft. or 10% of lot, whichever is greater.	27,001 sq. ft.

* Under Section 18.61.054.H.1., grading may be increased in 5% increments for each 10% of the site that is not on 15%+ slopes, up to a maximum of 70% of the site.

** Minimum lot size: cluster option and standards in riparian areas have their own set-aside calculations.

D. All grading shall be performed in accordance with Chapter 18.81, except as modified by this Chapter 18.61 and the Hillside Development Manual. The exceptions set forth in 18.81.020 (D) do not apply to fifteen percent (15%) or greater slopes.

E. The portions of the parcel, lot or project site to be left ungraded are to remain undisturbed and are not to be used for stockpiling of materials or excess fill, construction vehicle access, storage of vehicles during construction, or similar uses. Temporary fencing shall be installed in conformance with the Hillside Development Manual at the perimeter of the area to be graded in order to prevent encroachment into the undisturbed area.

F. Cut and Fill Requirements: General Requirements:

1. Except as modified by Sections 18.61.054G, H, or I, the vertical distance of an exposed slope shall not exceed fifteen feet (15′) as measured in:
   a. Fill areas. Lowest adjacent finished floor elevation (F.F.E.) to bottom of slope; or
   b. Fill areas. Lowest adjacent finished elevation of a deck, step or other non-vehicular paving area to the bottom of slope. The exposed slope shall be a minimum horizontal distance of twenty feet (20′) from any building roof and not a part of another structure higher than five feet (5′); or
   c. Cut areas. Lowest adjacent finished floor elevation (F.F.E.) to top of slope; or d. Cut areas where finished floor elevation has been placed below natural grade: Natural grade (N.G.) to top of slope.
2. No cut and fill shall encroach upon any floodplain, except as provided for in the floodplain management regulations (Title 16) or any adjacent properties except by the mutual written consent of all parties affected. Such consent is to be filed with the development services department.
3. Excess cut or fill material shall not be disposed of over the sides of hills or ridges, or on a project site, but instead shall be hauled off the site in accordance with the requirements of Chapter 18.81 (Grading Standards).

G. Individually Graded Lots. The following provisions apply on single, unsubdivided residential lots or single residential lots not located within a mass graded subdivision:

1. Grading increases. Except as provided in paragraph G.2 of this section, the maximum grading area in the Grading Requirements Table 18.61.054-1 may be increased for:
   a.

Grading areas located on less than fifteen percent (15%) slopes for the following:

1) roof area of a dwelling and accessory buildings meant for human occupancy subject to a fifty percent (50%) area limitation for that portion of a roof overhang or cantilever that extends more than six feet (6′) beyond exterior walls;

2) septic field, and utility areas.

b. Grading within a utility easement or a vehicular access easement that provides the only legal access to the subject lot and one (1) or more additional lots.

c. One (1) single lane, maximum twelve feet (12′) wide driveway except that an increase for grading into fifteen percent (15%) or greater slopes shall be allowed only when there is no other practicable alternative to the encroachment.

2. Grading increases permitted under subsection G.1. above are prohibited when grading encroaches into a twenty-five percent (25%) or greater slope, except that the following grading of twenty-five percent (25%) or greater slopes does not prohibit the grading increases:

a. A maximum five hundred (500) square feet;

b. A single lane twelve foot (12′) wide driveway with a maximum six foot (6′) wide shoulder that encroaches into twenty five percent (25%) or greater slopes and there is no practicable alternative to the encroachment;

c. A utility easement, if the development services department determines that a utility trench in the driveway is not a practicable alternative;

d. A recorded vehicular access easements that provides the only legal access to 2 or more lots.

3. Cut and Fill Requirements.

a. The cut and fill requirements in Section 18.61.054F. apply, except that any exposed slope with a vertical distance greater than ten feet (10′) shall include planting areas and terraced plant benches as follows:

1) a minimum six foot (6′) wide planting area at the toe of the exposed slope; and

2) a minimum six foot (6′) wide terraced plant bench at the ten foot (10′) height of the exposed slope; and

3) planting areas and plant benches shall extend the length of the exposed slope; and

4) the planting areas and plant benches shall be vegetated with plants in conformance with the revegetation standards in Section 18.61.055D.5.

b. Exposed fill slopes shall be separated by a minimum twenty-foot (20′) wide enhanced natural area buffer, except that the exposed fill slopes may be connected by a maximum six-foot (6′) wide walkway in the natural area buffer.

c. Any combination of exposed slopes on a lot with a combined vertical distance greater than ten feet (10′) shall have:

1) a minimum six-foot (6′) wide planting area adjacent to the toe of each exposed slope; and

2) planting areas shall extend the length of their adjacent exposed slopes.

d. All planting areas shall be vegetated in conformance with the requirements of Section 18.61.055D.5.

e. The vertical distance of a driveway exposed slope shall not exceed six feet (6′) measured from the outer edges of the driveway and shoulders cross section, except that the six foot (6′) vertical limitation may be increased if the planning official confirms that there is no practicable alternative to the increase.

4. Grading shall not extend more than six feet (6′) horizontally beyond the structural development perimeter and six feet (6′) on either side of the center line of a utility trench. The six foot (6′) horizontal limitation beyond the structural development perimeter may be increased to a maximum of twelve feet (12′) on slopes greater than fifteen percent (15%) that extend upward and are perpendicular to the structural development perimeter.

5. Additions and expansions. New grading required for an addition or expansion on a lot inclusive of temporary access roads and construction roads shall comply with the requirements of Chapter 18.61 subject to the following provisions:

   a. If new grading encroaches into 15% or greater slopes, then the grading requirements of Section 18.61.054C., G.1., and G.2. apply for the total grading area inclusive of new and existing grading.

   b. If new grading does not encroach into 15% or greater slopes, then new grading is exempt from the requirements of Section 18.61.054C., G.1., and G.2.

6. Freestanding walls and retaining walls not a part of a building:

   a. In a yard abutting a street, the total height of freestanding walls, retaining walls, or any vertical combination thereof that are separated horizontally from each other by less than six feet (6′), shall be a maximum six feet (6′); and

   b. The total vertical distance between the highest point of a building's parapet, mansard roof, or roof ridgeline and the lowest natural grade adjacent to the building or adjacent to a freestanding wall, retaining wall, or riprap slope located less than twelve feet (12′) from the building shall not exceed the maximum building height permitted by the zone.

   c. The top of any freestanding wall or retaining wall not located in a yard abutting a street and not a part of the dwelling, shall not exceed ten feet (10′) above the highest first floor elevation of the dwelling, except that a retaining wall more than ten feet (10′) above the highest first floor elevation that is finished with a veneer rock facing is allowed.

   d. All other freestanding walls and retaining walls not regulated in subsection a. through c. above shall be a maximum ten feet (10′) high from existing natural grade to top of wall.

7. Mitigation of walls and riprap. Freestanding walls, retaining walls, and riprap allowed by sections 18.61.054G.6. and 18.61.055, that are more than four feet (4′) high that face outward from a dwelling and are located in a yard abutting a street, and all other walls and riprap higher than six feet (6′) located in other yards and that face outward from a dwelling shall include the following minimum plantings:

   a. One 15-gallon can tree spaced at an average twenty five (25) horizontal feet; and

   b. Four 5-gallon can shrubs between every two trees and all planting areas shall be hydroseeded;

   c. These plantings shall be added within six (6) horizontal feet beyond the toe of the wall or riprap. All plantings shall be in conformance with the revegetation

plants in Section 18.61.055D.5. and the requirements of the Hillside Development Manual.

8. Riprap placement. Riprap shall not be placed on slopes less than 3:1, except as part of an access bridge, apron, or flood control structure or channel that conveys runoff from off-site.

H. Mass-graded residential subdivisions. The following provisions apply to mass-graded residential subdivisions:

1. Grading increases. For each ten percent (10%) of a project site that is on less than fifteen percent (15%) slopes, the maximum grading area permitted in the Grading Requirements Table 18.61.054-1 on the project site may be increased in five percent (5%) increments, up to a maximum seventy percent (70%) of the project site, provided that:
   a. The maximum amount of grading of fifteen percent (15%) or greater slopes does not exceed fifty percent (50%) of the area on the project site containing such slopes;
   b. The five percent (5%) incremental increase does not apply to project sites on which any grading encroaches into twenty-five (25%) or greater slopes with the following exception:
      1) When the grading and disturbance of twenty-five percent (25%) or greater slopes does not exceed five hundred (500) square feet.
      2) The five percent (5%) incremental project site grading increases permitted above may apply to grading of twenty-five percent (25%) or greater slopes in excess of five hundred (500) square feet for internal project streets, but only if there is no practicable alternative to encroaching in excess of five hundred (500) square feet, and the encroachment into twenty-five percent plus (25%+) slopes for internal project streets is reviewed and approved by the DRC.
      3) When the grading and disturbance of twenty-five percent (25%) or greater slopes is for access roads from the subdivision boundary to the mass graded area and there is no practical alternative to grading of 25% or greater slopes for access roads.

2. Cut and fill requirements for mass graded subdivisions. The cut and fill requirements in Section 18.61.054F. apply subject to the following provisions:
   a. The vertical distance between adjacent finish floor elevations (F.F.E.) on two (2) adjoining residential lots shall be a maximum fifteen feet (15′), and
   b. An exposed slope greater than ten feet (10′) high shall include a minimum six foot (6′) wide planting area running the length of the toe of the exposed slope; and
   c. The planting area shall be planted in conformance with the vegetation requirements of Section 18.61.055D.5. and the Hillside Development Manual.
   d. Exception. The cut and fill requirements in this Section 18.61.054H.2.a. through c. above and Section 18.61.054F. do not apply to Perimeter Exposed Slopes and Perimeter Walls.

3. Perimeter Exposed Fill Slopes And Perimeter Walls:
   a. The height of a perimeter wall shall not exceed six feet (6′) from finished grade;
   b. The height of a perimeter exposed fill slope shall not exceed six feet (6′) above the average natural grade, except that the height from natural grade shall not

exceed eight feet (8′) over a maximum eighty feet (80′) horizontal section and the horizontal section shall have a minimum six foot (6′) wide planting area adjacent to the bottom of the horizontal section in conformance with the vegetation requirements of Section 18.61.055D.5. and the type and amount of planting specified for a hillside bufferyard in the HDZ Manual;

c. The combined heights of a perimeter exposed fill slope plus a connected or adjacent perimeter wall shall not exceed twelve feet (12′) above the average natural grade;

d. Wherever the combined height of a perimeter exposed fill slope and a connected or adjacent perimeter wall exceeds twelve feet (12′) above natural grade, the perimeter exposed fill slope and the perimeter wall shall be separated by a minimum six feet (6′) wide planting area in conformance with the vegetation requirements of Section 18.61.055D.5. and the type and amount of planting specified for a hillside bufferyard in the Hillside Development Manual. The planting area and the adjacent or connected perimeter exposed fill slope may be included in the required bufferyard;

e. Except for retaining walls, perimeter exposed fill slopes shall be no steeper than three horizontal to one vertical (3:1) and vegetated in conformance with Section 18.61.055D.5. and the type and amount of planting specified for a hillside bufferyard in the Hillside Development Manual.

4. A Hillside Bufferyard in conformance with the requirements of the Hillside Development Manual is required along:

a. The boundary of a mass graded area exposed to a down-slope view from a public or private street; and

b. That portion of a mass graded subdivision that fronts on a public or private street.

5. Riprap placement. Riprap shall not be placed on perimeter exposed slopes or within a bufferyard except that riprap may be placed:

a. To stabilize 3:1 or steeper slopes adjacent to streets that access the subdivision; or

b. As part of a bridge, apron, or flood control structure or channel.

I. Development Category 1 Projects. The following provisions apply to development of multiple dwellings, business offices, commercial and industrial uses, which are described as Development Category 1 projects in the Grading Requirements Table 18.61.054-1:

1. Cut and fill requirements. Compliance with Section 18.61.054H.2.

2. Perimeter exposed slopes and perimeter walls. Compliance with Section 18.61.054H.3.

3. Hillside bufferyard. Compliance with Section 18.61.054H.4.

4. Riprap placement. Compliance with 18.61.054H.5.

(Ord. 2003-17 § 1 (part), 2003; Ord. 2000-88 § 1, 2000; Ord. 2000-52 § 1 (part), 2000)

18.61.055 - Site restoration requirements.

A. The restoration of a site shall be in accordance with Section 005 of the Grading Design Manual (refer to Chapter 18.81, Grading), the Hillside Development Manual and the additional requirements of this subsection.

B.

All slope treatment for subdivision streets shall be completed prior to the release of assurances for the subdivision.

C. All slope treatment and color requirements for residential lots and commercial developments shall be completed and approved by Pima County prior to the request for final inspection.

D. Vegetation retention and revegetation:

1. Vegetation retention and revegetation shall be in accordance with the requirements of this section, the vegetation and revegetation requirements of Chapter 18.72 (Native Plant Preservation), Chapter 18.73 (Landscaping, Buffering, and Screening Standards) and the Hillside Development Manual. In the event of a conflict between the requirements of this section, the Hillside Development Manual, Chapter 18.72 and Chapter 18.73, the most restrictive requirement shall apply.
2. Existing viable trees with four-inch or greater trunk diameter and viable cacti six feet (6′) or greater in height shall be preserved in their original locations, except for building locations and associated access, on site septic, and utilities.
3. When retention of the above viable trees and cacti in their original locations is not possible due to building, access, on-site septic and utility locations, trees and cacti with a medium to high rate of transplantability shall be salvaged and transplanted in areas requiring revegetation.
4. Cacti between one foot (1′) and less than six feet (6′) in height shall be preserved in their original location, except when retention of viable cacti between one foot (1′) and less than six feet (6′) in height is not possible in their original locations due to site grading and development, cacti with a medium to high rate of transplantability shall be salvaged and transplanted in areas requiring revegetation.
5. All exposed cut or fill slopes and all areas of grading and disturbance that are no steeper than three horizontal to one vertical (3:1) and all utility trenches or septic leaching fields that are not located in parking or driveway areas shall be revegetated. All plants used in revegetation shall be the same genus and species as the native vegetation on the site or any adjacent site prior to grading or clearing, except that plants listed in the buffer overlay zone approved plant list (refer to Chapter 18.67) and low-water use, drought-tolerant ground cover and seed mixes approved by the planning official, may also be used in revegetation. Plant benches and planting areas required by Section 18.61.054G.3 shall be planted in conformance with the revegetation requirements of this subsection.

E. Slope Stabilization. All slopes steeper than a ratio of three horizontal to one vertical (3:1), with the exception of retaining walls, shall be stabilized with properly engineered stone riprapping or sculptured rock as follows:

1. Stone riprapping shall be hand-placed on the slope;
2. The stabilization material used shall blend in with the natural appearance of the site or lot and the surrounding terrain;
3. Vegetation retention and revegetation shall be used in conjunction with riprapping, through the use of planting pockets on the stabilized slope.

(Ord. 2000-52 § 1 (part), 2000)

18.61.056 - Color requirements.

A. All exposed exterior walls and roofs of buildings (unless a roof is screened by a parapet wall extending at least three feet above the building), retaining walls, and accessory structures

that are visible from outside the land parcel boundary shall be earthtone in color and shall blend in with the natural setting. Colors shall not exceed a light-reflective value of 60 percent.

(Ord. 2003-17 § 1 (part), 2003; Ord. 2000-52 § 1 (part), 2000)

18.61.057 - Minor modifications.

A. The planning official may grant minor modifications not exceeding ten percent (10%) of the area, height, and width requirements of the development mitigation and performance standards Section 18.61.054 subject to the following:

1. The applicant's demonstration to the satisfaction of the planning official that the proposed alternative complies with the purpose of the HDZ chapter and the criteria for evaluating minor modifications in the hillside.
2. A request for a minor modification shall be made on application forms provided by the planning division and accompanied by a non-refundable modification fee in accordance with the fee schedule adopted by Pima County ordinance.

B. Exceptions. The planning official shall not grant a minor modification to the following:

1. The conditions of an exception granted by the DRC.
2. The requirements of Sections 18.61.040 through and including 18.61.053, 18.61.054A., B., D. through F., 18.61.054G.1. and 2., 18.61.054H.1. and 2., 18.61.054I., 18.61.055, 18.61.056, Grading Requirements Table 18.61.054-1 for development category 1 projects and development Category 2 projects (mass graded subdivisions).

(Ord. 2000-52 § 1 (part), 2000)

18.61.060 - Hillside development manual.

A. The Hillside Development Manual, a companion document to the HDZ Ordinance, contains technical requirements, implementation standards, guidelines, and procedures to promote compliance with this chapter.

B. The Hillside Development Manual is adopted by the board of supervisors' resolution and may be amended by resolution of the board of supervisors after a noticed public hearing and subject to the provisions of paragraph C below.

C. The board of supervisors shall refer all Hillside Development Manual amendments to the planning and zoning commission for the commission's recommendation which shall at the minimum determine whether or not the amendment complies with the purpose of the HDZ Ordinance Section 18.61.010. The commission may refer the amendment to the DRC for its review, comment, and a recommendation back to the commission.

(Ord. 2000-52 § 1 (part), 2000)

18.61.070 - Review procedures.

A. Subdivision Plats and Development Plans.

1. In addition to the requirements of Chapters 18.69 (Subdivision Standards) and 18.71 (Development Plan Standards), tentative subdivision plats and development plans submitted for county review shall depict all 15 percent or greater sloped areas, average cross slope (both before and after the exclusion of any natural areas), natural areas, and protected peaks and ridges. All plats and plans shall be prepared in conformance with the standards of the subdivision and development review committee (SDRC) and shall demonstrate conformance with this chapter.

2. Final plats. All final plats shall show natural areas and protected peaks and ridges, with the resultant protected area, in a surveyable manner. A note shall be placed on the plat indicating that the site is subject to the HDZ Overlay Zone.

B. Building Permits. A grading plan shall be submitted with a building permit application for any parcel subject to this chapter. A grading plan that includes grading on fifteen percent (15%) or greater slopes shall also require a building permit application for a dwelling unit or for an addition or expansion on a lot with an existing dwelling unit. When all proposed grading is on slopes less than fifteen percent (15%), the grading plan may be submitted separately from the building permit. In addition to the requirements of Chapter 18.81 (Grading Standards), the grading plan shall contain the following information:

1. Existing topography, with a minimum of two-foot (2′) contours within graded areas and ten-foot (10′) contours outside graded areas;
2. Average cross slope (for unsubdivided parcels only);
3. Natural area, if applicable;
4. Height and steepness of cut and fill slopes;
5. Plan for landscaping and stabilization of graded areas and slopes in conformance with Section 18.61.055

C. Compliance. The chief zoning inspector shall enforce the provisions of this chapter.

(Ord. 2003-17 § 1 (part), 2003; Ord. 2000-52 § 1 (part), 2000)

18.61.080 - Exceptions.

A. Exceptions to Development Mitigation and Performance Standards (Section 18.61.053 through and including 18.61.056).

1. The design review committee (DRC) (refer to Chapter 18.99) may grant exceptions to the requirements of the development mitigation and performance standards of Sections 18.61.053 through 18.61.056, if the proposed alternative complies with the intent of this chapter and if the material, method or work offered meets equivalent standards prescribed in this chapter for quality, effectiveness, durability and safety.
2. The decision of the DRC may be appealed to the applicable board of adjustment in accordance with the standards and procedures of Chapter 18.93 (Boards of Adjustment).

B. Board of Supervisors' Exceptions to Slope Density Requirements (Section 18.61.052).

1. The board of supervisors may grant an exception to the slope density requirements of Section 18.61.052, other than for the protected area of a peak or ridge, if the requirements prevent the reasonable development of the parcel, lot or project site.
2. The request for an exception shall be considered by the Supervisors at an advertised public hearing with mailed notice to owners of property within a minimum of three hundred feet (300′) of the subject area.

C. Submittal Information. Applications for an exception shall be submitted to the planning division and shall be accompanied by at least the following:

1. A legal description of the project site;
2. A site plan depicting the location of all existing structures, if any, and the location, dimensions, design and color of all proposed development and subject to the following:
   a.

A revegetation plan (including rip-rapping) showing existing vegetation, graded areas to be revegetated, manner of revegetation and revegetation time schedule;

b. An HDZ variance fee payable to the Pima County treasurer in accordance with the fee schedule adopted by Pima County ordinance.

c. An application submitted for an HDZ exception for a property for which an exception had been previously denied by the DRC shall include a new application, submittal, and fee, and a detailed and precise response to the DRC's basis for the previous denial as confirmed by the planning official. Applications that do not include a detailed and precise response shall be considered incomplete and not placed on an agenda for the DRC's review, and the incomplete application shall be returned to the applicant without refund of the fee.

D. Applicant Conformance with DRC Approval of an HDZ waiver: Prior to the issuance of a brushing, clearing, grubbing or grading permit, the planning official shall certify site plan and grading plan conformance with the DRC's approval except that grading area (square footage) requirements shall be certified by the county authority that issues grading permits.

(Ord. 2003-17 § 1 (part), 2003; Ord. 2000-52 § 1 (part), 2000)

18.61.090 - Conflict, enforcement, and interpretation.

A. In the event of a conflict between this chapter 18.61 and another zoning code chapter, the more restrictive requirement shall apply in conformance with one (1) or more purpose provisions in Section 18.61.010

B. In the event of a conflict between a waiver granted by the DRC, a minor modification granted by the planning official, or any other county requirement or regulation, the more restrictive requirements shall prevail.

C. Whenever a conflict arises in the enforcement of this chapter or more than one interpretation is possible, the purpose provision Section 18.61.010 shall serve as a guideline in resolving the conflict or interpretation.

D. A waiver granted by the DRC or the granting of a minor modification by the planning official shall not waive or modify building code or fire code regulations.

(Ord. 2000-52 § 1 (part), 2000)

18.61.100 - Illustrations and maps.

A. Illustrations. Reserved.

B. Maps. Index to maps for restricted peaks and ridges (See Index To Maps For Restricted Peaks & Ridges and Maps).

(Ord. 2000-52 § 1 (part), 2000)

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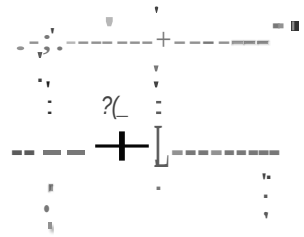

INDEX TO MAPS FOR RESTRICTED PEAKS &RIDGES

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Chapter 18.67 - BUFFER OVERLAY ZONE

Sections:

18.67.010 - Purpose.

A. The purpose of this chapter is to:

1. Preserve and protect the open space characteristics of those lands in the vicinity of the public preserves while at the same time permitting the economically reasonable use of lands;
2. Protect and enhance existing public preserves in Pima County as a limited and valuable resource;
3. Establish mechanisms that will protect the public preserves and result in an ecologically sound transition between the preserves and more urbanized development;
4. Assure the continued existence of adequate wildlife habitat and foster the unimpeded movement of wildlife in the vicinity of Pima County's public preserves;
5. Provide for an aesthetic visual appearance from and to Pima County's public preserves;
6. Promote a continued economic benefit to the region by protecting the public preserves for the enjoyment of residents and visitors alike; and
7. Neither promote nor discourage changes in underlying zoning, but rather provide continuing performance standards for the unique lands within the buffer overlay zone.

(Ord. 1998-51 § 3, 1998; Ord. 1988-16 § 1 (part), 1988)

18.67.020 - Definitions.

A. Certain terms used in this chapter shall be defined, for the purpose of this chapter only, as follows:

1. Class I habitat. The areas identified on the Critical and Sensitive Biological Communities Maps as Class I habitat.
2. Class II habitat. The areas identified on the Critical and Sensitive Biological Communities Maps as Class II habitat.
3.

Fence or wall: A structure intended for confinement, prevention of intrusion, boundary identification or screening of an activity or land use—includes fences and walls of four feet or less.

4. Land parcel: An area of land with boundaries recorded in the Pima County Recorder's Office.
5. Master plan development: An area consisting of one or more land parcels or a portion of a land parcel for which a master subdivision plat is to be recorded with the general intent that, in a phased manner, individual lots are to be resubdivided or be subject to a development plan.
6. Native: Growing in the Arizona portion of the Sonoran Desert, without cultivation, and not introduced after 1920. A plant which occurs within the range of Sonoran Desert plants, but only in Mexico, is not native.
7. Private area: A land area adjacent to a residential structure, enclosed by a fence, wall or native vegetative screening, and not exceeding one-half acre.
8. Public preserve: An area under public ownership and management that is designated at the federal, state, or county level as a special status recreation or conservation area.
9. Riparian habitat: An association of plant and animal communities containing a high density and diversity of species, occurring in, on or immediately adjacent to a watercourse. It is typically composed of mesquite, catclaw acacia, desert broom, whitehorn acacia and blue palo verde, providing uninterrupted vegetative cover.

(Ord. 1998-51 § 3, 1998; Ord. 1998-38 § 1 (part), 1998; Ord. 1988-116 § 1 (part), 1988)

18.67.030 - Applicability.

A. Public Preserves.

1. The following lands are designated as public preserves for the purpose of this chapter:
   a. Saguaro National Park (Rincon Mountain and Tucson Mountain districts);
   b. Tucson Mountain County Park;
   c. Coronado National Forest (Santa Catalina Mountains unit);
   d. Coronado National Forest (Santa Rita Mountains unit);
   e. Catalina State Park;
   f. Tortolita Mountain Park;
   g. Coronado National Forest (Whetstone Mountains unit) (rural);
   h. Coronado National Forest (Tumacacori Mountains unit) (rural);
   i. Coronado National Forest (San Luis Mountains unit) (rural);
   j. Cienega Creek Preservation Area;
   k. Colossal Cave Mountain Park;
   l. Empire/Cienega Resource Conservation Area;
   m. Santa Rita Experimental Range and Wildlife Area;
   n. Buenos Aires National Wildlife Refuge (rural);
   o. Organ Pipe Cactus National Monument (rural);
   p. Cabeza Prieta National Wildlife Refuge (rural);
   q. Coyote Mountains Wilderness Area (rural);
   r. Baboquivari Peak Wilderness Area (rural).

2. The boundaries of the above designated public preserves, for the purposes of this chapter, are the administrative boundaries of the public preserves as they existed on August 11, 1998.
3. Public preserves listed above that are noted "rural" are designated as rural public preserves.

B. Applicable Lands. The buffer overlay zone applies to:
1. That portion of a land parcel of 25 acres or more on August 11, 1998, which is located within one mile of a public preserve, except as noted in Subsection 18.67.030.C;
2. That portion of a land parcel of 25 acres or more on August 11, 1998, that is classified as either resource conservation (RC) or resource transition (RT) in the area adjacent to the Tucson Mountain section of Saguaro National Park and Tucson Mountain Park, lying within special area 5-01 Tucson Mountains North, as described in the document entitled Comprehensive Plan Regional and "Special Area" Plan Policies and as designated on the comprehensive plan land use plan;
3. Land parcels of 25 acres or more on August 11, 1998, located within the administrative boundary of a designated public preserve;
4. A rezoning request or a specific plan request, any portion of which is subject to the buffer overlay zone.

C. Excluded lands:

The buffer overlay zone does not apply to:

1. Any portion of a land parcel that is located more than one mile from a designated public preserve, except as noted in Subsection 18.67.030.B;
2. That area within the Mount Lemmon community plan as adopted by the board of supervisors on April 7, 1980;
3. Any portion of a land parcel that is located more than one-quarter mile from the Cienega Creek Preservation Area as shown on Exhibit 1 to Ordinance 1998-51 and county zoning maps.

D. Allowed uses: All uses of the underlying zone are allowed in the buffer overlay zone, except as may be restricted by a condition of rezoning or specific plan. The development standards of the underlying zone apply except when in conflict with this chapter, in which case, this chapter applies.

E. Map notation: Land subject to the buffer overlay zone shall be shown on county zoning maps by its underlying zone designation plus the suffix "BZ," except that subject land adjacent to a rural public preserve shall be shown on county zoning maps by its underlying zone designation plus the suffix "RBZ."

(Ord. 1998-51 § 3, 1998; Ord. 1998-38 § 1 (part), 1998; Ord. 1992-96 § 1 (part), 1992; Ord. 1988-116 § 1 (part), 1988)

18.67.040 - Critical and sensitive biological communities maps.

A. The board of supervisors shall by resolution adopt three critical and sensitive biological communities maps. They are:
1. Critical and Sensitive Biological Communities Map—Northeast Sector;
2. Critical and Sensitive Biological Communities Map—Southeast Sector;
3. Critical and Sensitive Biological Communities Map—Western Sector.

B. The maps may be amended by resolution of the board of supervisors after review by the planning and zoning commission.

C. Procedure for an amendment of a critical and sensitive biological communities map requested by an applicant for rezoning or specific plan:
   1. If a site analysis is not required, the applicant shall submit a report containing, at a minimum, responses to all vegetation and wildlife sections in the site analysis guidelines.
   2. The site analysis or report shall establish that the natural conditions of the site differ from that depicted on the map.

D. Class I habitat: Areas identified on the critical and sensitive biological communities maps as Class I habitat include:
   1. Deciduous riparian woodlands: Vegetative communities associated with perennial stream flows and generally composed of cottonwood, willow, ash, walnut, sycamore, and mesquite species;
   2. Mesquite bosques. Nearly continuous forest canopies of mesquite trees growing in association with water tables near the surface of annual or perennial streams: Blue palo verde and catclaw acacia also commonly occur in mesquite bosques;
   3. Lakes, ponds, and wetlands with adjacent plant cover;
   4. Important wildlife movement corridors: Desert or riparian habitats providing uninterrupted vegetative cover extending from a public preserve; and
   5. Major extensions of riparian habitat from public preserves: Riparian habitats are typically composed of mesquite, catclaw acacia, desert broom, whitehorn acacia and blue palo verde.

E. Class II habitat: Areas identified on the critical and sensitive biological communities maps as Class II habitat include:
   1. Major segments of riparian habitat not extending from a public preserve, containing a high density and diversity of plant and animal species;
   2. Palo verde-saguaro vegetation community: The upland habitat which is the dominant plant association in most of the foothills regions of the Tucson basin; and
   3. Ironwood plant community: A community in which ironwoods are the dominant species in association with saguaros and palo verde trees:

(Ord: 1998-51 § 3, 1998; Ord: 1998-38 § 1 (part), 1998; Ord: 1988-116 § 1 (part), 1988)

18.67.050 - Performance standards for issuance of permit.

A. Applicability.
   1. The performance standards of this section shall apply to new building construction of one thousand square feet or greater, except as specifically exempted in this section.
   2. Requests for rezonings and specific plans that include land subject to this chapter shall be evaluated for conformance to the performance standards of this chapter as part of the rezoning staff report to the planning and zoning commission.

B. Reserved.

C. Building color, reflective finish: All exposed exterior walls and roofs of buildings (unless a roof is screened by a parapet wall extending at least three feet above the building), retaining walls, and accessory structures that are visible from outside the land parcel boundary, shall be earthtone in color and shall blend in with the natural setting: Colors shall not exceed a light-reflective value of sixty percent: Mechanical equipment shall be screened and painted to reduce visibility.

D. Fences and walls:

1. Height: A fence or wall shall not exceed four feet in height unless it encloses an area of less than one-half acre, or a horse corral, dog kennel, swimming pool or spa.
2. Location: A fence or wall shall not be constructed:
   a. To delineate property boundaries unless the fence or wall is four feet or less in height; or
   b. In a location or manner that impedes wildlife movement through natural open space from and to off-site locations.
3. Barbed wire: If barbed wire fences are used, the fence shall contain no more than four strands of wire: The bottom and top wires shall be barbless and the middle wires may be barbed: The top wire shall be no more than forty-eight inches from the ground surface, and the bottom wire shall be no lower than sixteen inches from the ground.
4. Barbed wire fences not to exceed five feet in height are allowed for ranching or agricultural activities in areas adjacent to a rural public preserve: The fence shall not be structural.

E. Lighting.
1. External lighting shall be limited to that necessary to provide the functional requirements of safety, security and identification, and shall be in accordance with the county outdoor lighting code (Title 15).
2. Except for lighting that is attached to a building, light standards for roads, parking lots, driveways and all other outdoor areas shall not exceed forty-two inches in height and shall be in accordance the county outdoor lighting code (Title 15).
3. Tennis court and horse corral exception: Lighting for tennis courts and horse corrals shall be exempt from the restrictions of subdivision 1 of this subsection, but shall be in accordance with the county outdoor lighting code (Title 15).

F. Parking lots: Parking lots for nonresidential uses shall be located and screened by vegetation so that visibility from roadways and public preserves is reduced to the greatest extent possible.

G. Setback: No structure, parking lot, private driveway or road shall be placed within one hundred fifty feet of a public preserve, except that the setback shall be three hundred feet for any land parcel subject to a specific plan or a rezoning approved on or after August 11, 1998: An exception may be sought in accordance with Section 18.67.060

H. Utilities:
1. All new or relocated utility lines shall be placed underground, unless the relocated line is a one hundred fifteen kilovolt (or greater) transmission line: All utility lines relocated due to improvement projects shall be placed underground unless such relocated line is a forty-six kilovolt (or greater) transmission line.
2. Location of underground utility lines (including sanitary sewers) shall be planned, joint-trenched where possible, and located beneath the paved portions of roadways or within twenty-five feet of the edge of the paved portions whenever possible so as to minimize vegetative disruption.
3. When making upgrades and reinforcements to existing utilities, existing poles shall be used wherever possible to provide the required transition to underground service to new developments: However, a new pole, set in line with the existing overhead system, shall not be deemed to be a new utility when necessary to serve approved new developments: Upgrades and reinforcements of existing overhead utilities are allowed to the extent that the total number of cables is not increased.
4.

Areas adjacent to a rural public preserve are exempt from the regulations of this subsection H.

I. Vegetation:

1. Approved and prohibited plant lists: A buffer overlay zone approved plant list and a buffer overlay zone prohibited plant list, adopted by resolution, are incorporated in the landscape design manual, pursuant to Section 18.73.030
   a. The approved plant list shall include only native plants.
   b. The prohibited plant list shall include species that are incompatible with natural areas and public preserves or incompatible because of their mature height expectations.
2. Approved plants: Plants not on the approved plant list shall not be planted in the buffer overlay zone outside private areas, except that:
   a. All native species of cacti may be planted; and
   b. Native species not included on the approved plant list may be planted with the prior written approval of the planning director or authorized representative.
3. Private areas: Any plant not on the prohibited plant list may be planted in a private area, except for nonnative species of plant whose mature height may reasonably be expected to exceed the ridgeline of the highest adjacent structure.
4. Common areas: Only those plants on the approved plant list, or approved pursuant to subdivision 2 of this subsection, shall be planted in recorded common areas: A landscape or revegetation theme shall be established emphasizing the preservation and enhancement of native plant species: Natural open space common areas shall be further limited to on-site species.
5. Golf courses may be planted with Bermuda grass.
6. To the fullest extent possible, buildings and other improvements shall be sited so as not to disturb native trees, shrubs or cacti: Where removal of this plant material cannot be avoided, all reasonable efforts shall be made to relocate this plant material in to other areas located within the buffer overlay zone: Nursery-grown native species may be planted in lieu of salvaging mature on-site material at a 3:1 ratio, however at least thirty percent of the on-site material shall be salvaged when physical conditions permit: Should revegetation and replanting be necessary, only plant material listed in the approved plant list, or approved pursuant to subdivision 2 of this subsection, shall be used in public, recreation, or common areas.
7. The restrictions of this subsection shall be imposed as covenants running with the land for subdivisions and other development resulting from rezonings or specific plans approved in the buffer overlay zone.
8. Areas adjacent to a rural public preserve are exempt from the restrictions of this Subsection I.

J. Trails Access. Public access to trails identified in the Pima Regional Trail System Master Plan Map or successor shall be reserved in subdivisions in accordance with Section 18.69.040(D) (subdivision standards).

K. Washes. Washes identified on the critical and sensitive biological communities maps, and other washes identified by the criteria applied in the maps, shall be left in their predevelopment state, subject to the following exceptions and requirements:

1. Disturbance within the wash area deemed critical and sensitive shall be permitted in association with roadway, utility and trail crossings, however:
   a.

Encroachment for these crossings shall not reduce the width of the critical and sensitive wash area by more than twenty percent at any cross-section of the critical and sensitive area.

b. Additional reduction may occur only where necessary to provide floodwater retention requested by the Pima County flood control district or to provide for larger drainage structures so as not to impede movement of wildlife as approved by the Arizona Game and Fish Department; and

c. Erosion protection shall only be permitted within the critical and sensitive wash area to protect fill slopes required for roadway, utility and trail crossings: Erosion protection measures shall be designed so as to not hinder the movement of wildlife.

2. Mitigation Plans for Construction Impacts.

a. Construction impacts may affect up to ten percent of the low-flow channel length where defined channels exist, or up to ten percent of the length of the centerline of flow where braided or undefined channels exist, provided that a mitigation plan for any construction impacts within the critical and sensitive wash area shall be submitted to the Pima County flood control district together with a site plan, tentative plat or development plan.

b. The mitigation plan shall reflect predevelopment wildlife habitat and visual conditions as a baseline, and provide for post-development replacement with species on the approved plant list, or approved pursuant to subsection I.2 of this section, with a similar spatial arrangement that will result in re-establishment of predevelopment habitat conditions.

L. Functional Open Space.

1. Functional open space which does not impede wildlife movement and is within or immediately adjacent to an interconnected natural open space system shall be credited as natural open space at fifty percent.

2. Functional open space which does not impede wildlife movement, is part of an interconnected open space system and creates wildlife habitat opportunities shall be credited as natural open space at one hundred percent.

3. All other functional open space, including golf courses, shall receive no credit towards natural open space requirements.

4. On those parcels where no Class I or Class II habitat is present, or have no areas eligible to be designated as natural open space, one hundred percent of designated functional open space shall be credited as natural open space.

M. Reserved.

N. Natural Open Space. Thirty percent of the land subject to the buffer overlay zone shall be preserved as natural open space, except that fifty percent of the land subject to the buffer overlay zone shall be preserved as natural open space for any land parcel subject to a specific plan or a rezoning approved on or after August 11, 1998. The landowner may, and is encouraged to, preserve a greater percentage of natural open space. The natural open space shall form an interconnected system. The selection and treatment of lands comprising the natural open space requirement shall consist of the following:

1. One hundred percent of all Class I habitat area;

2. Any balance of acreage needed to achieve the natural open space requirement shall be composed primarily of Class II habitat areas, if available, or functional open space to be credited pursuant to subsection L of this section.

3. Boundaries of designated natural open space shall be surveyed and identified on the final plat or, where a plat is not required, may be described in:
   a. Covenants running with the land; or
   b. Conservation easement pursuant to Arizona Revised Statutes Section 33-271, et seq.; or
   c. Dedication to and acceptance by the county for the county parks system as natural open space;
   d. The building permit or zoning permit, where not otherwise designated by plat, covenant or conservation easement.
4. Master Planned Development. Boundaries of designated natural open space shall be surveyed and identified on a master subdivision plat. Minor alterations of the boundary may be allowed in a resubdivision of one or more lots of the master subdivision plat with the consent of the planning director provided that in so doing:
   a. The new boundaries are surveyed and identified on the resubdivision plat;
   b. The resubdivision does not create any less total amount of natural open space than shown on the master subdivision plat;
   c. The performance standards of this chapter are in no way diminished; and
   d. No special condition of a rezoning or specific plan is violated.
5. For land parcels located within the buffer overlay zone of the Cienega Creek Preservation Area, the one hundred-year floodplain and erosion hazard setback area shall be preserved as natural open space.

O. Visual Quality Standards.
1. This subsection shall apply only to the rezoning of land subject to this chapter.
2. All development in areas identified as having high visual sensitivity, according to the procedures set forth in county site analysis requirements, shall have minimal visual impact. Development in these areas shall be designed to be in harmony with the form, line, color, texture and scale of the existing landscape.
3. All development in areas identified as having medium visual sensitivity, according to procedures set forth in county site analysis requirements, shall remain subordinate to the existing landscape when viewed in the middle ground (one-fourth to two miles). Development in these areas shall be designed to be in harmony with the form, line, color and scale of the existing landscape.
4. Nothing contained in the visual quality standards shall limit uses or lessen densities otherwise allowed, but may govern specific location and design of the development.

(Ord. 2011-2 § 16, 2011; Ord. 2011-1 § 2 (part), 2011; Ord. 1998-51 § 3, 1998; Ord. 1998-38 § 1 (part), 1998; Ord. 1988-116 § 1 (part), 1988)

18.67.060 - Exceptions and variances.

A. General requirements for exceptions:
1. Exceptions to the requirements of the performance standards in Section 18.67.050 may be granted by the Pima County design review committee (DRC), except as otherwise noted in this section, when, due to the natural conditions of the site or other conditions beyond the control of the property owner, the performance standard would impose an undue hardship.
2. Procedure:
   a.

The applicant for an exception shall document and justify requested exceptions. The planning director, in consultation with the county engineer and the adjacent public preserve manager, or their authorized representatives, shall review the request and make a written recommendation to the DRC.

b. The DRC may grant exceptions to performance standards after a public hearing with notice to owners of property within 300 feet of the site.

c. The decision of the DRC may be appealed to the board of supervisors at a noticed and advertised public hearing. Written notice shall be provided to owners of property within 300 feet of the site.

3. Standards. An exception may not be granted unless:

a. The application demonstrates that the wildlife habitat value or visual quality of a land parcel is not diminished;

b. The exception will not be detrimental to the nearest public preserves; and

c. The exception is in harmony with the purpose of this code and chapter as well as the provision of this chapter from which the exception is requested.

4. Conditions. Conditions may be imposed on an exception that will:

a. Secure the purpose of this code and chapter as well as the provision of this chapter from which the exception is granted; and

b. Provide adequately for the protection of the nearest public preserves.

B. Exceptions to setback requirement (Section 18.67.050.G).

1. If a land parcel existing on August 11, 1998, and legally conforming to the development standards of the underlying zone, cannot be used because of the structure setback, then the land parcel shall be allowed a single dwelling unit, provided that all other applicable requirements of this chapter and code are met.

2. If a land parcel existing on August 11, 1998, and legally conforming to the development standards of the underlying zone, does not have reasonable access because of the setback, the private driveway or road may be located closer to the public preserve, provided that the planning director, after consultation with the manager of the nearest public preserve, determines that it is the minimum setback necessary to afford relief.

3. The property owner may appeal the decision of the planning director to a board of adjustment in the same manner as an appeal from a decision of the zoning inspector (refer to Chapter 18.93).

4. Signage within the setback shall conform to Chapter 18.79 (Sign Standards). Internally illuminated signs shall be designed to allow only the illumination of the sign copy. The source of illumination for internally illuminated signs shall not be visible from the public preserve.

5. A structure within three hundred feet of a public preserve shall have minimal visual impact and shall be designed to be in harmony with the form, line, color, texture and scale of the existing landscape.

C. Exceptions for Habitat Restoration or Enhancement.

1. Where determined to be biologically appropriate because of ecological benefits, requests for special exceptions to the performance standards of Section 18.67.050, including limited reductions in natural open space requirements, may be granted by the board of supervisors, after review by the adjacent public preserve manager, in exchange for restoration or enhancement of Class I and II riparian or upland habitat,

which provides, in the opinion of the Board, an equivalent satisfaction of the purposes of this chapter.

2. Detailed plans for proposed restoration or enhancement shall be provided. The plans shall include:
   a. A description of existing habitat and quantification by a standard biological technique of biological value;
   b. A proposed restoration/enhancement program;
   c. The quantification of biological value of the proposed plan as compared to the existing situation pursuant to paragraph a of this subdivision;
   d. Short-term and long-term maintenance plans; and
   e. Specific known examples of the successful application of such techniques as they relate to the species proposed for planting in a given location such as riparian or upland habitat.
3. Such requests, and a determination of appropriate incentives, if any, shall be considered pursuant to Section 18.67.060.A.

D. Variances to natural open space requirements (Section 18.67.050.N). A request for a variance may be made to the board of adjustment to reduce the minimum natural open space requirement for a single-family detached dwelling on a lot or parcel of five acres or less in accordance with the standards and procedures of Chapter 18.93 (Boards of Adjustment).

(Ord. 1998-51 § 3, 1998; Ord. 1988-116 § 1 (part), 1988)

18.67.070 - Rezoning and specific plan procedural requirements.

A. Applicability. This section applies to a rezoning or to a specific plan request, any portion of which is subject to the buffer overlay zone.

B. Notice.
1. Copies of the application for a rezoning request or for a specific plan request, any portion of which is subject to the buffer overlay zone, shall be sent to the managers of those public preserves within one mile of the land parcel and those neighborhood associations within one mile of the land parcel registered with the planning division.
2. Managers of public preserves and registered neighborhood associations within one mile of the land parcel shall be notified fifteen days prior to the date that the proposed exceptions under Section 18.67.060 go to the board of supervisors or the board of adjustment.

(Ord. 2009-59 § 6, 2009; Ord. 1998-51 § 3, 1998; Ord. 1998-38 § 1 (part), 1998; Ord. 1988-116 § 1 (part), 1988)

Chapter 18.72 - NATIVE PLANT PRESERVATION

Sections:

18.72.010 - Purpose and scope.

A. Purpose. The purpose of this chapter is to promote the preservation of individual plants and plant communities of protected and primarily upland plant species native to Pima County, Arizona, by adopting comprehensive requirements for the preservation-in-place, transplanting on-site, and mitigation of protected native plants and native plant communities.

B. Scope. This chapter provides requirements and regulations for the preparation and implementation of native plant preservation plans. These requirements promote protection of the public health, safety, and general welfare by reinforcing the findings in Section 18.72.020 of this chapter. Standards and procedures for implementing the requirements of this chapter are located in the native plant preservation manual adopted by resolution of the board of supervisors. Reference materials, guidelines, and administrative procedures for this chapter are available at the planning division.

(Ord. 1998-39 § 1 (part), 1998)

18.72.020 - Findings.

A. The preservation of protected native plants and native plant communities:

1. Promotes a sense of place and enhances community appearance;
2. Helps maintain a region's identity, which contributes to economic development by attracting tourism, new businesses, and business expansions;
3. Promotes and sustains property values, improves and helps maintain the quality of life, and supports life-styles which the community values and enjoys;

4. Contributes to the stabilization of desert soils, decreases erosion, and maintains original features of habitats that are important to native wildlife species;
5. Promotes water conservation by retaining established, existing drought-tolerant vegetation that requires no supplemental irrigation and minimal maintenance after establishment, and assists in climate modification to reduce energy costs;
6. Contributes to the reduction of nonnative plant allergens and the improvement of air quality by not requiring the preservation of nonnative allergen producing plants.

B. Native plants and native plant communities can be preserved by the following methods:
1. The preservation-in-place and set-aside of existing native plants and native plant communities;
2. The transplanting of native plants existing on-site to a new location on-site or the transplanting of existing native plants from an adjacent lot to a location on-site.
3. The mitigation of plants destroyed or removed from the site.

C. The most effective methods for preserving protected native plants are the set-aside of native plant communities and the preservation-in-place of individual protected native plants. Both methods minimize the disturbance of existing native plants, their understory plantings and animal habitats; and maximizes the preservation and beneficial effects of existing native plants and native plant communities. Transplanting and mitigation methods are progressively less effective but have merit. Transplanting and mitigation methods may be used in combination with the preservation in-place and set-aside methods.

(Ord. 1998-39 § 1 (part), 1998)

18.72.030 - Definitions.

A. The following definitions in addition to the definitions in Chapter 18.03 will apply to this chapter:
1. Caliper: A measurement of diameter taken on a circular tree trunk at twenty-four (24) inches above the highest natural grade at the tree trunk base; for a noncircular specimen, use the average of the shortest and longest measurements of diameter twenty-four (24) inches above the highest natural grade at the tree trunk base and for a multi-trunked specimen, use the sum of the measurements of diameter of the two (2) largest trunks twenty-four (24) inches above the highest natural grade at the tree's multi-trunk base.
2. Damaged: The condition of a viable inventoried plant previously identified on the approved native plant preservation plan as a preserved-in-place, salvage and transplant, replacement, or supplemental plant, which has little chance of survival in a healthy and attractive manner due to injury, infestation, or disease as confirmed by the monitor or the county.
3. Destroyed or destruction: The condition of an existing plant after it has been demolished or eliminated as shown on the approved native plant preservation plan.
4. Development: Any permitted or nonpermitted human alteration to land and its vegetation, soil, geology, drainage, hydrology and surface features; changing the appearance and character of land; and including but not limited to the acts of grubbing, clearing, and grading of land, and placing improvements on the land such as buildings, structures, signs, paving, vegetation, and outdoor use areas.
5. Drip line: For cacti, an area around the plant that overlays the mature root system: For trees and shrubs, an area under the undisturbed canopy of the tree or shrub.
6.

Endangered Species Act Of 1973: A federal law enacted for the protection of endangered and threatened species in the continental United States, also referred to in this chapter as "Endangered Species Act."

7. Mitigation: The replacement of a specimen(s), an inventoried plant(s) rated medium to high viability, that is destroyed or removed from the site as shown on the approved plant preservation plan with a plant(s) of the same genus and species from off site in good physical condition with a high rating for health, age, and form.
8. Native plant preservation plan: A plan for the preservation of protected native plants prepared and submitted in conformance with this chapter, also referred to as "preservation plan."
9. Native plant preservation manual: The standards and procedures for implementing the requirements of Chapter 18.72, Native Plant Preservation, also referred to as "preservation manual" or "manual."
10. Plant community: A biologic grouping of vegetation frequently found under natural conditions due to their common soils, moisture, climate and orientation requirements; also means a plant association.
11. Preservation-in-place: No disturbance of one or more plants and the associated understory plants, or no disturbance of a plant community as in the set-aside method: Preservation-in-place is promoted by site planning and design that retains existing plant genus and species in their current location, grade, and configuration and promotes their future health and growth.
12. Property owner, developer, applicant: The person(s) or legal entity that has fee title to the site or a legal right to control development of the site, or a designated representative on the property owner's behalf.
13. Protected native plant: Any living plant on the protected native plants list found in Table 18.72.040-1 Protected Native Plants: For the purpose of this chapter, also referred to as "native plant(s)."
14. Regulated riparian habitat areas: Also referred to as "riparian habitat" shall mean riparian habitat areas identified on the county's riparian habitat maps as established by Article X of the "Pima County Floodplain and Erosion Hazard Management Ordinance."
15. Riparian regulations: When used will mean Article X of the "Pima County Floodplain and Erosion Hazard Management Ordinance," entitled "Watercourse and Riparian Habitat Protection and Mitigation Requirements" which includes approved hydroriparian, mesoriparian, and xeroriparian plant and seed lists.
16. Safeguarded plants: All species listed in the "highly safeguarded" category of the Arizona native plant law, A.R.S: § 3-901 et seq.; also referred to as "safeguarded species."
17. Set-aside: A method of plant preservation identified in this chapter; shall also mean the permanent protection of land and all vegetation in an undisturbed state within an area designated as a set-aside area.
18. Site: Refers to a single lot or a combination of contiguous lots (or parcels), or a leased area on a lot that meets the minimum zoning standards of the applicable zone.
19. Specimen or specimen plant: A single inventoried plant (native plant or safeguarded plant) rated medium to high viability.
20. Transplantability: The relative ability of a native plant to be successfully transplanted.
21.

Viable plant, also a viable inventoried plant: An inventoried native plant in good physical condition with a medium or high rating for health, age and form, but which may or may not meet the "transplantability" standards of this chapter.

(Ord. 1998-39 § 1 (part), 1998)

18.72.040 - Protected native plants and safeguarded species.

A. For the purpose of this chapter, the plants in the following Table 18.72.040-1 Protected Native Plants are categorized as protected native plants and may be referred to as "native plant(s)."

B. For the purpose of this chapter, the plants in the following Table 18.72.040-1B Arizona Safeguarded Species have been categorized as Arizona safeguarded species in conformance with the requirements of the Arizona native plant law. For the purpose of this chapter, Arizona safeguarded species may be referred to as "safeguarded species." The board of supervisors may, from time to time, revise this table as required to comply with changes to the list of safeguarded species in compliance with the Arizona native plant law after first giving notice of the required change.

TABLE 18.72.040-1
PROTECTED NATIVE PLANTS

NO.	GENUS	SPECIES	VARIATION	COMMON NAME
1	Acacia	constricta		whitehorn acacia
2	Acacia	greggii		cat's claw acacia
3	Agave	species list[1]		century plant
4	Carnegiea	gigantea		saguaro/crested saguaro
5	Celtis	pallida		desert hackberry
6	Celtis	reticulata		canyon hackberry
7	Cercidium	floridum		blue palo verde
8	Cercidium	microphyllum		foothills palo verde
9	Chilopsis	linearis	arcuata	western desert-willow
10	Corypantha	scheeri	valida	needle-spined cory cactus
11	Corypantha	screeri	robustipina	pima pineapple cactus
12	Echinocactus	horizonthalonius	Nicholii	blue barrel cactus
13	Echinomastus	erectrocentrus	acunensis	
14	Echinomastus	erectrocentrus	erectrocentrus	needle-spined pineapple cactus
15	Ferocactus	species list[2]		compas barrel cactus
16	Fouqueria	splendens		coachwhip ocotillo
17	Mammillaria	thornberi		thornber clustered pincushion
18	Olneya	tesota		ironwood
19	Peniocereus	greggi	transmontanus	desert thread cereus
20	Peniocereus	striatus		dahlia-rooted thread cereus
21	Prosopis	velutina		velvet mesquite
22	Prosopis	pubescens		screwbean mesquite
23	Stenocereus	thurberi		thurber organ pine cactus
24	Yucca	species list[3]		soaptree yucca

	[1]Agave species list			
	Agave	chrysantha		century plant
	Agave	deserti	simplex	simple-rosetted desert agave
	Agave	murpheyi		hohokam agave
	Agave	palmeri		palmer agave
	Agave	parryi	parryi	parry agave
	Agave	parviflora		santa cruz striped agave
	Agave	schottii	treleasei	trelease agave
	[2]Ferocactus species list			
	Ferocactus	cylindraceus	eastwoodiae	cliff barrel cactus
	Ferocactus	cylindraceus	lecontei	leconte barrel cactus
	Ferocactus	emoryi		red-spined barrel cactus
	Ferocactus	wislinzenii		fishhook barrel cactus
	[3]Yucca species list			
	Yucca	arizonica		Arizona yucca
	Yucca	elata	elata	soaptree yucca
	Yucca	schottii		mountain yucca
	Yucca	thornberi		thornber yucca

TABLE 18.72.040-1B
ARIZONA SAFEGUARDED SPECIES*

NO.	GENUS	SPECIES	VARIATION	COMMON NAME
E	Agave	arizonica		Arizona agave
E	Amsonia	kearneyana		Kearney's blue-star
T	Asclepias	welshii		Welsh's milkweed
E	Astragalus	cremnophylax	cremnophylax	Sentry milk-vetch
T	Carex	specuicola		Navajo sedge
E	Coryphantha	scheeri	robustispina	Pima pineapple cactus
T	Coryphantha	robbinsorum		Cochise pincushion cactus
T	Cycladenia	humilis	jonesii	Jones cycladenia
E	Echinocactus	horizonthalonius	nicholii	Nichol's Turk's head cactus
E	Echinocereus	triglochidiatus	arizonicus	Arizona hedgehog cactus
E	Lilaeopsis	schaffneriana	recurva	Huachuca water-umbel
E	Pediocactus	bradyi		Brady pincushion cactus
T	Pediocactus	sileri		Siler pincushion cactus
E	Pediocactus	peeblesianus	peeblesianus	Peebles Navajo cactus
E	Purshia	subintegra		Arizona cliffrose
T	Senecio	franciscanus		San Francisco Peaks groundsel
E	Spiranthes	delitescens		Canelo Hills ladies' tresses

* As approved by the Department of the Interior in compliance with the Endangered Species Act of 1973

(Ord. 1998-39 § 1 (part), 1998)

18.72.050 - Applicability and exceptions.

A. Applicability. Except as provided in paragraph B below, the requirements of this chapter apply to all development for which any of the following conditions apply:

1. On sites for which a grading plan is required or the total area covered by all grading permits is fourteen thousand (14,000) square feet or more;
2. On sites for which approval of a development plan or subdivision plat is required and for which a tentative plat or development plan is first submitted:
   a. After the effective date of this chapter; or
   b. Prior to the effective date of this chapter and for which a final plat or development plan is not approved within one (1) year of the effective date of this chapter.
3. On sites with a subdivision plat or development plan that was approved more than one (1) year prior to the effective date of this chapter and for which permitted on-site infrastructure construction for at least one (1) of the following major site improvement categories has not commenced prior to the effective date of this chapter and has not been completed within one (1) year of the effective date of this chapter:
   a. Mass grading and drainage improvements;
   b. Water or sewer mains or treatment facilities; or
   c. Major streets.
4. On sites for which a preservation plan has been approved prior to the effective date of this chapter, except that only the requirements of Sections 18.72.120 and 18.72.140 apply to such sites.

B. Exceptions. The requirements of this chapter do not apply to the following:

1. Utility construction within a public utility easement or public right-of-way associated with a development plan, subdivision plat, or lot development.
2. Development on a lot recorded prior to the effective date of this chapter which meets the following conditions:
   a. A development plan or subdivision plat is not required and the total area covered by all grading, grading permits, and ground disturbance is less than fourteen thousand (14,000) square feet; or
   b. A development plan or subdivision plat is required and for which an analysis submitted by the property owner and approved by the planning official confirms that the net area of the lot is thirty-six thousand (36,000) square feet or less excluding the following:
      1) Pima County requirements for setbacks, open space, bufferyards. The required bufferyards may be increased up to fifty percent (50 percent) at the applicant's discretion subject to approval by the planning official. Plants added for the bufferyard increase will be from on-site native plants and/or selected from Table 18.72.040-1 Protected Native Plants List;
      2) Public rights-of-way, dedications, and easements;
      3) Set-asides to meet the requirements of other county, state, and federal regulations, ordinances and statutes.
3.

Development on a recorded lot which is thirty-six thousand (36,000) square feet or less in size, approved prior to the effective date of this chapter, and not requiring a development plan or subdivision plat.

C. Administrative exception. The requirements of this chapter may be waived by the planning official under the following conditions as demonstrated by the applicant's submittal of confirming documents in conformance with the requirements of Section 18.72.S07 of the native plant preservation manual:

1. The applicant demonstrates that development on his site will not disturb, damage, destroy, alter, or result in the removal or relocation of any specimens in Section 18.72.040 that existed on the site prior to the effective date of this chapter plus those specimens that have been introduced to the site since that date; or
2. The applicant demonstrates that the site on which his development is proposed did not contain any specimens before the effective date of this chapter and does not currently contain any specimens.

(Ord. 1998-39 § 1 (part), 1998)

18.72.060 - General requirements.

A. The following general requirements apply to all development as required in Section 18.72.050

1. No person shall destroy, mutilate, remove from a site, or relocate on a site any native plant, except in conformance with the requirements of this chapter.
2. Grubbing, grading, or clearing permits shall not be issued, and no person may grub, grade, or clear a site or any portion of a site having one or more native plants existing prior to the effective date of this chapter, except in conformance with an approved grading plan and after the preservation plan approval requirements in this chapter have been met, and the required permits have been issued.
3. No plans for a site with one or more native plants shall be approved and no permits shall be issued by Pima County for any development prior to submittal and approval of a preservation plan except as provided in Subsections 18.72.050 B and C.
4. A preservation plan and its implementation shall comply with this chapter, the preservation manual, and the Arizona Native Plants Statute (A.R.S. § 3-901 et seq.)

(Ord. 1998-39 § 1 (part), 1998)

18.72.070 - Professional qualifications.

A. Preservation plans shall be produced and stamped, sealed or certified by a qualified practitioner with one or more of the following qualifications:

1. An arborist with International Society of Arboriculture certification;
2. A landscape architect with Arizona state technical registration as a landscape architect;
3. A biologist, horticulturist, or botanist with a minimum B.A. or B.S. in a plant oriented natural resource field.

(Ord. 1998-39 § 1 (part), 1998)

18.72.080 - Preservation plan submittal, review, and appeal.

A. Consultation. Prior to the submittal of a preservation plan, the property owner is encouraged to consult with the planning division regarding specific submittal requirements.

B. Submittal. For projects requiring a preservation plan, submittals shall be made in conformance with the following requirements:

1. A preservation plan application shall be filed with the office of the subdivision coordinator for processing concurrently with the filing of grading plans and tentative plats or development plans for the same project.
2. All preservation plan applications shall include at a minimum all of the following:
   a. Two (2) hard paper copies of all preservation plan documents;
   b. One (1) integrated electronic copy of all reports, text, charts, graphs, tables, analyses, and calculations in an electronic format and media acceptable to the planning division;
   c. Number of copies as determined during preliminary consultation with the planning division for all other plan submittals; and
   d. The required preservation plan fee payable to the Pima County treasurer.
3. Incomplete submittals that do not comply with the submittal and preparation requirements of this chapter will not be reviewed. Incomplete submittals will be returned to the property owner with comments from the planning division explaining the area(s) of incompleteness.

C. Preservation plan review.

1. The planning division shall review the preservation plan for compliance with the requirements of this chapter and other applicable codes, regulations and special requirements.
2. Within ten (10) working days of a complete submittal, the planning division shall complete its review of the preservation plan and then notify the applicant in writing regarding any required revisions, corrections, or resubmittals, except that the ten- (10) day review period will not begin until the property owner has first submitted a grading plan and tentative plat or development plan for the project for county review. Preservation plans are reviewed by the planning division in the same manner and concurrent with other reviews for project grading plans, tentative and final plats and development plans. Comments regarding requirements for preservation plan corrections, revisions or resubmittals are coordinated with the preparation of comments for project grading plan, development plan, and tentative and final plat submittals to include the incorporation of plat and development notes and covenants, conditions, and restrictions (CC&Rs) to assure the continued preserved status of set-aside areas and preserved-in-place and transplanted specimens in a healthy and vigorous condition.
3. The applicant shall resubmit revised plans required by the planning division for final compliance review. The planning division shall complete its review of revised plans within five (5) working days of resubmittal and then provide the applicant with a written decision.
4. Any change to the underlying grading plan, development plan, tentative plat, or subdivision plat may require resubmittal of a new or revised preservation plan as determined by the planning official.

D. Variances and appeals.

1. A request for a variance of the requirements of this chapter or an appeal of an interpretation of this chapter by the development services department may be filed by a petitioner to the board of adjustment and processed as required by Section 18.93 of the Pima County zoning code.

a. The design review committee or a subcommittee established by the design review committee shall review variance requests and appeals of the requirements of this chapter and prepare an analysis and recommendation to the board of adjustment. The analysis and recommendation shall be submitted along with a staff report to the board of adjustment and presented by county staff at the board of adjustment's public hearing for the appeal.

b. The design review committee's analysis and recommendation to the board of adjustment shall consider the basis of the appeal and any extenuating circumstances due to no fault on the part of the applicant and the design review committee's recommendation will promote the purpose and findings of this chapter.

(Ord. 1998-39 § 1 (part), 1998)

18.72.090 - Native plant preservation plan methods.

A. Any of the following three methods, or any combination of the following three methods may be used to prepare a preservation plan, except as required in paragraph C. below:

1. Selective Plant Preservation Method.

a. Description. The selective plant preservation method is based on the preservation-in place and salvage and transplanting-on-site of specimens and the mitigation of specimens destroyed or removed from site.

b. Components. The preservation plan for the selective plant preservation method shall be prepared as an integrated, single document and shall include the following components. The requirements of each component are described in the following Section 18.72.100

i. An inventory of the native plants and safeguarded species on the site;

ii. A site and plant evaluation of the viability and transplantability of the inventoried native plants;

iii. A calculation of preservation and mitigation requirements;

iv. A native plant location/preliminary site plan which shows the location of preserved-in-place specimens, salvaged and transplanted specimens, replacement and supplemental plants, and specimen plants to be destroyed or removed from site on a preliminary site plan for the subject site.

2. Plant Appraisal Method.

a. Description. The plant appraisal method is based on the (1) preservation-in-place, (2) salvage and transplanting-on-site of specimens, and (3) the mitigation of specimens destroyed or removed from the site with specimens of the same size or appraised value.

b. Components. The native plant preservation plan for the plant appraisal method shall be prepared as an integrated, single document and shall include the following components. The requirements of each component are described in the following Section 18.72.100

i. An inventory of the native plants and safeguarded plants on the site;

ii. A site and plant evaluation of the viability and transplantability of the inventoried native plants;

iii. A calculation of preservation and mitigation requirements;

iv.

An appraisal of specimens proposed to be destroyed or removed from on-site;

v. A native plant location/preliminary site plan which shows the location of preserved-in-place specimens, salvaged and transplanted specimens, replacement and supplemental plants, and specimen plants to be destroyed or removed from site on a preliminary site plan for the subject site.

3. Set-aside Method.

a. Description. The set-aside method is based on an evaluation of the resource value of the specimens on-site, the designation of a minimum of thirty percent of the site with the highest resource value as a set-aside area as permanently protected natural open space, wherein development shall not occur, and the preservation in place or salvaging and transplanting on-site of safeguarded plants and specimen saguaros and ironwoods.

b. Components. The native plant preservation plan for the set-aside method shall be prepared as an integrated, single document and shall include the following components. The requirements of each component are described in the following Section 18.72.100

i. An inventory of all plants protected as safeguarded plants, all saguaros and all ironwood with a caliper of four inches or greater;

ii. A site and plant evaluation of the viability and transplantability of the inventoried safeguarded species, saguaro and ironwood;

iii. A calculation of preservation and mitigation requirements;

iv. A resource value report;

v. A native plant location/preliminary site plan which shows the location of the thirty percent set-aside areas, and the preserved-in-place or transplanted location of safeguarded plants and specimen saguaros and ironwoods outside of the boundaries of the set-aside areas.

B. Off-site mitigation option.

1. An applicant can request to provide off-site mitigation to satisfy a portion of the mitigation required by this chapter provided the applicant submits:

a. A concept plan for the off-site mitigation;

b. A narrative that demonstrates that the off-site mitigation provides more consistency with the purposes and findings of this ordinance than the allowable on-site alternatives, and that full compliance with on-site mitigation creates unsustainable and non-viable plant communities;

c. Description of the mechanism(s) that will provide perpetual management of the off-site mitigation; and

d. Authorizations, as necessary.

2. In the case where off-site mitigation is to be accomplished by participation in a conservation bank, submittal requirements shall also include:

a. The location(s) of the conservation bank;

b. The number of bank credits that will be provided for mitigation of each species; and

c. Demonstration that the number of bank credits is proportional to the number of individuals requiring mitigation.

3.

The planning director or designee is authorized to allow off-site mitigation when it has been found that the request is in keeping with the purpose and findings of this chapter. Off-site mitigation may be used only in combination with one or more of the three mitigation methods listed above.

C. Regulated Habitat. All regulated riparian habitat areas as identified on the county's riparian habitat maps shall be established as set-aside areas in compliance with the set-aside requirements in this chapter with the following exception. When it can be demonstrated that there is no "reasonable practical alternative" to disturbing the riparian habitat, that part of the riparian habitat so disturbed shall be excluded from the set-aside requirement. Riparian habitat so disturbed shall be mitigated in conformance with riparian regulations.

Table 18.72.090-1

Preservation Requirements & Preservation Credits

(ft = feet, C = caliper, D = diameter, H = height, PIP = preserved-in-place, TOS = transplanted-on-site)

Protected Native Plants		Safeguarded Species	Saguaros	Other Cacti	Ocotillos	Other Succulents & Shrubs	Ironwood Trees	Other Trees
Inventory of Viables		All	All	2+ ft H or D	2+ ft H or D	2+ ft H	4+ in. C	4+ in. C
Minimum PIP or TOS		[1] 100%	[2] 80%	50%	50%	50%	80%	50%
Preservation-in-place (PIP) credits		n/a	3 Saguaro credits/ each > 10 ft H saguaro PIP 2 saguaro credits/ each 6-10 ft H saguaro PIP	2 cacti credits/ each > 4 ft H same species	2 ocotillo credits/ each > 6 ft H ocotillo PIP	2 succulent credits/ each > 4 ft H succulent PIP same species	3 ironwood credits/ each 12-in. C ironwood PIP 2 ironwood credits/ each 6-12-in. C ironwood PIP	3 tree credits/ each > 12-in. C tree PIP 2 tree credits/ each 6-12-in. C tree PIP
Plant Replacement Ratios & Plant Additions								
Selective Plant Preservation	Each plant damaged, destroyed, or removed from site	n/a (plants are PIP or TOS[1])	[1, 2, 4] replaces 3:1	replace 2:1	replace 2:1	replace 2:1	replace 3:1	replace 3:1
	Each plant transplanted on site	[3] 1 additional plant	2 additional plants/ each ≥ 6 ft H 1 additional plant/ each < 6 ft H	1 additional plant	1 additional plant	1 additional plant	2 additional plants	2 additional plants
Plant Appraisal Method	Each plant destroyed or removed	n/a	[4] replace 1:1 (same size)	replace 1:1 (same size	replace 1:1 (same size)	replace 1:1 (same size)	replace 1:1 (same size)	replace 1:1 (same size)
	Each plant transplanted on site	[3] 1 additional plant	2 additional plants/ each ≥ 6 ft H // 1 additional plant/ each < 6 ft H	1 additional plant	1 additional plant	1 additional plant	2 additional plants	2 additional plants

Outside Set Aside Area								
Set Aside Method	Each plant damaged, destroyed, or removed from site	n/a	[4] replacement 3:1	n/a	n/a	n/a	replace 3:1	n/a
	Each plant transplanted on site	1 additional plant	[1] 2 additional plants/ each ≥ 6 ft H 1 additional plant/ each < 6 ft H	n/a	n/a	n/a	2 additional plants	n/a
Replacement Sizes								
Selective Plant Preservation Method & Set Aside Method		n/a	[5] 2 ft H (from site) 4 ft H (from off-site or from nursery)	[5] 2 ft H or D	2 ft H (from site) 4 ft H (from nursery)	5 gallon	15-gallon can size [6] for supplemental trees (2) 15-gallon cans plus (1) 24-in. box for 3:1 replacement trees	15-gallon can size [6] for supplemental trees (2) 15-gallon cans plus (1) 24-in. box for 3:1 replacement trees
Plant Appraisal Method		Same size or 2+ plants with total appraised value equal to plant being replaced						

[1] All crested saguaros 18 feet in height or greater or with arms six feet or greater in height will remain in place.

[2] All saguaros 18 feet in height or greater or with arms six feet or greater in height will remain in place.

[3] See Arizona native plant law.

[4] Except that all crested saguaros shall be preserved in place or salvaged and transplanted on site.

[5] Except blue barrel cactus, pineapple cactus, needle-spined pineapple cactus, desert night-blooming cereus, and thornber pincushion which have a minimum replacement size of four inches in height or diameter.

[6] Commercial nursery sizing.

(Ord. 2009-59 § 7, 2009; Ord. 1998-39 § 1 (part), 1998)

18.72.100 - Components of native plant preservation plan methods.

The plant preservation plan methods described in 18.72.090 shall include the following components:

A. Plant inventory: All methods require a plant inventory map and a plant inventory list prepared in conformance with the requirements of Section 18.72.S03 of the preservation plan manual and showing the following plants:
1.

All existing native plants in Table 18.72.040-1 that meet the following standards:

a. All saguaros;

b. All trees with a caliper of four (4) inches or greater;

c. All succulents and shrubs two (2) feet or greater in height or diameter;

d. Other cacti equal to two (2) feet in height or diameter or greater except that blue barrel cactus, fish hook cactus, compass barrel cactus, needle-spined pineapple cactus, desert night-blooming cereus, and thornber pincushion equal to four (4) inches or greater in height or diameter shall be inventoried; and

2. All existing plants listed as safeguarded plants.

3. Exceptions: Where the set-aside method is used, the following are not required to be listed in the inventory:

a. Any trees other than specimen ironwood;

b. All cacti, succulents and shrubs listed in 1.c. and 1.d. of this section.

B. Site and plant evaluation: All native plant preservation plan methods require a comprehensive analysis and evaluation of the undisturbed site and its native plants and safeguarded plants which shows the following:

1. The condition of each inventoried native plant, plant community, and safeguarded species listed in the plant inventory based on the viability and transplantability rating criteria and standards specified in Section 18.72.S04 of the preservation manual.

2. The criteria and standards used to determine which plants and plant communities will be set-aside, preserved-in-place, salvaged and transplanted-on-site, or destroyed or removed from the site.

C. Calculations: Preservation and mitigation requirements. Protected native plants and safeguarded plants shall be preserved-in-place, transplanted on-site, or mitigated as required by this paragraph and the following paragraphs D through and including G and as demonstrated by Table 18.72.090-1.

1. Safeguarded plants and "crested" saguaros: One-hundred percent (100%) of safeguarded plants and "crested" saguaros shall be preserved-in-place or salvaged and transplanted on-site, except that all "crested" saguaros eighteen (18) feet in height or greater and "crested" saguaros with arms six (6) feet or greater in height shall remain in place, and

2. For the selective plant preservation and plant appraisal methods, the minimum requirements for the preservation-in-place, salvage and transplanting-on-site, and mitigation of inventoried native plants and safeguarded plants are:

a. All other saguaros and ironwoods: A minimum of eighty percent (80%) of the inventoried saguaros and specimen ironwood trees shall be preserved-in-place or salvaged and transplanted-on-site, except that all saguaros eighteen (18) feet in height or greater and saguaros with arms six (6) feet or greater in height shall be preserved-in-place or remain on-site.

b. Other native plants: a minimum of fifty percent (50%) of all specimens, except safeguarded plants, shall be preserved-in-place or salvaged and transplanted on-site.

c.

Mitigation requirements for the remaining specimens rated medium to high viability that are destroyed or removed off-site as shown on the preservation plan shall be mitigated by replacement with plants of the same genus and species in conformance with the replacement and size requirements of the following subparagraphs E and G.

3. For the set aside method: Thirty percent (30%) of the site shall be set-aside and the minimum requirements for preservation in place, salvage and transplanting on-site of safeguarded plants, "crested" saguaros, other saguaros, and ironwood trees outside set-aside areas shall be in conformance with the requirements of subparagraphs 1 and 2.a above.

D. Calculations: Bonus credits. For the selective plant preservation and the plant appraisal methods, a bonus credit shall be allowed as follows for specimens, except safeguarded plants, that are preserved-in-place:

1. Each specimen saguaro greater than ten (10) feet in height and fenced in conformance with 18.72.S05 E.8 in the preservation manual may be credited as three saguaros.
2. Each specimen saguaro six (6) to ten (10) feet in height may be credited as two (2) saguaros.
3. Each specimen ocotillo greater than six (6) feet in height may be credited as two (2) ocotillos.
4. Other specimen cacti, succulents and shrubs greater than four (4) feet in height may be credited as two (2) of the same species.
5. Each specimen tree, measuring greater than twelve (12) inches in caliper and fenced in conformance with 18.72.S05 E.8 in the preservation manual, may be credited as three (3) of the same species.
6. Each specimen tree, measuring six (6) to twelve (12) inches in caliper, may be credited as two (2) of the same species.

E. Calculations: Minimum replacement requirements. Specimens destroyed or removed from the site shall be mitigated by replacement plants of the same genus and species according to the following replacement requirements and the size requirements in the following paragraph G:

1. For the selective plant preservation method, the following minimum replacement requirements apply:
   a. Each specimen saguaro destroyed or removed from the site shall be replaced on-site with three saguaros, three to one (3:1).
   b. Other specimen cacti, yucca, ocotillo, succulents and shrubs destroyed or removed from the site shall be replaced on-site with two plants (2:1) of the same genus and species.
   c. Each specimen tree destroyed or removed from the site shall be replaced with three plants (3:1) with trees of the same genus and species.
2. For the plant appraisal method, each specimen plant destroyed or removed from the site shall be replaced one for one (1:1) with plants of the same genus and species.
3. For the set-aside method, all specimen saguaros and ironwoods outside the set-aside area(s) that are destroyed, or removed from the site shall be replaced

in conformance with the plant replacement requirements for the selective plant preservation method in subparagraph 1.a and 1.c above.

F. Calculations: Minimum supplemental requirements. Specimens salvaged and transplanted on-site shall be supplemented with an additional plant or plants of the same genus and species according to the following supplemental requirements and the size requirements in the following paragraph G:

1. For the selective plant preservation method and the appraisal method, the following minimum supplement requirements apply:
   a. Each specimen saguaro, six (6) feet or greater in height salvaged and transplanted on-site, shall be supplemented with two (2) additional saguaro planted on-site; each specimen saguaro less than six (6) feet in height salvaged and transplanted on-site shall be supplemented with one (1) additional saguaro planted on-site.
   b. Other specimen cactus, yucca and ocotillo and any safeguarded plants of any size, salvaged and transplanted on-site shall be supplemented with the planting on-site of one (1) additional plant of the same genus and species. NOTE: See the Arizona native plant law for any provisions which supersede or supplement these regulations as they apply to safeguarded plants.
   c. Each specimen tree, except for safeguarded plants, transplanted on-site shall be supplemented with two (2) additional trees of the same genus and species.
2. For the set-aside method, all specimen saguaros outside set-aside areas, except crested saguaros, and all specimen Ironwoods and all safeguarded plants outside set-aside areas that are transplanted on-site shall be supplemented in conformance with the plant supplement requirements for the selective plant preservation method in paragraph 1 above.

G. Minimum replacement and supplemental sizes.

1. For the selective plant preservation method, the following minimum standards apply for all specimens:
   a. Saguaros: Two (2) feet in height from on-site or four (4) feet in height from off-site or from a plant nursery.
   b. Tree: Commercial nursery sizing for supplemental trees shall be fifteen- (15) gallon can size. The size of three to one (3:1) replacement trees shall be two (2) fifteen- (15) gallon cans and one (1) twenty-four- (24) inch box.
   c. Other native cacti and succulents. Two (2) feet in height or diameter, except that blue barrel cactus, fish hook cactus, compass barrel cactus, needle-spined pineapple cactus, desert night-blooming cereus, and thornber pincushion shall have a minimum replacement size of four (4) inches in height or diameter.
   d. Ocotillo: Two (2) feet in height (from on-site) or four (4) feet in height (from nursery).
   e. Yucca and other native shrubs. Five- (5) gallon.
2. For the plant appraisal method, supplemental plant sizes shall be the same as in paragraph 1 above. The size of a replacement plant shall be equal to or greater than the caliper and no less that three quarters (¾) of the height and

spread of the specimen being replaced, or a destroyed or removed specimen may be replaced with two (2) or more native plants with a minimum fifteen- (15) gallon can size and which have a total appraised replacement value no less than the appraised value of the plant being replaced.

3. For the set-aside method, replacement and supplemental size requirements for specimen saguaros, except crested saguaros, and specimen ironwood, outside set-aside areas shall be in conformance with the plant replacement and supplement requirements for the selective plant preservation method in subparagraph 1.a and 1.b above.

H. Native plant location/preliminary site plan. A native plant location/preliminary site plan, prepared in conformance with the requirements of 18.72.S05 in the plant preservation manual shall promote the preservation and enhancement of the site's native vegetation and undisturbed natural environment. The plan shall minimize disturbance of native vegetation and promote the preservation-in-place of significant specimens, plant communities, animal habitats and set-aside areas. Compliance with the minimum requirements of Sections 18.72.090 and 18.72.100 is required.

1. Site design and plant preservation shall support the following objectives:
   a. The preservation-in-place of tall saguaros and large trees, in particular saguaros six (6) feet and greater in height and trees eight (8) inches and greater in caliper.
   b. The protection from removal, relocation, or destruction of the understory vegetation of specimen plants and plant community(ies) to be preserved -in-place.
   c. The continuity and linkage of on-site resources that extend beyond the site (i.e., natural open spaces, vegetative and animal habitat, hiking, riding, and equestrian trails).
   d. To minimize the fragmentation and destruction of plant communities for the purpose of preserving wildlife and riparian habitat.
   e. To limit the size of site development areas and building envelopes in order to preserve the site's natural features and amenities.
   f. To locate salvaged and transplanted specimens on the site within common areas or landscape bufferyard areas as required by Chapter 18.73 and within the front yards of residential lots for the purpose of improving public and private streetscapes and to limit the net loss of native plant diversity and volume, and wildlife habitat on the site.
   g. To encourage the preservation of specimens in excess of the specimens required to meet the minimum requirements of this chapter.
   h. To encourage the harvesting of salvageable native plants in excess of the specimens required by this chapter, an approved preservation plan, other applicable regulations, and specimens not otherwise used by the property owner, for projects and programs which benefit the public, such as parks, schools, public streetscapes, community native plant banks, public works projects, and the surrounding neighborhood consistent with the requirements of Section 18.72.130
2. The native plant location/preliminary site plan shall comply with the following requirements for riparian habitat areas, washes and floodplains:
   a. Riparian habitat established as set-aside areas shall not be removed, altered, enhanced, or disturbed;

b. Riparian habitat outside set-aside areas and natural open space that is disturbed shall be mitigated in conformance with riparian regulations;

c. Native plants that occur on plant lists in riparian regulations may be salvaged and transplanted to disturbed riparian habitat in compliance with riparian mitigation requirements;

d. Disturbed washes and disturbed floodplain areas (areas outside set-aside and riparian habitat areas) may be enhanced by the salvage and transplanting, or mitigation of native plants. Those portions of washes and floodplain areas so disturbed and/or enhanced are categorized as functional open space;

e. Those portions of washes and floodplains which are either disturbed or enhanced or both by drainage improvements or those portions of washes and floodplains with a significant increase or decrease in historic hydrological characteristics of velocity or volume as a result of development, disturbance, or enhancement either inside or outside of a wash or floodplain, may be categorized as functional open space. Development, disturbance, enhancement, or a significant increase in the historical hydrological characteristics of a wash or floodplain shall prevent that portion of a wash so affected from being categorized as natural open space or set-aside area.

I. Plant appraisal. For the plant appraisal method only, a plant appraisal will be prepared in conformance with the following requirements:

1. Each specimen plant identified in the native plant preservation plan to be removed from the site or destroyed must be appraised for its market value by a certified plant arborist and replaced with native plants of the same species and variety with a total market value equal to or greater than the market value of the plant removed or destroyed. The appraisal shall be prepared using market values and techniques published by the Council of Tree and Landscape Appraisers. The appraisal shall be current within six (6) months prior to submittal of a preservation plan and will be valid for a period of two years from the date of preservation plan approval. The subsequent submittal of a new or revised preservation plan may require the submittal of an updated plant appraisal as determined by the planning official.

2. A revised appraisal value is required after the two- (2) year time limit has expired, and each two- (2) year period thereafter until such time as the approved preservation plan is implemented. Compliance with the plant appraisal method requires the establishment of monetary assurances such as a bond or letter of credit. The assurances shall have a monetary value equal to the market values of all specimen plants to be removed from the site or destroyed.

J. Resource value report. For the set-aside method only, a resource value report shall be submitted together with the native plant location/preliminary site plan. The boundaries of natural open space area(s) set-aside in the resource value report shall be delineated as natural open spaces area(s) on all site plans, development plans, tentative plats, subdivision plats and grading plans for the subject site and will be described as undisturbed natural open space area(s) in all covenants, conditions, and restrictions (CC & As) for the development. The resource value report shall include all of the following:

1. An analysis prepared for the entire site to determine the general viability of native plants and plant communities on the site. The analysis shall include an assessment and prioritization, on a graduated scale from most significant to least significant, of the undisturbed natural desert areas based on the resource value of the existing native plants. The resource value shall be determined by factors such as health, size, density, and variety of native plant species, the visual resource value of the undisturbed natural desert areas, and the potential to maximize the preservation of contiguous areas of undisturbed natural desert with native plants both on and off site. The highest resource value shall be given to riparian habitat areas.
2. A minimum of thirty percent (30%) of the site or that portion of the site for which the set-aside method is utilized, shall be shown on the attached native plant location/preliminary site plan as an area set-aside as undisturbed natural open space. The set-aside areas shall consist of the site areas with the highest resource value as determined by the report.
3. An inventory and analysis of the viability and transplantability of all plants protected as safeguarded plants, all saguaros, and all inventoried ironwoods which are outside of the boundaries of the set-aside areas. Calculations for preservation requirements and credits shall conform to the requirements of this chapter.
4. Boundaries of all set-aside areas clearly delineated on an aerial photograph of the site.

K. Supplementary information. The planning official may require additional information to reasonably insure that the purpose of this chapter is fulfilled.

(Ord. 1998-39 § 1 (part), 1998)

18.72.110 - Tagging, color-coding, plant protection and planting operations.

A. Identification numbering. All specimens shall be tagged with identification numbers and color coding in conformance with 18.72.S06 color-coding and tagging standards in the manual, except that specimens within a designated and fenced natural open space or set-aside area need not be tagged.

B. Protection and identification of specimens. Specifications included in the preservation plan and all transplanting and construction contracts for the project shall include language requiring the protection of preserved-in-place and transplanted specimens; and the identification, accounting and replacement of damaged, dead, or dying preserved-in-place and transplanted specimens, all in conformance with the requirements of this chapter and the preservation manual.

C. Planting and transplanting. The planting of replacement and supplemental plants and the salvage and transplanting of specimens shall be done by bonded professionals qualified in the identification, planting, salvage, transplanting, and maintenance of native plants.

D. Irrigation and maintenance. Preserved-in-place and transplanted specimens and replacement and supplemental plants shall be irrigated and maintained as required by Section 18.72.S05 and in conformance with established irrigation and maintenance practices as required to promote the survival of plants in a healthy condition.

E. Salvage permits. Permitted plants shall be salvaged and transplanted in compliance with the requirements of this chapter, the preservation manual and the Arizona Native Plants Statute (A.R.S. § 3-901 et seq.).

(Ord. 1998-39 § 1 (part), 1998)

18.72.120 - On-site monitoring and replacement of dead, damaged, or dying plants.

A. On-site monitoring of all aspects of preservation, salvaging and transplanting, planting, and associated mitigation operations, including harvesting, permit compliance, site clearing, grading, plant marking, color-coding, and plant protection shall be provided by the property owner during project construction.

B. On-site monitoring shall be performed by an independent monitor, not an employee of the property owner, who is a qualified professional and practitioner in native plant identification and protection with qualifications equal to or exceeding those in 18.72.070. The monitor will be under contract with and at the expense of the property owner.

C. The monitor shall be authorized by the property owner to require contractors and developers to demonstrate and verify that all aspects of preservation, salvage, mitigation, and plant protection activities are performed in conformance with the approved preservation plan and this chapter and the preservation manual.

D. Immediately after the monitor's initial site visit, the monitor shall prepare a report on the status of specimens identified on the approved preservation plan and specimens tagged as preserved-in-place or to be salvaged and transplanted-on-site. The report shall include the general condition of specimens, the identification of specimens under stress, damaged, dying, or dead, and the appropriate techniques to relieve the stress and damage, and recommendations for the replacement of specimens that are dead or dying.

E. The monitor shall conduct periodic on-site inspections and provide periodic progress reports to the property owner and the planning division no later than forty-eight (48) hours after the on-site inspection. The progress report will outline the status of plant preservation plan work accomplished to date, any problems encountered, and any noncompliance with the requirements of the approved preservation plan and this chapter.

F. A preserved-in-place, transplanted, replacement, or supplemental plant identified in the monitor's status report or the county's field inspection report as dying or as having died during project development will be replaced by the property owner within three (3) months of the report's completion. The plant(s) will be replaced with a viable plant(s) of the same genus and species in good condition, of uniform shape, and representative of the species and equal or greater caliper as the replaced plant; or, replaced with two (2) or more plants of the same species with a minimum fifteen- (15) gallon can size and total appraised replacement value equal to or greater than the appraised value of the replaced plant. The owner will take action within a shorter period of time if required to improve the health of stressed plants and to prevent plant loss. These requirements will apply to all supplemental and replacement plants and to no less than ninety percent (90%) of all plants salvaged and transplanted on-site.

G. The monitor shall conduct an assessment of the condition of the site's specimens and replacement and supplemental plants one year after final inspection has been performed on the site, and the monitor shall thereafter certify as to whether or not the requirements of the approved preservation plan and this chapter have been complied with.

(Ord. 1998-39 § 1 (part), 1998)

18.72.130 - Harvesting process.

The harvesting process in whole as described in this section is strongly encouraged, but not required. If a property owner allows harvesting of plants not identified for preservation in place or salvaging and transplanting on-site, the following procedures shall apply:

A. The property owner shall, at the time of his first submittal to the county of a preservation plan for the subject site, mail a notice regarding a forty-eight- (48) hour harvesting process to the planning division, all abutting property owners and those agencies identified in Section 18.72.100.H.1.h who have previously notified the planning division of their interest in the harvesting process. The planning division shall provide the property owner with a harvesting list of agencies and individuals who have previously notified the planning division of their interest in the harvesting process.

B. After preservation plan approval and at least five (5) calendar days prior to the commencement of grubbing, site clearing, and grading operations, the property owner shall mail a notice to the planning division and to individuals and organizations on the harvesting list who have notified the property owner of their interest in harvesting plants on the subject site. The notice shall establish a forty-eight- (48) hour harvesting period during which existing plants not shown on the approved preservation plan as preserved-in-place, salvaged and transplanted-on-site, located in a set-aside area, or otherwise reserved at the discretion of the developer may be harvested by harvesters.

C. The harvesting of native plants shall be done by bonded professionals qualified in the identification, salvage and transplanting of native plants and whose harvesting services shall be provided for and paid by the harvesting individual(s) or organization (s). The harvesting process shall be monitored by the property owner's monitor to assure that harvesting of native plants is limited to plants without an identification tag and located outside all set-aside areas.

D. Permits required by the Arizona Native Plants Statute (A.R.S. § 3-901 et seq.) shall be secured by the harvesting individual or organization.

(Ord. 1998-39 § 1 (part), 1998)

18.72.140 - Compliance, conflict, violations, penalties, assurances.

A. Compliance and conflict with county, state, and federal regulations.

1. This chapter does not replace, supersede, or in any way affect or change requirements for compliance with the Federal Endangered Species Act and the Arizona Native Plants Statute (A.R.S. § 3-901 et seq.). In the event of a conflict between the requirements of this chapter and the requirements of the Federal Endangered Species Act or the Arizona Native Plants Statute, the requirement which provides the most protection for native plants will prevail.

2. Requirements for compliance with this chapter and other Pima County regulations will be calculated and applied separately. Compliance with this chapter may be considered for the purposes of compliance with other chapters, if the primary purpose to preserve native plants and plant communities is not jeopardized. In the event of a conflict between two (2) or more requirements in this chapter, or conflicts between the requirements of this chapter and the requirements of another chapter, the more restrictive requirement will prevail, except the highest resource value for the establishment of set-aside areas shall be given to previously designated riparian habitat areas.

3.

Planning division staff, qualified in preservation plan review and the identification of native plants and safeguarded species, may periodically provide spot-inspections to confirm compliance with this chapter and approved preservation plans.

B. Violations and penalties. In addition to the provisions of Chapter 18.95 Compliance and Enforcement, violations of this chapter are subject to the following enforcement, penalties, fines, and other remedies:

1. No person shall, individually or through acts of another person, intentionally or negligently damage, destroy, or remove from the site any native plant except as authorized by an approved native plant preservation plan.

2. A fine for the damage, destruction, or removal from the site of each native plant will be based on the following schedule:

   a. For each viable saguaro. two hundred dollars ($200) per foot of main trunk and two hundred dollars ($200) per foot of each arm with a maximum not to exceed two thousand five hundred ($2,500) per saguaro;

   b. For each specimen tree or shrub. three hundred dollars ($300) per caliper inch measured twenty-four (24) inches above grade level for trees and six (6) inches above grade for shrubs with a maximum not to exceed two thousand five hundred dollars ($2,500) per tree or shrub.

3. A fine of not less than five hundred dollars ($500) nor more than two thousand five hundred dollars ($2,500) if native plants are damaged, destroyed, or removed from the site prior to approval of a preservation plan.

C. Additional penalties. Any person who individually or through acts of another person, intentionally or negligently damages, destroys, or removes from the site any native plant, except as authorized by an approved preservation plan, may be subject to one or more of the following in addition to any fines imposed by paragraph B above as determined by the hearing officer pursuant to Chapter 18.95 of this code:

1. Mitigation of specimens damaged, destroyed, or removed from the site which may include:

   a. One hundred percent (100%) replacement with plants of the same genus and species and of equal or greater size as the specimens being replaced and the replacement will be completed within ninety (90) days of the violation, and

   b. Any supplemental mitigation and site improvements determined to be necessary to restore the natural habitat and plant communities which have been damaged, destroyed, or removed from the site,

   c. In the event replacements are not made as required by the preceding subparagraph C.1.a and b, then payment to the county by the property owner of an amount equal to the certified appraised replacement value of the specimens damaged, destroyed or removed from the site and not subsequently replaced as required by this paragraph. The certified appraised replacement value will be based on the type, size, and original condition of the specimens prior to the violation as shown in the plant inventory. The certified appraisal will be provided by and at the property owner's expense.

2. Supplemental mitigation, maintenance and monitoring requirements for native plants following the final inspection. This requirement shall be performed for a period of time as determined by the hearing officer, but not to exceed eight (8) years.

3. Suspension by the director of the development services department of any permits issued by the county for development of the site. Any such suspension shall remain in

effect unless and until the violation is mitigated in conformance with this chapter as approved by the planning official.

D. Suspension lifted. Where any permit issued by the county is suspended until its expiration pursuant to paragraph C.3 above, no new permit shall be issued for the site until all fines issued pursuant to paragraphs B.2 and B.3 above have been fully paid and all mitigation required by paragraph C.1 and C.2 above has been fully performed.

E. Maintenance agreement. Prior to the subsequent issuance of permits for development of the site on which a violation occurs, the property owner shall provide the county with proof, such as an agreement with a landscape installation and maintenance service, that procedures are in place to ensure replacement of damaged or destroyed plants and follow-up maintenance of those plants replaced for a period determined by Pima County, but not to exceed eight (8) years.

F. Other violations and penalties. Violations of the Arizona native plant law are subject to the penalties and sanctions in the law.

G. Assurances. Implementation and completion of an approved preservation plan and all associated mitigation standards and maintenance requirements, all in conformance with this chapter and the requirements of the preservation manual, shall be guaranteed by assurances acceptable to Pima County, as specified by Pima County policy and regulations and consistent with Section 18.69.070. Assurances shall include the following provisions:

1. Assurances will be submitted prior to preservation plan approval and will be released when final inspection by the professional on-site monitor certifies compliance with and completion of the preservation plan as confirmed by Pima County except as provided in the following subparagraph 2.

2. Maintenance and preservation assurances. The final approval of any subdivision plat or development plan that includes an approved preservation plan will require covenants or assurances which ensure the continued preservation of set-aside areas and the continued maintenance and preservation of specimens preserved-in-place or transplanted on-site.

(Ord. 1998-39 § 1 (part), 1998)

18.72.150 - Amendments.

A. This chapter may be amended by the board of supervisors in conformance with the provisions in Section 18.01.070

(Ord. 1998-39 § 1 (part), 1998)

Chapter 18.73 - LANDSCAPING, BUFFERING AND SCREENING STANDARDS*

Sections:

18.73.010 - Purpose and scope.

A. The purpose of this chapter is to provide landscaping requirements and performance standards which:
   1. Enhance and promote the image of the community's desert environment;
   2. Conserve groundwater resources in conformance with the Arizona Groundwater Code, Title 45, Chapter 2, by:
      a. Specifying the use of arid landscape design principles and standards,
      b. Helping control and utilize stormwater runoff,
      c. Specifying the use of plant materials from approved lists,
      d. Encouraging the use of effluent;
   3. Protect the public health, safety and general welfare by:
      a. Minimizing noise, air, water, dust and visual pollution,
      b. Screening and buffering incompatible land uses,
      c. Preserving property values and the character of neighborhoods,
      d. Reducing the heat and glare absorbed and radiated by development,
      e. Conserving energy resources,
      f. Helping to control soil erosion,
      g. Controlling the spread of invasive and noxious plants,
      h. Increasing traffic safety, and
      i. Protecting air quality by reducing dust emissions.

B. The intent of this chapter is to ameliorate adverse impacts between potentially incompatible uses and zones by requiring a minimum level of buffering and screening. This chapter does not determine the compatibility of two different uses or zones, which is determined by the board of supervisors.

C. Scope.
   1. The provisions of this chapter shall apply to all development, unless excepted elsewhere in the Code, except development within the ML zone and RVC zone

adjacent to the ML zone, and conversions of apartment complexes to condominiums with landscape plans that were approved with the apartment development plan.

2. New development. The provisions of this chapter apply to all new tentative plans and development plans submitted after October 1, 1985;

3. Expansion of existing uses. Approved plans and development existing prior to October 1, 1985 shall comply with the regulations under which approval was given, and shall be subject to the provisions of this chapter if proposed expansion will exceed twenty-five percent of the gross floor or lot area of the existing development.

4. Landscape plan submittal. A landscape plan shall be submitted to the planning division of the development services department for the following:

   a. Any development plan or subdivision plat that requires ten or more parking spaces, except for development within the ML zone and RVC zone adjacent to the ML zone, development of single-family dwellings where all parking is contained within structures and carports on individual, subdivided lots, and development plans for apartment conversions to condominiums that have landscape plan that were approved by the planning division and development services department.

   b. When screening, buffering or landscaping is required by the chapter,

   c. When screening, buffering or landscaping is required by the board of supervisors as a condition of rezoning or other reason,

   e. Any landscaping requiring review by the planning division required to fulfill requirements of the General Commercial Standards (Chapter 18.39), Golf Course Zone (Chapter 18.59), Hillside Development Overlay Zone (Chapter 18.61), Historic Overlay (Chapter 18.63), Major Resort Zone (Chapter 18.40), Sign Standards (Chapter 18.79) or Grading Standards (Chapter 18.81).

(Ord. 2006-97 § 1 (part), 2006; Ord. 2003-72 § 4 (part), 2003; Ord. 1986-187 § 1 (part), 1986; Ord. 1985-171 § 1 (part), 1985)

18.73.020 - Definitions.

A. Certain terms used in this chapter shall be defined as follows:

1. Amenity landscaping. Any landscaping that is required to mitigate for the negative environmental affects to a site caused by paving and impervious structures;

2. Bufferyard. Landscaping elements, screening devices, and landforms used for reduction of the potentially adverse impacts of adjoining, dissimilar land uses as depicted in the Landscape Design Manual;

3. Effluent. Reclaimed wastewater;

4. Environmental zone design principle. The landscape management and design principle of identifying planting areas throughout the site that have, or will be designed to have, similar maintenance, irrigation and exposure requirements. Zones may range from arid to wet. The plant palette for each zone should clearly reflect the function and design objective of the zone. Application of this principle promotes rational site planning and efficient, attractive, cost-effective landscaping;

5. Gross parking area. The total square footage of the development site minus the first floor square footage of all buildings and storage yards, bufferyards and drainage structures;

6. Landscaping. The combination of landscape elements in a designed, specific application that meets the purposes of this chapter. Landscape elements may include

vegetation, such as trees, cacti, shrubs and groundcovers and other elements such as walls, earth berms, planters, and other architectural or structural elements;

7. Mini-oasis design concept. The landscape design technique of allocating a generous portion of a site's landscape water where it will return maximum benefit in terms of cooling, aesthetic pleasure and exposure to people;

8. Plant size.

   a. Gallons, in regard to plant size is the container size generally accepted by trade professionals to denote or specify plant materials size;

   b. Caliper shall refer to tree trunk size measured as follows:

      i. For 15 gallon and 24 inch box containers, measure the trunk at the widest point within the first four to six inches above ground.

      ii. For 36 inch box and larger containers, measure the trunk at the widest point six to twelve inches above ground.

      iii. For multiple stem trees, measure the second largest stem within the first six inches above the origination point, or six inches above ground if all stems originate from the soil. The caliper for multiple stem trees shall be determined by averaging no more than the diameter of three of the largest stems.

      iv. Trees with all branches above twelve inches from the ground are classified as single stem trees.

9. Screening element. Any landscaping or structure used to conceal or reduce the negative visual and audio impacts of certain land uses or activities from streets or adjacent development. The height of a screening device is measured from the highest finished grade abutting the element to be screened;

10. Walls or fences. Any structure intended for confinement, prevention of intrusion, boundary identification or screening of an activity or land use.

11. Decorative masonry wall. Masonry wall that is stuccoed and painted, has a textured, colored surface, or contains other elements that improve the aesthetic appearance of gray slump block walls, as approved by the planning director.

12. Natural Desert Bufferyard. A bufferyard that is composed of undisturbed areas in which disturbance is prohibited except to enhance small areas by planting the same plant material and density as undisturbed areas endemic to the site area.

(Ord. 2006-97 § 1 (part), 2006; Ord. 1985-171 § 1 (part), 1985)

18.73.030 - Performance standards.

A. Scope. This section provides general standards for bufferyards, landscape designs and landscape plans. Specific design references, standards and plant lists in the form of a landscape design manual are hereby adopted to ensure compliance with this chapter. The landscape design manual may be amended by resolution of the board after a noticed public hearing. The planning director may approve minor changes to the landscape design manual. Landscape reference materials and plant lists are available at the planning and development services department.

B. General Standards.

1. Landscape designs shall be in harmony with the environmental context of the development site. Preservation of native, on-site vegetation shall be a primary objective of site planning for development. Specimen plants shall be given particular

consideration for retention on site. Property owners shall comply with the provisions of Arizona Revised Statutes, Section 3-904;

2. Wherever the undisturbed natural desert landscape cannot be preserved, or has been disturbed through past land use and is no longer representative of the native habitat, landscape design and construction shall promote the use of transplanted, on-site desert plants, container plants, seeded desert plants and inorganic groundcovers. This standard shall be particularly emphasized on all landscaped areas abutting public rights-of-way, scenic routes and landscaping having high public visibility;

3. The environmental zone design principle of appropriate plant selection and placement, based on the function, water requirement and most suitable environmental exposure of the plant materials, shall be used in all proposals. The mini-oasis design provision may be permitted when proposed water-intensive planting designs are found by the planning director to substantially meet criteria found in the landscape design manual;

4. Turf applications over ten acres, except as required by the Pima County department of natural resources, parks and Recreation, including parks and recreational facilities, cemeteries and school grounds shall be irrigated with reclaimed water, effluent, or CAP water. Golf course design and its use of turf within Pima County is regulated by the Golf Course zone (Chapter 18.59);

5. Plants shall be selected from the approved plant lists within the Landscape Design Manual. Requests for changes in the plant lists may be made to the planning director, who shall review the request and enter all approved changes to the plant list addendum which shall be available from the planning department;

6. Trees and shrubs.
   a. Trees shall be at least five gallons in size, or of comparable height if bare-rooted, at planting time,
   b. Shrubs shall be at least one gallon in size at planting time,
   c. Trees and shrubs shall be planted so that at maturity they do not interfere with service lines, traffic sight lines and the property rights of adjacent property owners, and
   d. Trees planted near public sidewalks or curbs shall be provided with suitable root diverters to minimize heaving of those improvements;

7. Groundcovers.
   a. When inorganic groundcovers are used, they shall be in combination with live plants and not exceed two-thirds of the total area of applied groundcovers,
   b. Turf use, except as required by Pima County Department of Natural Resources, Parks and Recreation, shall be for functional use only, not to exceed an area that is equal to fifteen percent of the required landscaped area, and shall be located, when used, on the development site:
      1) To mitigate glare and reduce heat near buildings and their openings, windows and patios,
      2) To enhance a mini-oasis,
      3) To enhance a pedestrian entryway,
      4) In an environmental zone compatible with the context of the landscape and architectural design,
      5) To conserve water and demonstrate this ethic to the public;
   c.

Unpaved areas in any plant bed, median or tree understory within a planter shall be planted with shrubs, accents or vines, or covered with appropriate organic and inorganic groundcovers;

8. Irrigation and water accent features:
   a. All water use for landscape irrigation and enhancement shall conform to the Arizona Groundwater Code (Title 45, Chapter 2) and the adopted groundwater management plan for the Tucson active management area, except areas located outside of the Tucson active management area, which must adhere to the requirements of this chapter,
   b. Each introduced planting shall be served by a water-conserving, underground irrigation system that incorporates rain sensors and is capable of seasonal adjustments, unless otherwise approved by the planning director. Stormwater harvesting and drip irrigation are the preferred irrigation methods,
   c. Required landscape areas shall use a separate reclaimed ready irrigation system to promote the use of effluent to irrigate landscaped and turf areas. A note describing effluent use feasibility shall be included on landscape plans indicating briefly: cost-effectiveness, potential sources and availability,
   d. Landscape designs shall be integrated with improvement plans for the site and shall make maximum use of site stormwater runoff for irrigation purposes, and
   e. Water design features that use groundwater or CAP water, such as ponds and fountains, shall not exceed more than fifty square feet in size unless approved by the design review committee with a suitable justification to demonstrate why the water design feature requirements cannot be met within fifty square feet.
9. Natural features:
   a. Earth berms shall be designed to transition to existing grades, shall not exceed a slope of 2:1, and shall be adequately covered with plant material, groundcovers or rip-rap to control erosion,
   b. Natural drainageways and existing, natural vegetation may be used for screening and amenity landscape credit if approved by the planning director, provided such uses are consistent with the county floodplain management ordinance;
10. Streetscape sculpture and furniture: Streetscape bufferyards wider than ten feet may be reduced by ten percent of their required width, for each one hundred linear foot section that includes an, approved public sculpture or furniture piece installed and maintained within the bufferyard. Public sculpture and furniture shall be approved by the design review committee (reference Chapter 18.99), subject to standards contained in the landscape design manual;
11. Safety design standards:
   a. Walls, fences, signs, landscaping and other potential obstructions to view in excess of two feet in height shall be placed in accordance with the requirements of Section 18.77.020
12. Public right-of-way standards:
   a. Landscaping in publicly owned or controlled areas shall be consistent with the purpose and requirements of this chapter, design requirements as specified in the county development standards code, the department of transporation's subdivision street standards, the scenic routes ordinance and the Pima County landscape design manual;

b. A right-of-way use permit and maintenance agreement must be obtained from the Pima County Real Property Division prior to installation of any landscaping within the public right-of-way.

13. Plant materials spacing: Plants may be grouped, clustered or unevenly spaced to prevent the creation of an unnatural appearance in the landscape, provided that screening and mitigation of site development from streets and adjoining lots is provided and the design complies with the Landscape Manual.

(Ord. 2006-97 § 1 (part), 2006; Ord. 1985-171 § 1 (part), 1985)

18.73.040 - Screening and bufferyard requirements.

A. Scope:

1. Land use zones permitted by this code are ranked according to their land use intensity and restrictiveness (reference Section 18.05.010B). Ranking is based on the type and degree of nuisance or negative impact the more intensive use is likely to impose on less intensive, adjacent land uses. Bufferyards shall be provided between uses to minimize the negative effects of their dissimilarity.

B. Bufferyards:

1. Purpose: Both the amount of land and the type and amount of planting specified for each bufferyard requirement are designed to ameliorate nuisances between adjacent land uses or between a land use and public street or road, yet to be designed to promote appropriate linkages to compatible land uses and public streets or roads. Appropriate linkages include, but are not limited to design that promotes pedestrian and bicycle path connectivity including safe routes.

C. Location of bufferyards:

1. Bufferyards shall be located on the outer perimeter of a lot or parcel, extending to the lot or parcel boundary line.

2. Portions of required bufferyards shall not be located on an existing or dedicated public or private street right-of-way. However, portions of bufferyards in excess of the bufferyard requirement as determined by Table 18.73-1 and the bufferyard standards illustrated in the Landscape Design Manual may be located on an existing or dedicated public or private street or right-of-way in accordance with the department of transportation's adopted subdivision street standards, board of supervisors Policy F 54.1 Planting in Pima County Right-of-Way, as amended, which includes review and approval of a right-of-way use permit or licensing through the Pima County Department of Transportation Real Property Division.

D. Determination of bufferyard requirements:

1. To determine the type of bufferyard required between the project site and adjacent parcels, or between the project site and an adjacent street, the following procedure shall be followed:

a. Identify the land use zone category of the proposed use on Table 18.73-1, "Bufferyard Requirements," codified in this chapter, and located in the landscape design manual,

b. Identify the land use zone category of the existing land use zones adjacent to the proposed use on Table 18.73-1,

c. Identify any adjacent street as private, public, major route, and/or scenic route.

d.

Determine the bufferyard required on each boundary (or segment thereof) of the subject parcel by referring the indicated letter designation from Table 18.73 -1 to the bufferyard standards illustrated in the landscape design manual.

2. Bufferyard specifications detailed and illustrated in the manual constitute the bufferyard required between the two adjacent land uses. Any of the options contained in the letter designated bufferyard shall satisfy the requirement of buffering between the adjacent land uses. The width of the bufferyard can vary, or meander, provided that the average bufferyard width is not less than the required bufferyard width when measured along any single lineal bufferyard. If a developer is providing pedestrian or bicycle connectivity through a bufferyard to an adjacent site, street or right-of-way, the required wall height within the bufferyard can be lowered to forty-two inches.

3. Responsibility for bufferyard:
   a. When a use is the first to develop on two adjacent vacant parcels, this first use shall provide the required buffer,
   b. The second use to develop shall, at the time it develops, provide any additional plant material and land necessary to provide any additional bufferyard required between those two uses.

4. Existing plant material, structures and land located on the preexisting (first developed) land use which meets the requirements of this chapter may be counted as contributing to the total bufferyard between it and the second (adjacent) land use to develop.

E. Use of bufferyards:
1. A bufferyard may be used for passive recreation; it may contain sculpture, furniture and pedestrian, bike or equestrian trails, provided that:
   a. No plant material is eliminated,
   b. The total width of the bufferyard is maintained, and
   c. All other regulations of this chapter are met.
2. In no event shall the following uses be permitted in bufferyards:
   a. Playfields,
   b. Stables,
   c. Swimming pools,
   d. Racquetball and tennis courts.

F. Bufferyard options:
1. Where the bufferyard originally required between a land use and vacant land turns out to be greater than that bufferyard subsequently required between the first use and the subsequently developed use, the following applies:
   a. The subsequent establishment of compatible adjacent land uses, as indicated in Table 18.73-1, may eliminate the requirement for a bufferyard. If the requirement is reduced, but not eliminated, the existing use may expand into the excess buffer area, provided that the resulting total bufferyard between the two uses meets the revised bufferyard requirements;
2. Property owners may enter into agreements, subject to the approval of the county, with abutting landowners to use adjoining land to provide some or all of a required bufferyard. The total buffer shall equal the requirements of this chapter. Nonconforming uses and plats shall not be created, expanded or allowed by this option, nor shall designated, platted open space be compromised. Agreements must run with the land, be approved by the planning department, and be recorded with the county recorder.

3. Contractual reduction of a bufferyard abutting vacant land. When development requiring a development plan or subdivision plat is proposed adjacent to vacant land and the owner of that vacant land enters into a contractual relationship with the owner of the land that is to be developed first, a reduced buffer may be provided by the first use, provided that: the contract contains a recorded agreement whereby that vacant landowner shall assume all responsibility for any additional buffer, if needed by the subsequent development of a more or less intense use on the vacant property.
4. A bufferyard is not required in either of the following cases, provided, however, a six-foot-high decorative masonry wall is constructed in lieu of the bufferyard, and the wall requirement is noted on the approved subdivision plat and landscape plan:
   a. Where a proposed residential development has the same or less density or where the individual lot size along the abutting lots is equal to, or less than the adjacent residential property;
   b. Where a bufferyard is required along the side or rear yard of an individual residential lot abutting an internal street.

(Ord. 2009-98 § 2 (part), 2009; Ord. 2006-97 § 1 (part), 2006; Ord. 2005-35 § 4, 2005; Ord. 1996-59 § 4, 1996; Ord. 1994-147 § 8, 1994; Ord. 1994-133 § 1, 1994; Ord. 1990-1 § 1 (part), 1990; Ord. 1987-92 § 1 (part), 1987; Ord. 1985-171 § 1 (part), 1985)

18.73.050 - Amenity landscaping requirements.

A. Scope. Amenity landscaping shall be provided for certain specific plans, development plans and land uses in addition to the screening requirements of Section 18.73.040 of this chapter. For example, amenity landscaping can be required as a condition of rezoning, as a requirement of cluster option approval or other action of the design review committee (historic, campus park industrial, rural village center, major resort, scenic routes, etc.), or for Hillside Development zone revegetation compliance. Buffer areas provided to satisfy screening requirements may be used to reduce site gross area in calculating the amenity landscaping for these land uses. Where amenity landscaping is required or used, but is not determined by parking area calculations, the area, type, density and height of the amenity landscaping shall be approved by the specific review body assigned the review function (e.g. design review committee; subdivision and development review committee).

B. Parking Area Amenity Landscape Requirements.
   1. Scope. Any development that requires ten or more parking spaces (except for development within the ML zone and RVC zone adjacent to the ML zone and development of single-family dwellings where all parking is contained within structures or carports on individual, subdivided lots);
   2. Standard. An area equal to at least ten percent of the gross parking area shall be devoted to amenity landscaping. Required buffer areas may be subtracted from the gross parcel area in order to determine the gross parking area for purposes of landscaping calculations only;
   3. Amenity options. The ten percent requirement may be satisfied with the use of combinations of the following elements:
      a. Pedestrian median walkways within parking lots,
      b. Twenty-five percent of the area of standard nondecorative concrete sidewalks on site,
      c. One hundred percent of the area of decorative sidewalks (embossed concrete, exposed aggregate, tile, brick, etc.) on site,
      d.

Landscaped traffic islands, planters or medians within parking areas not required by Chapter 18.75

e. Interior project landscaping; such as building foundation planting, planters, mini-oases, landscaped entryways and assembly areas, sculpture gardens, fountains, demonstration gardens,

f. Courts, ramadas and covered walkways.

4. For additional requirements, refer to Chapter 18.75, Off-Street Parking and Loading Standards.

(Ord. 2006-97 § 1 (part), 2006; Ord. 2003-72 § 4 (part), 2003; Ord. 1985-171 § 1 (part), 1985)

18.73.060 - Landscape plan requirements.

A. Submittal and approval of a landscape plan shall be required prior to approval of a development plan and final plats except for development within the ML zone and RVC zone adjacent to the ML zone.

B. Landscape plans shall comply with all requirements listed in the Subdivision and Development Review Committee approved checklist.

(Ord. 2006-97 § 1 (part), 2006; Ord. 2003-72 § 4 (part), 2003; Ord. 1985-171 § 1 (part), 1985)

18.73.070 - Landscape plan review and appeal.

A. Submittal.

1. Prior to the submittal of a landscape plan, the petitioner should consult with the department of planning and development services concerning specific submittal requirements.
2. Landscape plans for subdivision plats and development plans shall be submitted to the office of the subdivision coordinator for further processing. All other landscape plans shall be submitted to the planning division. A minimum of two copies are required.
3. Within thirty working days of plan submittal, the planning division shall notify the petitioner in writing as to any further requirements or amendments necessary for final approval.
4. The petitioner shall resubmit any revised plans for final compliance review.
5. Review fees shall be as determined by the Board of Supervisors.

B. Landscape Plan Review.

1. The planning division of the development services department shall review the landscape plan for compliance with all code and special requirements.
2. The petitioner shall resubmit any revised plans for final compliance review. A written decision will be provided the petitioner within thirty working days of resubmittal.
3. Any change to the underlying development plan or subdivision plat may require resubmittal of a new or revised landscape plan as determined by the planning director.

C. All landscaping shall be completed before the certificate of occupancy can be released, if the landscaping is required for a development plan, or before subdivision assurances can be released, if the landscaping is for a subdivision plat. If a project is developed in phases, landscaping and screening requirements shall be completed in sequence with phased development. The planning director may authorize or require the use of assurances in accordance with Section 18.69.070 for phased development, delayed construction projects

or to accommodate petitioners requesting to postpone installation of bufferyards along property lines that abut vacant, undeveloped property.

D. Appeals. Appeals to the decisions or requirements of the planning division of the development services department may be directed, in writing by the petitioner or other affected individuals, to the design review committee. The appeal must be made within fifteen working days of the date of the departmental decision.

(Ord. 2006-97 § 1 (part), 2006; Ord. 1985-171 § 1 (part), 1985)

18.73.080 - Maintenance provisions.

A. Maintenance of approved landscaping shall consist of regular watering, pruning, fertilizing, clearing of debris and weeds, the removal and replacement of dead plants and the repair and replacement of irrigation systems and architectural features.

B. Maintenance Assurances. The final approval of any subdivision plat or development plan that includes an approved final landscaping plan shall require covenants or assurances which:

1. Ensure the continued maintenance of required landscaping, buffering and associated irrigation systems; and

2. Assign the responsibility of maintenance to the property owner or agent, a homeowners' association or other liable entity as approved by the planning director.

C. Compliance. Planning division personnel, qualified in landscape architectural review will periodically spot-inspect landscape installations for compliance with this chapter and approved landscape plans.

(Ord. 2006-97 § 1 (part), 2006; Ord. 1985-171 § 1 (part), 1985)

Table 18.73-1: BUFFERYARD REQUIREMENTS (Minimum Bufferyard Required)

1 - Proposed Mobile Home Park or Subdivision

2 - Proposed Nonresidential Use

a - Adjacent Residential Use/Zone

Notes:

- The letter designations in this table refer to the bufferyard requirements and standards found within the Landscape

Design Manual.

- See Section 18.73.040F for bufferyard options.

(Ord. 1996-59 § 5, 1996)

Chapter 18.75 - OFF-STREET PARKING AND LOADING STANDARDS

Sections:

18.75.010 - Purpose.

A. This chapter provides standards for the development of parking and loading facilities, in order to:
   1. Enhance public safety;
   2. Minimize traffic congestion;
   3. Provide for the parking of vehicles at appropriate locations, other than on streets;
   4. Permit safe passage of pedestrians to and from parked vehicles and their destinations; and
   5. Expedite the safe passage of moving traffic.

B. In addition, the criteria of this chapter are intended to promote the enhancement of:
   1. Medians, parking areas and property line edges for pedestrian safety and convenience;
   2. Streetscape plantings in order to provide shade, screening, sound attenuation and other environmental benefits; and
   3. The community identity and the appearance of county roadways and development areas.

(Ord. 1985-112 § 1 (part), 1985; Ord. 1985-82 (part), 1985)

18.75.020 - Definitions.

A. Certain terms in this chapter shall be defined, for purposes of this chapter only, as follows:
   1. Bicycle rack: A device for the secured temporary storage of one or more bicycles, which permits convenient locking of the bicycle frame and both front and rear wheels.
   2. Gross parking area: The total square footage of the development within property lines, minus the total square footage first floor area within any buildings and storage yards.
   3. High-intensity parking area:
      a. A parking area with average vehicular turnover of less than two hours;
      b. Examples include fast food restaurant and grocery store parking lots.
   4. Low-intensity parking area:

a. A parking area with average vehicle turnover of more than four hours;
b. Examples include employee parking lots and airport long-term parking lots.

5. Manual: Where used shall mean Subdivision and Development Street Standards Manual:
6. Medium-intensity parking area: A parking area with average usage for time periods of two to four hours.
7. Reserved.
8. Parking area: Any public or private land area designed and used for off-street parking.
9. Parking area, private:
   a. A parking area for the private use of the owners or occupants of the lot on which the parking area is located; this does not include parking on sidewalks or streets;
   b. This includes "reserved" designations.
10. Parking area, public: A parking area available to the public, with or without compensation, or used to accommodate clients, customers, employees, guests or visitors.
11. Parking bay: The parking module consisting of one or two rows of parking spaces and the aisle from which vehicles enter and leave the spaces.
12. Parking lot: An improved off-street ground level area, usually surfaced and improved, for the temporary storage of vehicles.
13. Parking space: A space for the parking of a vehicle within a public or private parking area.
14. Parking structure: A building designed for temporary storage of motor vehicles.
15. Turnover: The number of different vehicles that park in a given space during an average day.

(Ord. 2005-35 § 5 (part), 2005; Ord. 1985-112 § 1 (part), 1985; Ord. 1985-82 (part), 1985)

18.75.030 - Off-street parking requirements.

A. General Provisions.
   1. For uses not specifically mentioned, the requirements are based on a listed use which is similar in type and intensity. Such determination shall be made by the subdivision and development review committee.
   2. Where a fractional space is computed, the requirement will be based on the nearest whole number.
   3. Where the number of employee parking spaces is unknown at the time of application, the applicant shall provide the number of required employee spaces based on typical employee floor area needs for similar uses.

B. Minimum Dimensions for Parking Space Types.
   1. Standard car space: Nine feet by twenty feet equals one hundred eighty square feet.
   2. Handicapped space: Twelve feet by twenty feet equals two hundred forty square feet.
   3. Motorcycle space: Six feet by nine feet equals fifty-four square feet.
   4. Bicycle space: Three feet by eight feet equals twenty-four feet.

C. Parking Area Requirements.

The parking area requirements for any given land use shall be based on the type of land use and lot intensity factor, as provided for in Table 18.75-1.

D. Handicapped Parking.

1. Handicapped spaces shall be functionally located as near as possible to the main entrances of the establishments served, with a barrier-free path, and shall be posted with permanent signs in accordance with the Manual on Uniform Traffic Control Devices (Federal Highway Administration).

2. All parking lots shall require one handicapped space plus one per fifty spaces located as close as practical to the building entrance and with a barrier-free path.

E. Bicycle Parking.

1. Bicycle parking shall be located to promote security for parked bicycles and convenient use. Locations adjacent to pedestrian walks, in view of building occupants, and located away from motor vehicle driveways provide best security.

2. All parking lots shall require two bicycle rack spaces plus one per fifteen parking spaces.

F. Site Access. Proper siting of parking areas and access points in relationship to streets and nearby land uses shall be required.

G. Revision of Approved Plans. All approved development plans or subdivision plats, even for developed projects, may be revised to conform to changes in the number of parking spaces required (refer to Table 18.75-1, Parking Spaces Required).

H. Review. The subdivision and development review committee shall be responsible for the review of off-street parking proposals and may allow modification of specific requirements in certain site instances consistent with the purpose of this chapter.

(Ord. 2008-93 § 1, 2008; Ord. 2005-35 § 5 (part), 2005; Ord. 1985-153 § 1 (part), 1985; Ord. 1985-112 § 1 (part), 1985; Ord. 1985-82 (part), 1985)

Table 18.75-1
PARKING SPACES REQUIRED

	Type of Uses	Employee or Resident Parking	Visitor or User Parking	Parking Lot Intensity	Loading Bay Intensity
1.	**Residential:**				
a.	Dwelling units, including houses, mobile homes, mobile home parks, and manufactured housing	One for each 1 bedroom or studio dwelling unit, 1.5 for each 2 bedroom unit, 2.0 for each 3 bedroom unit, 2.5 for each 4 or more bedroom unit	One for each four dwelling units	Low	Low, if used
b.	Group Quarters: Rooming houses, residence halls, dormitories, membership lodging, religious quarters	One per bedroom or bed	One for each 8 bedrooms or beds	Low	Low, if used
c.	Group care retirement quarters; convalescent homes, in-patient hospitals	One for each two persons employed	One for each 4 beds	Low	Low
d.	Motels and hotels	One for each two persons employed	One per unit	High	Medium
e.	Resorts	One for each two persons employed	One per guest room	Low	medium

2.	**Manufacture:**				
	Including processing and assembly	Two for each three employees	One for each 1,000 sq. ft. floor area	Low	Medium
3.	**Wholesale and business services:**				
	Storage warehouse, mail order house	One for each two employees plus one for each company vehicle	One for each 2,000 sq. ft. of gross area	Low	High
	Laundry and dry cleaning plants, auto and truck rentals, medical and dental labs, lumber yards (excluding hardwares), building supplies, machine shops, welding shops, plumbing shops, ice sales	One for each two employees plus one for each company vehicle	One for each 1,000 sq. ft. of gross floor area	Medium	Medium
4.	**Offices:**				
	Medical and dental offices	one for each employee or physician	One for each 200 sq. ft. of gross floor area	High	Low
	Insurance, real estate, general offices, accountants, architects, utility companies, charitable organizations	One for each two persons employed	One for each 300 sq. ft. of gross floor area	Medium	Low
	General and home offices and charitable organizations not providing face-to-face customer services	One for each two persons employed	One for each 400 sq. ft. of gross floor area	Low	Low
5.	**Commercial, retail:**				
	Groceries, drugs, sundries, liquor	Included in visitor or user parking	Five for each 1,000 sq. ft. of gross floor area	High	Medium
	Department stores	Included in visitor or user parking	One for each 200 sq. ft. of gross floor area	Medium	Medium
	General retail, such as book stores, dry goods, hardware, secondhand sales, stationery, varieties and notions, hobby stores, clothes, sporting goods, toys, jewelry, and pet shops, auto parts and other general merchandise	Included in visitor or user parking	3.5 for each 1,000 sq. ft. of gross floor area	Medium	Low
	TV and radio repair; appliance repair, tailors and cleaners, art galleries and studios	Included in visitor or user parking	One for each 300 sq. ft. of gross floor area	Medium	Low
	Furniture and appliances, photo studios	Included in visitor or user parking	One for each 400 sq. ft. of gross floor area	Medium	Medium
	Home improvement superstores	Included in visitor or user parking	3.5 spaces for each 1,000 sq. ft. of gross floor area	High	Medium
		Included in visitor or user parking		High	Medium

	Discount superstores/clubs (freestanding)		5.0 spaces for each 1,000 sq. ft. of gross floor area		
	Shopping centers (a) under 400,000 sq. ft.; (b) 400,000 to 600,000 sq. ft.; (c) over 600,000 sq. ft.	Included in visitor or user parking	(a) 4.0 for each 1,000 sq. ft. of gross floor area; (b) 4.25 for each 1,000 sq. ft. of gross floor area; (c) 4.5 for each 1,000 sq. ft. of gross floor area	High	Medium
	Banks	Included in visitor or user parking	Three for each teller's window plus one for each service desk; or if no teller windows, two for each service desk	High	Low
6.	**Commercial eating and drinking:**				
	Cafes, restaurants, cafeterias, bars	Included in visitor or user parking	10 spaces for each 1,000 sq. ft. of gross floor area	High	Medium
	Drive-ins, food bars, juice stands and other outside establishments	Included in visitor or user parking	15 spaces for each 1,000 sq. ft. of gross floor area	High	Low
7.	**Commercial, automotive:**				
	Service station (fuel dispensing)	One for each company vehicle	Two for each service bay	Medium	Low
	Auto repair	One for each two persons employed	Two per service island	High	Low
		One for each company vehicle, one for each two persons employed	One for each 100 sq. ft. auto service area	Low	Low
	Auto agencies—new/used	One for each two persons employed	One for each 500 sq. ft. of showroom area plus one for each 10 vehicles displayed (or stored)	Medium	Low
	Auto and truck rental	One for each two persons employed, one for each company vehicle	One for each 10 vehicles stored on premises		
	RV, mobile home and motorcycle sales and repair	One for each two persons employed	One for each 10 vehicles displayed (or stored) plus 2 for each repair bay		
8.	**Commercial outdoor uses:**				
	Wrecking yards, junk yards	One for each two persons employed, one for each company vehicle	One for each 1,000 sq. ft. of gross use area for the first 10,000 sq. ft., one for each 3,000 sq. ft. of gross area	Medium	Low
			Exterior thereafter		
	Equipment rental	One for each two persons employed One for each company vehicle	One for each 400 sq. ft. of floor area and one for each 1,000 sq. ft. of exterior area for the first 10,000 sq. ft. and one for each 3,000 sq. ft. of exterior area thereafter	Medium	Low

	Public utility yards, substations, trucking yards	One for each two persons employed, one for each company vehicle	one for each 1,000 sq. ft. of gross use area for the first 10,000 sq. ft., one for each 3,000 sq. ft. of gross exterior area thereafter	Medium	Low
	Distribution stations, delivery yards	One for each person employed, One for each company vehicle			
9.	**Public assembly: Entertainment, sports, religious, recreation centers, and athletic fields:**				
	Seated activities (including churches)	One for each 4 employees	One for each 4 seats in the main auditorium; or one for each 50 sq. ft. of floor area usable for seating if seating is not fixed	High	Low
	Cultural and active indoor sport or dance activities (nonseated)	One for each 4 employees	One for each 150 sq. ft. of gross floor area	High	Low
	Drive-in theaters	One for each two employees	Parking or "waiting" space equal to 30% of the vehicular capacity of the theater	Low	Low
	Fairgrounds/amusement parks/carnival or transient show	One for each 4 employees	One for each 75 sq. ft. of exhibit and amusement area, whether enclosed or not	Medium	Low
	Miniature golf	One for each 2 employees	three per hole	Medium	Low
	Golf driving ranges	One for each 2 employees	One per practice tee	Medium	Low
	Golf courses	One for each 2 employees	Ten per hole plus additional for gallery designed courses	Medium	
	Tennis and racquet ball	One for each 2 employees	One per court plus additional parking for associated uses	Medium	Low
	Skating rinks	One for each 2 employees	One per 400 sq. ft. of gross floor area	Medium	Low
	Bowling alleys	One for each 2 employees	Four per lane	Medium	Low
	Swimming pools	One for each 2 employees	One for each 300 sq. ft. of deck area plus one for each 100 sq. ft. of pool area	Medium	Low
	Swap meets	One for each 2 employees or retail space	One for each 100 sq. ft. of use area	High	Low
10.	**Educational:**				
	Colleges, junior colleges	One for each 2 employees	One for each 2 students	High	Low
	Sr. high school	Two for each 3 employees	One for each 4 students	High	Low
	Elementary and junior high school	Two for each 3 employees	One for each 4 auditorium seats	Medium	Low
	Nursery and preschool	Two for each 3 employees	One for each 8 students	Medium	Low

11.	**Miscellaneous:**				
	Funeral and crematory services	One for each company vehicle, one for each 2 employees	One for each 4 seats in all assembly rooms	Medium	Medium
	Air passenger terminals	One for each 2 persons employed	One for each 3 departing passengers based on each travel day	Medium	Low
	Bus and railroad terminals	One for each 2 persons employed	One for each 10 departing passenger cars based on average travel day	Medium	Low
	Beauty and barber shops	One for each 2 persons employed	2 spaces per chair	Medium	Low
12.	**Public:**				
	Government agencies	One for each 2 persons employed, one for each company vehicle	One for each 400 sq. ft. of gross floor area	Medium	Low
	Post office	One for each 2 persons employed; one for each company vehicle	One for each 100 sq. ft. of customer service area	High	High
	Libraries	One for each 2 persons employed	One for each 4 seats including assembly and reading rooms	High	Low

18.75.040 - Development standards.

A. Scope. This section provides general criteria and requirements for the development of off-street parking areas. Specific design standards are provided to ensure sound engineering and aesthetic design for the development of off-street parking.

B. Site Improvement Standards.

1. Slope and Grading. The finished slope and grade of off-street parking and loading facilities shall conform with county standards inclusive of the requirements of Chapter 18.81 (Grading) and the Manual.

2. Drainage. In addition to county drainage requirements, drainage flow shall be considered a resource and be designed to benefit landscaped areas on the development site. Erosion control measures shall be designed and implemented to control drainage flow from hard-surfaced areas onto abutting soil surfaces.

3. Landscaping. In accordance with the requirements of Chapter 18.73 (Landscaping Standards):

   a. A minimum of ten percent of the gross parking area shall be devoted to amenity landscaping (refer to Chapter 18.73, Landscaping Standards);

   b. Raised landscaping planters no less than four feet wide shall be placed at the ends of parking rows to define driveways with at least one tree per parking aisle and appropriate ground cover.

   c. Signage, landscaping and screening materials shall not obstruct sight distances or vehicle turning movements.

   d. When single parking rows occur, canopy trees shall be placed every four parking stalls in planters having a minimum of four sides with no dimension

less than four feet. When double aisles of parking occur, canopy trees shall be placed every eight parking stalls.

e. When the placement of trees in the required location among single or double row parking stalls is made impracticable by the location of a building, access area, drainage area or similar site constraint, the required parking area trees in the problem area may be reduced to one tree for every ten spaces in a four-foot wide median planter the length of the parking spaces. The remainder of the required trees may be placed within the bufferyard, retention/detention area or other landscaped area of the site.

f. Parking canopy structures may be used for all parking stalls. All parking canopy structures must be constructed with a heat reflective roofing material. Where used, photo voltaic cells or other solar technology may substitute for the heat reflective roofing material.

4. Screening. Screening (refer to Chapter 18.73, Landscaping Standards) shall buffer parking areas from the following general land uses:

a. Residential Areas. Parking facilities adjacent to property zoned, planned or used for residential purposes shall be separated from such property by a minimum five-foot wide landscaped buffer, which shall consist of either a minimum six-foot high decorative masonry wall or fence, permanently maintained vegetation, earth berms, or a combination of these elements. An opaque screen is required to provide noise, light, and access barriers between the dissimilar uses. If a wall or fence is used, at least fifty percent of the required vegetation shall be maintained on the external side of the wall or fence to provide visual relief when viewed from the residential side. Refer to Chapter 18.73 (Landscaping Standards) for specific requirements.

b. Streets. Parking facilities containing ten or more spaces, any of which abut a public right-of-way, shall be separated from the street right-of-way by a minimum five-foot wide landscaped buffer, as listed above, consisting of a minimum three and one-half foot high wall, earth berms, plant material or combination thereof. Refer to Chapter 18.73, Landscaping Standards, for specific requirements. The objective of this screening is visual relief; a fifty percent visual screen is acceptable. Landscaping within public rights-of-way requires a use permit and license agreement from the department of transportation and flood control district prior to installation.

5. Any lights used to illuminate parking spaces and drives shall be in accordance with the county outdoor lighting code (Title 15).

6. Emergency and Service Vehicle Access. All parking areas shall be designed to permit free access by emergency and service vehicles commonly in use by public and private emergency and service operators.

C. Entrance Drives.

1. Drives are to be located and designed in conformance with the requirements of the Manual and the following provisions to permit adequate ingress and egress:

a. Curbs, walls, berms, landscaping, or other barriers shall be provided to prevent ingress or egress at any point other than at designated entrance or exit drives.

b. Signage shall be allowed at entrance or exit drives in accordance with Chapter 18.79 (Sign Standards).

c.

Parking areas shall not be designed to require or encourage vehicles to back into a street, pedestrian access way, or alley in order to leave the lot or maneuver out of a parking space.

D. Parking Lot Design.

1. Dimensions of Parking and Access Areas. In accordance with Section 18.75.030, and the Manual.
2. Passenger Drop-off Points. Drop-off points, separated from street traffic and readily accessible without hazardous maneuvering, shall be provided in conjunction with the uses described in the manual.
3. Car Pools. Off-street parking provided for commercial office and industrial facilities requiring eighty or more spaces shall provide at least ten percent of the total parking area as designated for use by car pools, and be clearly signed and managed to that end.
4. Emergency and Service Vehicle Access. All parking lots shall provide unrestricted access by emergency and service vehicles in conformance with the Manual.

E. Parking Lot Improvements Standards.

1. Pavement Marking. Parking spaces in paved parking areas shall be permanently marked with striping in accordance with the Manual on Uniform Traffic Control Devices.
2. Barriers.
   a. Parking areas and spaces shall be provided with bumper barriers, wheel stops or wheel stop curbing, designed in conformance with the manual to prevent parked vehicles from extending beyond the property lines, damaging adjacent landscaping, walls or buildings, or overhanging sidewalk areas. Wheel stops or wheel stop curbing shall be located three feet from the front of the parking space.
3. Paving. All open parking areas shall be paved with a durable asphalt, concrete, stone, tile or brick surface, in conformance with the manual and consistent with pavement design principles and engineered according to soil conditions and wheel loads.

(Ord. 2011-2 § 18, 2011; Ord. 2008-93 § 2, 2008; Ord. 2005-35 § 5 (part), 2005; Ord. 2003-32 § 1 (part), 2003; Ord. 2001-165 § 1 (part), 2001; Ord. 1986-187 § 1 (part), 1986; Ord. 1985-112 § 1 (part), 1985; Ord. 1985-82 (part), 1985)

18.75.050 - Modification or waiver of requirements.

A. Administrative Modifications. Requirements for off-street parking may be modified provided that the modifications are noted on tentative and final subdivision plats or development plans in the following cases:

1. Motorcycle Parking. Motorcycle spaces may be provided in place of required car spaces in parking lots of thirty or more spaces, at a maximum of one motorcycle space for every thirty required car spaces.
2. Shared On-Site Parking. If more than one separate use or business is located on a site, the combined number of parking spaces required may be reduced by one percent for each separate use or business, up to a maximum of twenty percent for such combined uses or businesses.
3. Tandem Parking. Required parking spaces within a parking area or garage shall be individually accessible, except that vehicles may be parked in tandem in the following instances:

a. In a public parking area that provides attendants who park vehicles and who are present at all times the area is open for use;

b. In a garage or carport serving a duplex dwelling, multiple dwelling or mobile home park or subdivision, provided that both spaces are for the same dwelling unit, that required aisle widths are maintained and the tandem parking is not more than two cars in depth; or

c. For all-day restricted employee parking located on the same site as a commercial or office establishment, provided that required aisle widths are maintained and no more than twenty percent of the required spaces are so utilized for tandem parking.

B. Subdivision and Development Review Committee Modifications. The subdivision and development review committee may grant the following modifications of off-street parking requirements but in no case may the cumulative parking reduction options exceed thirty percent of the entire parking area:

1. Quantifiable standards of this chapter may be modified up to a maximum of ten percent, when it is demonstrated that an unusual site or use condition exits and when such adjustment will not result in danger to persons or property or in increased traffic.

2. Shared Peak-Hour Parking. The number of parking spaces required for two or more contiguous uses may be reduced up to a maximum of twenty percent of the total spaces required provided all of the following standards are met:

a. The contiguous uses have distinct and differing peak-hour usage, as determined by the subdivision and development review committee;

b. All parking spaces in the shared parking area are located within one thousand two hundred feet of an entrance to each contiguous use;

c. An agreement, to run with the land, is recorded between the separate owners for the shared parking; and

d. There is physical and legal access from the shared parking area to each of the contiguous uses.

3. Reserved.

4. Reserved.

5. Landscaping Increase. The number of parking spaces may be reduced for every two hundred square feet of landscaped bufferyard or amenity landscaping increased above the amount required by Chapter 18.73 up to a maximum of thirty percent of the total spaces required.

C. Individual Parking Reduction Plan. An individual parking reduction plan may reduce the total spaces required. There is no limit to the number of required spaces that may be reduced provided the following standards are met:

1. The plan shall be prepared by a traffic engineer or similar transportation professional and approved by the county's subdivision and development review committee;

2. The plan includes a road impact study for the development;

3. The plan includes a traffic generation study and land use profile of the development;

4. The plan shows that the reduced parking will ensure sufficient parking for the proposed uses;

5. The plan does not impede safe passage of moving traffic and does not increase traffic congestion;

6. A covenant runs with the subdivision plat or development plan noting adherence to the range of uses covered by the reduction plan;

7. A future revision to the covenant restricting uses may require submittal of a revised plan or an increase in parking spaces; and
8. Covered parking shall not be applied toward the total building square footage allowed.

(Ord. 2008-93 § 3, 2008; Ord. 2005-35 § 5 (part), 2005; Ord. 2003-32 § 1 (part), 2003; Ord. 2001-165 § 1 (part), 2001; Ord. 1985-112 § 1 (part), 1985; Ord. 1985-82 (part), 1985)

18.75.060 - Off-street loading requirements.

A. Scope. This section provides general criteria and requirements for the development of off-street loading areas. Refer to Table 18.75-3.

B. Applicability. The following criteria shall be used in determining the need for and number of loading spaces:
1. Intensity of the use; and
2. Development floor area.

C. Siting. Loading spaces shall be located:
1. Not more than one hundred feet from the facility they are designed to serve;
2. No closer than thirty feet to any property used or zoned, or officially planned by Pima County, for residential purposes.

D. Minimum dimensions (exclusive of aisles and maneuvering area):
1. Length: Forty-five feet;
2. Width: Twelve feet;
3. Overhead clearance: Fourteen feet.

TABLE 18.75-3
OFF-STREET LOADING SPACES REQUIRED

Combined square feet of floor area and outdoor storage and use areas	Loading space intensity number of spaces required		
	High	Medium	Low
Less than 10,000	1	1	0
10,000—29,999	2	1	1
30,000—59,999	3	2	1
60,000—99,999	4	3	2
100,000—149,999	5	4	3
Each additional 50,000	1	½	¼

E. Access. Each loading space shall be accessible from a street or from an aisle or drive connecting with a street. Such access may be combined with access to a parking lot if designed in a manner that will not disrupt normal traffic flow within the parking lot.

F. Maneuvering. No vehicles shall be permitted to maneuver in a public right-of-way, including public walkway easements.

G. Marking. Each loading space shall be striped or permanently designated by other suitable methods and permanently posted with a sign restricting its use to loading. Signage is to be based on the Manual on Uniform Traffic Control Devices (Federal Highway Administration). Bumper rails are to be provided where needed for safety or protection of property.

H. Paving. All loading areas shall be surfaced with a durable asphalt, concrete, stone, tile or brick surface, in conformance with the Manual and consistent with pavement design principles and engineered according to soil conditions and wheel loads.

I. Screening. In addition to provisions of Chapter 18.73, Landscaping Standards, loading areas shall be screened from adjoining properties and public thoroughfares with a minimum five-foot wide landscaped area and a six-foot high opaque screen, consisting of either a decorative wall, earth berms, vegetation or a combination of such elements (refer to Chapter 18.73, Landscaping).

J. Multiple Service. Loading spaces may be designed to serve two or more establishments located on the same or adjacent site, except that the total combined number of spaces provided shall not be less than fifty percent of the combined total required for all such combined users. Each user shall have access to loading zones, at grade, without having to cross or maneuver on public streets, alleys, or walkways.

K. Restrictions. Loading spaces shall not be used for repair work, vehicle storage or to satisfy area requirements for off-street parking.

L. Modification of Requirements for Unusual Sites. The subdivision review committee may reduce the number or location of required loading spaces where they determine an unusual situation exists.

(Ord. 2005-35 § 5 (part), 2005; Ord. 1985-112 § 1 (part), 1985; Ord. 1985-82 (part), 1985)

18.75.070 - Exceptions.

The requirements of this chapter do not apply to the ML zone or the RVC zone adjacent to the ML zone.

(Ord. 2003-72 § 5, 2003)

Chapter 18.78 - GATEWAY OVERLAY ZONE

Sections:

18.78.010 - Purpose.

A. Protect and enhance the scenic quality of entry points into metropolitan Tucson and nearby public preserves;

B. Reduce the visual impact of development on scenic vistas and entry points by providing design guidelines and by requiring more intensive restoration of graded areas;

C. Provide an appropriate visual transition between natural preserves and more highly urbanized areas through the implementation of screening or siting of developmental elements;

D. Protect and enhance the southwest character of Pima County;

E. Encourage well designed buildings and sites;

F. Communicate to land use development applicants the goals of the Gateway Overlay Zone and the role the Design Review Committee takes in implementing the gateway standards and guidelines;

G. Provide for safe interaction between motorized vehicles, non-motorized vehicles and pedestrians;

H. Encourage pedestrian scale developments that take advantage of the visual values of on-site architectural and landscape aesthetics and off-site scenic qualities; and

I. Maintain and encourage economic growth and health.

(Ord. 2006-30 § 2 (part), 2006; Ord. 2001-162 § 2 (part), 2001)

18.78.020 - Applicability.

A. This chapter applies to the following unless otherwise stated in 18.78.030

1. New residential development requiring a development plan, new non-residential development, or substantial expansion of an existing development subject to Chapter 18.71, on any land within a GZ-1 (Urban Gateway Overlay Zone) and GZ-2 (Public Preserve Gateway Overlay Zone). Substantial expansion occurs whenever a new development plan is required. When a new substantial expansion occurs and a new development plan is required, the standards of this chapter will apply except that:

a.

The bufferyard requirements contained in this chapter shall be complied with whenever space on the property allows, and exempted only when it is demonstrated to the design review committee that it is not possible to meet these standards;

b. If the individual proposing the expansion does not control the area of the approved plans and development, the provisions of this chapter shall not apply to the approved plans and development if the individual proposing the expansion provides the following:

(1) A written statement that the individual proposing the expansion has requested in writing that any owner or owners of the area of the approved plans, or development, comply with the provisions of this chapter and that such owners have rejected the request;

(2) A copy of the written request and any of the written responses.

c. Lack of control over the area of the approved plans and development may be demonstrated by non-ownership, or existence of a lease, rental agreement or other agreement that prevents, or significantly inhibits alteration of the property in conformance with the provisions of this chapter.

2. New signs and replacement of existing signs.

3. A rezoning request or a comprehensive plan amendment request, on any land within a GZ-2 (Public Preserve Gateway Overlay Zone).

4. New residential subdivisions. Applicable development standards for new residential subdivisions are limited to bufferyard standards in 18.78.030(C)(2)(c) and architectural color standards in 18.78.030(F)(2)(b).

B. If there is a conflict between this Chapter and Chapters 18.61 (Hillside Development Overlay Zone); 18.67 (Buffer Overlay Zone); 18.73 (Landscaping, Buffering and Screening Standards); 18.75 (Off-Street Parking and Loading Standards); 18.79 (Sign Standards) or Section 18.77.040 (Scenic Routes), the most restrictive applies unless otherwise indicated in this chapter.

(Ord. 2006-30 § 2 (part), 2006; Ord. 2001-162 § 2 (part), 2001)

18.78.030 - Development Standards.

A. Scope. This section provides general standards for parking and circulation, landscaping, site design, signs, and architectural design. Development must be consistent with the Gateway Development Guidelines Manual.

B. Parking and Circulation.

1. Design Objective. Provide functional, efficient, parking facilities and circulation corridors that are visually attractive and unobtrusive from off-site. Use landscape and other design features to interrupt large expanses of paving in large parking lots to create smaller areas of connected parking facilities.

2. Standards.

a. Parking facilities shall be designed in compliance with Chapter 18.75

b. Pedestrian facilities are required adjacent to or within the arterial or collector rights of way and shall be designed in accordance with County Subdivision and Development Street Standards Manual.

c. Internal pedestrian facilities shall be designed according to the following:

(1)

Pedestrian facilities adjacent to buildings shall be connected to pedestrian facilities within parking lots.

(2) Internal and adjacent off-site pedestrian facilities shall be interconnected.

d. Parking lots for non-residential and multiple dwelling uses shall be screened by a minimum three-foot-high decorative masonry wall placed at the inside boundary of any required bufferyard. Minor variations may be allowed. This wall shall satisfy any Chapter 18.72 bufferyard structure requirement.

C. Landscaping Standards.

1. Objective.

a. To provide for physical, and visual buffers and transition between different land uses.

b. To break up large expanses of paving within large parking lots by creating small scale areas of connected parking facilities.

c. To create an aesthetically attractive site design.

2. Standards.

a. Gateway Overlay Zone setback areas shall be landscaped in accordance with Chapter 18.73 (Landscaping, Buffering and Screening Standards) unless otherwise indicated in this chapter.

b. Emphasis shall be placed on retaining and enhancing any existing indigenous vegetation. Introduced landscape plants must be chosen from the Buffer Overlay list of plants contained in the Landscape Design Manual.

c. Bufferyards.

(1) In no case shall bufferyards along arterials and collectors be less than 20 feet in width.

(2) Bufferyards shall be in common areas for residential subdivisions.

(3) Slopes in bufferyards may not exceed a ratio of four-to-one horizontal to vertical distance, except in natural bufferyards.

(4) Splash pads and other limited areas of stormwater drainage structures may be allowed with the approval of the planning official and the county engineer, unless a natural bufferyard option specified by the Pima County Landscape Design Manual is utilized.

(5) Non-hard surface trails required by Pima County Natural Resources Department may be located within bufferyards, provided that the width of the trail does not exceed eight feet.

d. Internal Site Landscaping.

(1) All disturbed areas not used for buildings, parking, access, approved trails, or stormwater drainage structures shall be landscaped with a minimum of 1 tree, 4 shrubs, and 10 accent plants per every 200 square feet and shall be curbed or otherwise protected when adjacent to vehicular use areas, unless otherwise required.

(2) A landscaped area with an average width of five feet shall be provided along the frontages of buildings visible from off-site. The area shall be located between main building entries and parking areas. The landscaped area shall contain a minimum of 8 shrubs, and 10 accent plants for every 40 linear feet and may be used to meet amenity landscape requirements.

D. Site Design.

1. Objective.

a. Improve the quality of commercial, industrial, multi-family, and single-family development design through comprehensive site design that provides internal and external connectivity.

b. Connect the building and pedestrian pathways to the street and adjacent sites by coordinating its placement with properties that conform to these design standards and guidelines.

c. Encourage creativity and design through the use of guidelines.

2. Standards.

a. Parcels larger than five acres and under one ownership shall be planned as one development.

b. Non-residential development and parcels larger than five acres shall be designed to promote internal circulation for pedestrians.

c. Linkages shall be provided to adjacent preserves, parks, and trails where connections may be made.

d. Outdoor lighting shall conform to Chapter 15.12 of the Pima County Code. All

e. drainage structures shall be landscaped as required or recommended by the storm water drainage manual, and shall be shown on the landscape plan submitted with development plans and plats.

f. Utilities shall be underground. Utility plans shall be coordinated and consistent with development and landscape plans. Proposed utility easements may not be located within required bufferyards except to cross the bufferyard perpendicularly.

g. Sidewalks are required along all arterial and collector routes and shall be a minimum of four-feet-wide. If a sidewalk is located within the required bufferyard, a minimum six-foot-wide planting area containing 1 tree spaced at a minimum of 40 feet on center shall be located between the sidewalk and the right-of-way. This strip may be used to meet bufferyard width requirements, provided that all other requirements are met.

h. No parking area may be larger than 48,000 square feet on sites larger than five acres containing more than one building pad without separation, by a building pad or building's associated landscaping, from other parking areas by a minimum five-feet-wide curbed landscape strip containing a minimum of 1 tree, 4 shrubs, and 10 accent plants for every 40 linear feet. The landscape strip may contain site-lighting fixtures. The landscaped strip may contain pedestrian walkways to connect interior pedestrian circulation paths constructed perpendicular to the length of the landscape strip.

i. Parking lots adjacent to property lines closest to the nearest public preserve shall be screened using a minimum 20-foot-wide landscape buffer, planted at the density of a type D bufferyard as required by the Landscape Design Manual, except where the Design Review Committee determines that the additional bufferyard will not provide visual screening of the development.

E. Signs.

1. Objective.

a. Provide for an effective form of communication while minimizing visual impacts on and off-site.

b. Ensure that the signage is clear, and compatible with the character of the Gateway Overlay Zone.

c. Enhance the potential economic value and encourage quality development within the community.

2. Standards.

a. All signs shall be designed to be architecturally compatible with the development complex as approved by the Design Review Committee.

b. Illumination. Illumination of signs may be accomplished only by one of the following methods:

(1) Halo Illumination

(2) Internal illumination to the extent that only the sign characters and logos emit light.

c. Illumination time restriction.

(1) An illuminated wall sign shall be turned off no later than one hour after the closing of a business.

(2) An illuminated sign in the interior of a business, which is visible from the outside, cannot be illuminated when the business is closed.

d. Prohibited lighting. The following types of light sources are prohibited as means to illuminate or attract attention to any sign:

(1) Blinking, flashing, rotating and animated light sources.

(2) Search lights.

F. Architectural Design.

1. Objective. To improve the quality of development in the Gateway Overlay Zone through instituting design standards and guidelines for new construction and alterations. The design guidelines and standards are intended to reflect the historic, natural, southwestern, or rural character of Pima County.

2. Standards for non-residential developments.

a. Building Façades. All façades, except as noted, shall have visual elements designed to break up large scales and shall prevent a uniform appearance by:

(1) Incorporating wall plane projections or recesses with a depth of at least 3 percent of the length of the façade. Such features shall include at least 20 percent of the length of the façade.

(2) Limiting uninterrupted length of any façade to a maximum of 100 horizontal feet.

(3) Designing ground floor façades longer than 100 feet facing public streets with arcades, entry areas, awnings or other features along no less than 60 percent of the façade.

(4) Including no less than 3 of the following items in a pattern that repeats at intervals of no less than 30 feet:

(a) Color change;

(b) Texture change;

(c) Material module change;

(d) Expression of architectural or structural bay through a change in plane no less than 12 inches in width, such as an off-set, reveal, or projecting rib.

b. Architectural Colors.

(1) All exposed exterior walls and roofs of buildings, retaining walls, and accessory structures that are visible from a designated Gateway Overlay Zone shall be consistent with the natural colors of the surrounding area and shall blend in with the natural setting. Corporate colors are prohibited if they are not compatible with existing natural colors as outlined in Section 18.78.030(F)(2)(b)(2)

(2) Allowable colors include, but are not limited to, blues, greens, yellows, browns, rusts, sepias, sands, tans, buffs, olive and grey as they occur in nature at the site.

(3) Applicant shall demonstrate that colors complement and blend with surrounding development landscape colors.

(4) Colors shall complement and blend with surrounding vistas.

(5) Colors shall not exceed a light-reflective value (LRV) of 48 percent.

(6) These colors do not apply to a roof screened by a parapet wall extending at least three feet above the building or to building accessories with minor accent colors that are part of the architectural design such as decorative tiles, fixtures, striping, awnings, or decorative entryways.

c. Building Height.

(1) Commercial and multi-family building heights may not exceed 34 feet anywhere along the roofline and may not exceed an average height of 28 feet.

(2) Average building height shall be determined by measuring from finished grade five feet from the building to the highest point on the building at intervals of five feet around the building perimeter and then averaging the results.

(Ord. 2006-30 § 2 (part), 2006; Ord. 2001-162 § 2 (part), 2001)

18.78.040 - Site Planning Review.

A. Objective. To provide the Design Review Committee a process for reviewing projects subject to compliance with this chapter. For the purpose of this chapter, site planning means the arrangement of landscaping, open spaces, buildings, circulation elements and other features to support the goals of the development.

B. Standards. The Design Review Committee shall comprehensively review, at a regularly scheduled meeting, all proposed development subject to this chapter, except for single-family residences not within subdivisions, and shall approve, approve with conditions, deny, or continue the review to a later hearing to allow design revisions based on committee recommendations. The review shall include proposed site planning, architectural building design and colors, landscaping, parking lot design, and freestanding signs for compliance of the proposed development with the purpose, standards, and guidelines of this chapter and any design related conditions of rezoning.

1. Development proposals subject to committee review shall be submitted to Pima County for review and recommendation by planning staff, subject to the schedule and submittal requirements established by the Development Services Department to ensure a timely, efficient, and complete review by the committee.

2.

The committee shall not approve any proposed development subject to its review without finding that it complies with the purpose, standards and the guidelines of this chapter.

3. Development proposals conditionally approved by the committee shall be submitted, by the applicant, to planning staff for determination of final compliance with the committee's decision within 30 days of the date of the hearing.

C. The decision of the Design Review Committee may be appealed to the board of adjustment. Appeals shall be submitted within 60 days of the date of the hearing, appeals received after that date shall not be considered.

D. Any change in site design that involves any committee approved color, architectural design, or more than ten percent of any area requirement must be approved by the committee subject to the review requirements of this chapter. All other changes may be approved by the planning official provided that proposed changes comply with the purpose, standards, and guidelines of this section.

E. Committee approval shall expire two years from the date of approval hearing. Approval may be extended for up to an additional two (2) years at the discretion of the planning official if the circumstances and basis, for the Design Review Committee's decision, have not significantly changed since the date of approval.

(Ord. 2006-30 § 2 (part), 2006; Ord. 2001-162 § 2 (part), 2001)

18.78.050 - Rezonings and Comprehensive Plan Amendments.

A rezoning or comprehensive plan amendment request within GZ-2 (gateway overlay zone - public preserve) to allow more intensive uses shall be reviewed by the board of supervisors and the planning and zoning commission to ascertain if the proposed change serves a community need that outweighs the need to keep the land use intensity category or zoning district at the existing intensity.

(Ord. 2001-162 § 2 (part), 2001)

18.78.060 - Designated Gateway Overlay Zones.

The designation and determination of a gateway shall be initiated by the board of supervisors based on exceptional scenic quality that helps define the community character. The scenic resources may be, but are not limited to, unique and significant views of mountains, vegetation, architecture, site design, or geologic formations.

(Ord. 2001-162 § 2 (part), 2001)

Chapter 18.81 - GRADING STANDARDS

Sections:

18.81.010 - Purpose and interpretation.

A. Purpose:

1. The purpose of this chapter is to protect the public health, safety, general welfare, and aesthetics by regulating grading (including initial clearing, brushing or grubbing, and subsequent excavating or filling) on private and public land, including county-owned land, within the unincorporated area of Pima County.
2. It establishes grading standards designed to:
   a. Regulate the development of potentially hazardous terrain;
   b. Conserve the general visual character of grading sites and settings;
   c. Enhance the value of new development; and
   d. Conserve the value of existing, affected properties.
3. The guidelines and standards of this chapter and the grading design manual have been prepared in the context of Pima County's specific desert environment. They are intended to complement the applicable provisions of Chapter 18.61 (Hillside Development Overlay Zone) and the Floodplain Management Ordinance, and not to authorize any grading activity prohibited by this chapter or any county ordinance.

B. Interpretation:

1. This section shall be used as a guide whenever a conflict arises in the interpretation or enforcement of this chapter. The design, implementation and mitigation of grading regulated by this chapter (refer to Section 18.81.020) shall be reviewed prior to the issuance of any grading permit, to ensure compliance with the guidelines of this section and the specific standards and requirements of this chapter.
2. The design and implementation of all grading shall:
   a. Minimize scars and other adverse visual impacts resulting from cut and fill;
   b. Blend with the natural contours of the land;

c. Conserve the natural scenic beauty and vegetation of the site;

d. Be for purposes other than enabling buildings to penetrate the building height contour line; and

e. Restrict the areas and volumes to the minimum necessary to implement the planned development.

3. In all grading projects, measures shall be taken to:

a. Ensure that graded hillside, slopes or other areas subject to erosion are stabilized;

b. Reduce the erosion effects of stormwater discharge, preserve the flood-carrying capacity of natural or constructed waterways by limiting soil loss, and protect drainageways from siltation;

c. Minimize dust pollution and surface water drainage from graded areas during grading and development; and

d. Ensure that development activity is designed and implemented to minimize adverse impacts and include appropriate restorative measures.

(Ord. 1986-187 § 1 (part), 1986)

18.81.020 - Applicability and exemptions.

A. Scope:

1. All development projects shall require a Type 1 or Type 2 grading permit, except as exempted in subsection D of this section. In general, small private grading operations do not require a grading permit; major grading for custom home development requires a Type 1 permit, and general grading for larger development projects requires a Type 2 permit.

2. County development project shall abide by the requirements of Section 18.41.040, general grading performance standards, of this chapter. The board of supervisors may grant a special exception at a public hearing to a requirement of said section for a county development project.

B. Type 1 (grading sketch) permit applicability: A Type 1 grading permit is required for:

1. Single dwelling residential development on a single lot with a development envelope of fourteen thousand square feet or greater.

2. Nonresidential development which does not require a subdivision plat or development plan.

3. Stockpiling of between one hundred cubic yards and fifty thousand cubic yards of material.

4. Grading which requires a permanent cut or fill slope greater than five feet in height and steeper than a 3:1 slope, or grading on slopes of fifteen percent or greater.

C. Type 2 (grading plan) permit applicability: A Type 2 grading permit is required for:

1. Residential development which requires a subdivision plat or development plan.

2. Nonresidential development which requires a subdivision plat or development plan.

3. Stockpiling of more than fifty thousand cubic yards of material.

D. Exemptions: The following activities are exempted from this chapter:

1. Residential development on a single lot, with a development envelope of less than fourteen thousand square feet;

2. The subsequent expansion, by less than twenty-five percent and not violating the spirit of this chapter, of an exempted or approved graded area;

3. The clearing, brushing or grubbing of an area of less than fourteen thousand square feet or for activities exempted in this subsection;
4. Stockpiling of less than one hundred cubic yards of material;
5. Resurfacing or maintenance of an existing paved surface;
6. New pavement of less than three thousand square feet;
7. Individual sewage disposal system with a county health department permit;
8. Excavation below finished grade for a basement, foundation, wall, or swimming pool authorized by a building permit or zoning construction permit (refer to Section 18.01.030(E), General Provisions);
9. Cemetery graves;
10. Refuse disposal site controlled by other regulations;
11. Exploratory excavation under the direction of a soil engineer or engineering geologist, provided all excavation is properly backfilled;
12. Archaeological exploration conducted under state permit by a qualified archaeologist;
13. Removal of selected individual plants for storage and replanting;
14. Underground utility installations under a paved roadway surface or a continuously-maintained unpaved roadway surface;
15. Grading for the maintenance of an existing private access road or driveway, provided that if either existed prior to adoption of, or was established in conformance with, this chapter. Proof of such may be required by the county engineer;
16. Grading for an appurtenant access or utility easement;
17. Land uses under statutory exemption (refer to Section 18.01.030(C), General Provisions).

(Ord. 2011-2 § 20 (part), 2011; Ord. 1990-61 § 1 (part), 1990; Ord. 1986-187 § 1 (part), 1986)

18.81.030 - Definitions.

A. General usage: The definition and usage of terms in this chapter are as contained within this code, except that the definition and usage of terms describing drainage are as contained within the county Floodplain Management Ordinance.

B. Definitions: For purposes of this chapter only, the following words and terms shall mean:

1. Access road: A road within one mile of the grading side, designated on the approved grading plan, and used, during grading, for the transport of grading equipment, hauling of fill and other equivalent vehicular traffic to and from the grading site.
2. Approval: Written notice by the county engineer approving the design, progress or completion of work.
3. Approved plan: The most current grading sketch or grading plan which bears the authorized signature of approval of the county engineer.
4. Approved testing agency: A facility which is equipped to perform and certify the tests required by this chapter and whose testing operations are controlled and monitored by a civil engineer.
5. Borrow: Earth material acquired from an off-site location for use in grading a site.
6. Brushing: The selective removal of vegetation.
7. Building height contour line: A contour elevation line set at the existing grade elevation, plus the maximum building height permitted by site rezoning conditions or

this code and fifty percent of the additional height added by permitted fill. Refer to Illustration 18.81-1 (Section 18.81.110).

8. Clearing: The substantial removal of vegetation.
9. Envelope, building:
   a. A dwelling unit and all attached roofed structures, including carports or patio ramadas;
   b. For nonresidential development, the building envelope shall be the main building and all attached roofed structures.
10. Envelope, development: The sum of the areas of the permit holder's land to be graded, including the building envelope, accessory buildings, and areas of related parking, driveways, swimming pools, walls and other accessory structures, but excluding individual sewage disposal systems.
11. Erosion: The wearing away of the ground surface as a result of the movement of wind, water or ice.
12. Excavation: The artificial (i.e., mechanical, manual, blasting or other such) means for removal of earth material.
13. Final inspection: Field inspection conducted by the county engineer prior to project acceptance or release of assurances (if required).
14. Grade: The vertical location of the ground surface.
15. Grade, existing: The actual, current ground surface as of the date of adoption of the ordinance codified in this chapter.
16. Grade, finished: The final grade conforming to the approved grading sketch or plan.
17. Grade, rough: The stage at which grading substantially conforms with the approved grading sketch or plan.
18. Grading: The clearing, brushing, grubbing, excavating, or filling of a site.
19. Grading permit: An official document issued by the county engineer authorizing the grading activity specified by the grading permit conditions.
20. Grading permit conditions: The specifications and requirements of the approved grading sketch or grading plan, grading statement, soils report or other documents necessary for grading permit approval.
21. Grubbing: The removal of trees and other large plants by their roots.
22. Inspector: A person authorized by the county engineer or building official to perform inspection on grading work.
23. Retaining wall: A wall designed to withstand lateral and hydrostatic pressures and built to keep earth from sliding, and which is two feet or greater in height from the lowest point of earth at the foundation to the top of the wall.
24. Revegetation: Placement of living plant material on sites or cut and fill slopes where the natural vegetation has been removed.
25. Site: Any lot or parcel of land, or contiguous combination of lots and parcels under the same ownership or unified control, where grading is to be performed.
26. Slope: An inclined ground surface, the inclination of which is expressed as a ratio of horizontal distance to vertical distance (refer to Illustration 18.81-2, Section 18.81.110).
27. Soil: Naturally occurring deposits overlying bedrock.
28.

Stabilization: Treatment with mitigation measures in accordance with the grading design manual, and approved by the county engineer that contribute to the erosion or siltation resistance, or the structural strength, of a graded area.

29. Stockpile: The storage of uncompacted earth material.

(Ord. 1998-50 § 2, 1998; Ord. 1990-61 § 1 (part), 1990; Ord. 1986-187 § 1 (part), 1986)

18.81.040 - General grading performance standards.

A. Scope:

1. The performance standards of this section are general grading performance requirements. A companion grading design manual elaborates minimum performance standards referenced by this section and includes nonregulatory guidelines for superior grading performance.
2. The grading design manual shall be adopted and amended in accordance with Section 18.01.070 (General Provisions).* The commission may hold the preliminary and public hearings concurrently. The technical review committee (refer to Section 18.99.040, Review Committees) shall provide a recommendation prior to commission public hearing.

B. Site revegetation and stabilization: All graded areas except those to be used for agriculture or livestock purposes, not revegetated, stabilized or constructed on upon expiration of the grading permit shall be revegetated or stabilized within sixty days of permit expiration in accordance with the grading design manual, and furthermore, in cases where the purpose of the grading permit is not met, shall be designed to restore the native vegetative community.

C. Slopes: All exposed cut or fill slopes shall be revegetated or stabilized in accordance with the grading design manual and the approved grading sketch or plan.

D. Terracing: Terracing to control surface drainage and debris on cut or fill slopes may be required in accordance with the grading design manual. The width of a terrace shall be a minimum of six feet.

E. Fill: Fill shall be compacted and soil tested in accordance with the grading design manual.

F. Setbacks: The following setbacks shall be increased by the county engineer if considered necessary for safety or stability, or to prevent possible damage from water, soil or debris:

1. Top of Cut Slope: The top of cut slopes shall be made not nearer to a site boundary line than one fifty of the vertical height of cut, with a minimum of two feet and a maximum of ten feet. The setback may need to be increased for any required interceptor drains.
2. Toe of Fill Slope: The toe of fill slope shall be made not nearer to the site boundary line than one-half the height of the slope, with a minimum of two feet and a maximum of twenty feet.
3. Buildings: Buildings shall be set back from the toe and top of slopes in accordance with the county building codes (Title 15), Illustration 18.81-3 in Section 18.81.110 or the approved soils report. This shall not reduce the required building setback from property line.
4. Rights-of-way: The required setback of a slope toe adjacent to a public right-of-way may be reduced with the approval of the county engineer, if there will be no adverse effect and:
   a. Easements are not required; or
   b. Retaining walls are used.

G.

Building height: The finished grade and building pads shall be established so that the maximum building height shall not exceed the building height contour line (refer to Illustration 18.81-1, Section 18.81.110).

H. Drainage control systems:

1. Permanent systems:

a. Erosion control shall be constructed and maintained to prevent erosion of slopes, and cleared, brushed, grubbed or graded areas, in accordance with the grading design manual.

b. Where cut slopes are not subject to erosion due to the erosion-resistant character of the native materials, erosion control may be omitted upon approval by the county engineer.

c. Erosion control devices to prevent erosion or sediment deposition on off-site property may be required in accordance with the grading design manual.

d. The shoulders of a paved public or private roadway shall be protected against erosion wherever curbing or constructed spillways are not provided, in accordance with the Grading Design Manual.

e. Surface drainage:

1) Cut and fill slopes shall be provided with approved surface drainage for stability and erosion protection of affected properties in accordance with the Grading Design Manual;

2) Surface drainage interceptors shall be provided at the top of cut and fill slopes where there is surface runoff and erosion potential in accordance with the Grading Design Manual;

3) Drainage slopes to protect foundations shall be provided in accordance with the Grading Design Manual.

f. Subsurface drainage: Subsurface drainage for stability and protection of affected properties from ground water seepage may be required in accordance with the Grading Design Manual.

2. Interim systems: Interim drainage control systems shall be provided in accordance with the Grading Design Manual.

I. Import and export of earth material:

1. Loading of earth material shall occur only within the time limits of subsection J of this section, and dust palliatives shall be applied in accordance with the Grading Design Manual.

2. The transportation of earth material on public rights-of-way shall be in a manner that minimizes blowing soil and other hazards.

J. Hours of grading:

1. Grading equipment operation within one-half mile of a structure occupied by humans shall not be conducted between sunset and seven a.m.

2. Normal equipment maintenance involving lights, motors or generators, and occurring within six hundred feet of a structure occupied by humans, shall not be conducted between nine p.m. and seven a.m.

3. The county engineer may allow grading equipment operation or maintenance during other hours if such operations are not detrimental to the health, safety or welfare of the inhabitants of the structure.

4.

Permitted hours of operation or maintenance may be shortened by written notice, if the county engineer finds a substantial adverse effect on the health, safety or welfare of the surrounding community.

K. Restriction of vehicles:
   1. No vehicles shall be driven over "natural open space areas," as designated on the approved grading sketch or grading plan.
   2. Points-of-entry to the site during grading shall be only as designated on the approved grading sketch or grading plan.
   3. For Type 2 permits, access roads to the site during grading shall be only as designated on the approved grading plan.

L. Additional requirements:
   1. During grading, and until revegetation or stabilization has taken place, dust shall be minimized through application of approved dust controls in accordance with the Grading Design Manual.
   2. Public rights-of-way, sidewalks and other improvements shall be maintained during grading in a neat and clean condition, free of loose soil, construction debris and trash.
   3. Debris, fill or equipment shall not be stored within a public right-of-way without the written approval of the county engineer.
   4. Cut or fill material in excess of that allowed by the grading permit shall be disposed of in accordance with the Grading Design Manual.

(Ord. 1990-61 § 1 (part), 1990; Ord. 1986-187 § 1 (part), 1986)

** Editor's note: Section 2 of Ordinance No. 1990-61 states as follows: "The Grading Design Manual, which is attached to and incorporated in this ordinance as Exhibit A, and which contains technical requirements for grading, is hereby adopted and shall have all of the force and authority of an ordinance. The Grading Design Manual shall not be published as a part of the Pima County Zoning Code, but shall be published as a separate booklet."*

18.81.050 - Submittals and procedures: Type 1 (grading sketch).

A. Scope: A Type 1 application for a grading permit requires a completed grading permit application, grading sketch and grading statement. A survey sealed by a registered land surveyor is not required.

B. Grading sketch requirements:
   1. The existing and proposed finished grade of the area to be graded, based on spot elevations or two-foot contour interval maps;
   2. The extent of graded areas, shaded and labeled "graded area," and, where structures are to be constructed:
      a. The existing grade at the primary building corners and proposed finished floor elevations; and
      b. The proposed building heights, shown to conform to the building height contour line requirements;
   3. The location of proposed mitigative measures, such as revegetation or retaining walls;
   4. The exterior boundaries of the site;
   5. Access roads and points-of-entry to the grading site.

C. Grading statement: A written grading statement shall be submitted with an application for a grading permit. The statement shall include, where applicable:
   1. A description of stabilization, erosion and drainage control measures;
   2.

The off-site disposal location and estimated quantity of earth material and vegetation to be removed from the site during grading;

3. Estimated starting and completion dates;

4. A description of the dust control method to be used during grading and until revegetation or stabilization has been completed.

D. Documents preparation:

1. Documents shall be prepared in accordance with the Grading Design Manual; and

2. Information shall conform with rezoning conditions (when applicable and shall be consistent with the rezoning site analysis (refer to Section 18.91.030(F), Rezoning Procedures) and other applicable regulations.

E. Application:

1. The grading permit application, grading sketch and other required materials shall be submitted for review to the central permits division of the county planning and development services department.

2. When desired, a letter of intent to exercise the inspection certification option (refer to Section 18.81.070B) shall be submitted with the application.

3. The grading permit application shall be completed and signed by the owner or authorized representative.

4. Fees are payable to the county treasurer in accordance with the fees schedule adopted by county ordinance.

F. Application review:

1. The grading sketch and statement shall be reviewed for consistency with applicable regulations and standards, and, if approved, a grading permit shall be issued within five working days of application.

2. If determined inadequate, the application shall be returned within five working days and the owner may resubmit, without additional fees, an amended grading sketch or statement.

3. The county engineer shall require that plans and specifications be modified to make them consistent with this code or other applicable regulations. A grading permit may be issued with additional conditions.

G. Grading permit issuance and expiration:

1. Issuance: Grading permits are issued by the county engineer. A copy of the grading permit and approved grading sketch shall be kept in an easily accessible location on the site.

2. Expiration: A grading permit shall be null and void if the authorized work has not been completed within one year of permit issuance.

H. Grading permit extension and reapplication:

1. Extensions: Upon written request by the permit holder, the county engineer may approve a single one-hundred-eighty-day time extension of a grading permit.

2. Reapplication: Reapplication for a grading permit may be made in accordance with this chapter. Assurances of additional conditions may be imposed by the county engineer on a permit, as a consequence of reapplication.

I. Changes to grading permit:

1. Hazardous conditions: If drainage problems, flood hazards or other hazards occur that were not considered at the time the permit was issued, the county engineer shall

require that any substantial engineering modifications be submitted in a report and that the grading design be modified.

2. Nonhazardous conditions: If unanticipated nonhazardous conditions are encountered during grading and are beyond the scope of the grading permit, the permit holder may submit the necessary engineering modifications in a report to be reviewed and approved by the county engineer.

(Ord. 1990-61 § 1 (part), 1990; Ord. 1986-187 § 1 (part), 1986)

18.81.060 - Submittals and procedures: Type 2 (grading plan).

A. Scope: A Type 2 application for a grading permit requires a completed grading permit application, grading plan, grading statement and soils report. Where applicable and not otherwise submitted, drainage improvement plans shall be required also.

B. Grading plans requirements:

1. The existing and proposed finished grade contours, or sufficient spot elevations (except as amended in subdivision 2 of this subsection) of the area to be graded, at a minimum of two-foot contour intervals for slopes up to fifteen percent. Slopes over fifteen percent shall be shown in accordance with Chapter 18.61 (Hillside Development Overlay Zone).
2. The extent of graded areas, shaded and labeled "graded area," and, where structures are to be constructed:
   a. Spot elevations may be shown for the finished grade within the building envelope;
   b. All building pads, showing the existing grade at the primary building corners and proposed finished floor elevations; and
   c. The proposed building heights, shown to conform to the building height contour line requirements.
3. The general topography for one hundred feet, or as specified by the county engineer, outward from sites greater than five acres; the county engineer may determine that such information is necessary for smaller sites.
4. A description of the mitigation methods, specifying elevations, dimensions, quantities and locations, to be used during grading and until revegetation or stabilization has been completed.
5. The exterior boundaries of the site, the basis of bearing and a benchmark to establish the vertical datum.
6. The extent and manner of preserving, relocating, clearing and disposing of vegetation.
7. The final ground cover, revegetation (if any), erosion control and proposed methods for cut or fill stabilization, based upon the soils report (refer to subsection C of this section).
8. Access roads, haul routes and points-of-entry to the grading site.
9. Where drainage improvement plans have not been submitted separately or where interim drainage conditions exist because of project phasing, plans for:
   a. Drainage or other protective devices to be constructed as part of the grading;
   b. The drainage area and estimated runoff of the area served by drains.
10. A general description of potential paleontological, archaeological or historical resources, and proposed mitigation measures from a qualified archaeologist or archaeological institute.

11. The off-site disposal location and estimated quantity of earth material to be removed from the site during grading.
12. Estimated starting and completion dates for each grading phase.
13. For superior project design and grading performance, it is encouraged that the project designer prepare for project design use an existing site inventory, identifying and quantifying vegetation, soils, on- and off-site viewshed constraints, slope analysis and drainage.

C. Grading Statement: Refer to Section 18.81.050C.

D. Soils report:
1. The report shall contain all geotechnical engineering information and recommendations applicable to the project, in accordance with the Grading Design Manual, and shall be sealed by the soils engineer prior to submittal.
2. The civil engineer or qualified registrant responsible for preparing the grading plan shall incorporate all report recommendations into the plan and statement.
3. Approved report recommendations shall become conditions of the grading permit.
4. The civil engineer or soils engineer of the developer shall be required to provide written certification to the building official that the foundation sub-base requirements have been met.

E. Documents preparation:
1. Documents shall be prepared in accordance with the Grading Design Manual.
2. Information shall conform with rezoning conditions (when applicable) and shall be consistent with the rezoning site analysis (refer to Section 18.91.030F, Rezoning Procedures) and other applicable regulations.
3. Grading plan preparation: The plan shall be prepared by, or under the direction of, a civil engineer or qualified registrant (who may consult with, or submit information in conjunction with, a landscape architect or other qualified person with expert knowledge of the subject).

F. Application:
1. The grading permit application, grading plan and other required materials shall be submitted to the county department of transportation for distribution to the applicable county review agencies.
2. When desired, a letter of intent to exercise the inspection certification option (refer to Section 18.81.070B) shall be submitted with the application.
3. The grading permit application shall be completed and signed by the owner or authorized representative.
4. Fees are payable to the county treasurer in accordance with the fees schedule adopted by county ordinance.
5. At the discretion of the county engineer, grading assurances may be required in the form of a performance bond or other security acceptable to the county engineer. The assurances shall be applied only to:
   a. Eliminate potential hazardous conditions; or
   b. Mitigate the effects of dust, drainage, erosion, visual scars or hazardous conditions, in accordance with the Grading Design Manual;

G. Application review:
1. Grading plans and related submittals shall be reviewed concurrent with the tentative plat or development plan review process for the project;

2. Plans and reports shall be reviewed for consistency with applicable regulations and standards, and the approved rezoning site analysis (if required). If determined inadequate, they shall be returned within five working days.
3. Written review comments shall be provided to the applicant within twenty working days for the first submittal, and within five working days of each resubmittal, until approved and permits issued.
4. Prior to approval of the grading plan, the county engineer shall inspect the site to determine that the submittals are current and reflect existing conditions.

H. Preliminary grading:
1. Preliminary grading approval: A preliminary grading permit for clearing, brushing, grubbing, preliminary excavation or filling may be issued in special circumstances at the discretion of the county engineer, provided:
   a. The county engineer finds that the proposed grading is consistent with this chapter and code;
   b. The county engineer finds that the proposed grading will not have an adverse effect on the existing site and surrounding area;
   c. Preliminary grading shall occur in accordance with an approved preliminary grading plan, and shall occur no less than twenty feet from the boundaries of the future development envelope, exclusive of approved points-of-entry; and
   d. Preliminary grading assurances have been provided in accordance with subdivision 2 of this subsection.
2. Preliminary grading assurances:
   a. When approval has been granted for preliminary grading, grading assurances shall be posted in an amount not to exceed the approved preliminary grading cost estimate made by a civil engineer;
   b. The assurances shall be applied only to:
      1) Eliminate potential hazardous conditions; or
      2) Mitigate the effects of dust, drainage, erosion, visual scars or hazardous conditions, in accordance with the Grading Design Manual;
   c. The assurances shall be released by the county when the preliminary grading has been inspected and received the written approval of the county engineer. Final approval of a grading permit shall not require the release of the assurances in the event of preliminary grading noncompliance.

I. Grading permit issuance and expiration:
1. Issuance: Grading permits shall be issued by the county engineer no earlier than at the time of written staff approval of the tentative subdivision plat or development plan. A copy of the grading permit and approved grading plan shall be kept in an easily accessible location on the site.
2. Expiration: A grading permit shall be null and void if the authorized work has not been completed within one year of permit issuance.

J. Grading permit extension and reapplication:
1. Extensions: Upon written request by the permit holder, the county engineer may approve a single one-hundred-eighty-day time extension of a grading permit.
2. Reapplication: Reapplication for a grading permit may be made in accordance with this chapter. Assurances or additional conditions may be imposed by the county engineer on a permit, as a consequence of reapplication.

K.

Changes to grading permit:

1. Hazardous Conditions: If drainage problems, flood hazards or other hazards occur that were not considered at the time the permit was issued, the county engineer shall require that any substantial engineering modifications be submitted in a report and that the grading design be modified.
2. Nonhazardous conditions: If unanticipated nonhazardous conditions are encountered during grading and are beyond the scope of the grading permit, the permit holder may submit the necessary engineering modifications in a report to be reviewed and approved by the county engineer.

(Ord. 1990-61 § 1 (part), 1990; Ord. 1986-187 § 1 (part), 1986)

18.81.070 - Inspections and performance defaults.

A. General inspections:
   1. All grading which requires a permit shall be inspected by the county engineer in accordance with the grading permit:
      a. The inspection schedule shall be prepared in accordance with the Grading Design Manual. Fees shall be based on the inspection schedule and payable to the county treasurer in accordance with the fees schedule adopted by county ordinance.
      b. The permit holder shall provide notification twenty-four hours prior to an inspection request, or as specified on the grading permit;
      c. The county shall provide an inspector within two working days of the requested time.
   2. If the county engineer finds site conditions are not as stated in the approved grading permit conditions, the county engineer may order work authorized by the grading permit to stop until a revised grading sketch or plan has been approved.
   3. Whenever grading work requiring county inspection is concealed by additional work without first having been inspected, the county engineer may require, by written notice, that such work be:
      a. Exposed, for inspection by the county; or
      b. Certified by the project civil engineer as being in conformance with applicable regulations.

B. Inspection certification option:
   1. The owner may retain a civil engineer to:
      a. Perform the required grading construction inspections; and
      b. Certify, upon notification of completion, that grading has been performed in conformance with approved plans and permit conditions.
   2. The owner shall submit a letter of intent to invoke the certification option, which shall include a written agreement of certification responsibility from a civil engineer, with the grading permit application.
   3. Inspection fees are waived, with the exception of the final grading inspection fee.
   4. The civil engineer shall maintain project logs and records consistent with accepted engineering practice for a minimum of three years after project completion.
   5. The county engineer may periodically inspect the grading to determine that adequate control is being exercised by the civil engineer.
   6.

The county engineer shall conduct a final inspection and the owner shall be liable for any corrective action deemed necessary.

C. Final inspection of rough grade:
   1. All rough grading shall be completed in accordance with the grading permit prior to final rough grade inspection by the county engineer.
   2. The final inspection shall be conducted by the county engineer prior to issuance of a certificate of substantial grading conformance or release of grading assurances (if required). The permit holder shall provide a minimum of twenty-four hours' notice to the county engineer when any phase of rough grading is ready for final inspection.
   3. The county engineer may approve completed rough grading prior to completion of related work in cases of extreme hardship or where grading has been designed to be completed in phases, provided that no hazards exist and a performance bond has been posted to ensure completion of remaining grading work of that phase.
   4. The soil report and certification of sub-base requirements shall be submitted to the building official prior to any foundation inspections.

D. Final grading inspection:
   1. All required grading work shall be completed in accordance with the grading permit prior to final grading inspection by the county engineer and issuance of a certificate of final grading approval.
   2. Where the conditions of a grading permit include the establishment of vegetation or other final site grading work that extends beyond the expiration of the grading permit, the county engineer shall make a post-grading inspection within six months of permit expiration or as required by the grading permit.

E. Maintenance of revegetation: The maintenance of revegetated graded areas shall be in accordance with Section 18.73.080 (Landscaping, Buffering and Screening Standards).

(Ord. 1990-61 § 1 (part), 1990; Ord. 1986-187 § 1 (part), 1986)

18.81.080 - Enforcement and penalties.

A. Grading permit enforcement:
   1. The enforcement of this chapter and conditions of the grading permit shall be in accordance with this section and Chapter 18.95 (Compliance and Enforcement).
   2. When the county engineer determines a substantial noncompliance with the conditions of the grading permit, the county engineer shall issue a stop-work order and hold in abeyance, by written notice, the county review of other submittals related to the development project and the issuance of county permits for any aspect of the development project until remedial actions have received the written approval of the county engineer.

B. Stop-work orders:
   1. Whenever the county engineer determines that grading does not comply with this chapter or the grading permit conditions, or that the soil or conditions are not as stated on the permit, the county engineer may order the work stopped by written notice served on any person engaged in doing or causing such work to be done.
   2. Any such person shall immediately stop such work until authorized by the county engineer to proceed with the work.

C. Penalties:
   1.

Failure to obtain grading permit: Unless exempted by this chapter (refer to Section 18.81.020(D)), failure to obtain a grading permit prior to commencement of grading shall be a violation of this code. However, the county engineer may issue an exception permit if the county engineer finds that an emergency existed which made it impossible first to obtain a permit.

2. Violations: A violation shall result in issuance of a stop-work order and penalties in accordance with Section 18.95.040 (Compliance and Enforcement). Payment of a fine shall not relieve any person from complying with the requirements of this chapter.

D. Special Investigation and Special Investigation Fee; Work without a Permit.

1. Special Investigation. Whenever work for which a grading permit is required is done without a grading permit, a special investigation shall be made by the development services department before a grading permit may be issued to determine whether to allow such grading to remain without remediation and to confer retroactive approval. In the event the special investigation determines that remediation is required, it may be made a condition of the issuance of a grading permit and may be required even if the application for a grading permit is denied.

2. Special Investigation Fee. The development services department shall assess a special investigation fee in accordance with the development services fee schedule, in addition to the permit fee, whether or not a permit is then or subsequently issued. Payment of the special investigation fee is required prior to the issuance of a grading permit or any other permit for the property on which the special investigation fee is assessed. The payment of the special investigation fee shall not exempt the property on which the special investigation fee is assessed from compliance with all other provisions of this code nor from any penalty prescribed by law.

(Ord. 2011-2 § 20 (part), 2011; Ord. 2001-167 1, 2001; Ord. 1986-187 § 1 (part), 1986)

18.81.090 - Administrative modification.

A. Quantifiable requirements of Section 18.81.020(B) Type 1 (grading sketch) permit applicability, Section 18.81.040 general grading performance standards, and Section 005 grading mitigation on the Grading Design Manual, may be modified up to a maximum of twenty percent by the county engineer when it is demonstrated that an unusual site or use condition exists and when such adjustment will not result in a danger to persons or property.

B. In determining whether to grant the adjustment, the county engineer shall follow the board of adjustment standards for granting variances set forth in Section 18.93.030(B), and enumerated below:

1. The strict application of the provision would work an unnecessary hardship;
2. The unnecessary hardship arises from a physical condition that is unusual or peculiar to the property and is not generally caused to other properties in the zone;
3. The unnecessary hardship does not arise from a condition created by an action of the owner of the property;
4. The variance is the minimum necessary to afford relief;
5. The variance does not allow a use which is not permitted in the zone by the code;
6. The variance is not granted solely to increase economic return from the property;
7. The variance will not cause injury to or adversely affect the rights of surrounding property owners and residents;
8. The variance is in harmony with the general intent and purposes of the code and the provision from which the variance is requested;

9. The variance does not violate state law or other provisions of Pima County ordinances;
10. No condition attached to the variance by the board is personal to the appellant.

(Ord. 1990-61 § 1 (part), 1990)

18.81.100 - Waivers and interpretation review.

A. Waivers:
1. Scope: A waiver from a provision of this chapter may be granted by the technical review committee (refer to Section 18.99.040, Review Committees) when the strict application of the provision would require work by the permit holder detrimental to the purposes of this chapter and cause an unnecessary hardship which substantially limits the preservation and enjoyment of property rights.
2. Standards: A waiver shall not be granted unless:
   a. The hardship is not generally caused to other properties subject to the provision;
   b. The waiver is the minimum necessary to afford relief;
   c. The waiver will not be materially detrimental to the rights of owners and residents of other affected properties; and
   d. The waiver is in harmony with the intent and purposes of this code and the provision of this chapter from which the waiver is requested.
3. Conditions: Conditions may be imposed on a waiver that will:
   a. Secure the intent and purposes of this code and the provision of this chapter from which the waiver is granted; and
   b. Provide adequately for the protection of surrounding property owners and residents.
4. Application: The request for waiver shall be made on a form provided by the planning and development service department and shall be heard within sixty days. Hearing fees shall be required.
5. Review and notice: The committee shall hold a hearing on the waiver request and, within five working days, notice of the decision shall be mailed to all property owners within three hundred feet of the grading site. Failure to provide notice shall not invalidate an action of the committee.
6. Appeal: A decision of the committee may be appealed within fifteen days of the decision to the board of adjustment in accordance with Chapter 18.93

B. Interpretation review:
1. Scope: Upon request by an affected person who believes there has been a misinterpretation, the technical review committee shall review an interpretation of a provision of this chapter made by a county official.
2. The request for review shall cite:
   a. The disputed interpretation made by the county official; and
   b. The words alleged to have been misinterpreted.
3. Application: The request shall be made on a form provided by the planning and development services department and shall be heard within sixty days. Hearing fees shall be required.
4. Review and notice: The committee shall hold a hearing on the waiver request and, within five working days, notice of the decision shall be mailed to all property owners

within three hundred feet of the grading site. Failure to provide notice shall not invalidate an action of the committee.

5. Appeal: A decision of the committee may be appealed within fifteen days of the decision to the board of adjustment in accordance with Chapter 18.93

C. Appeal to superior court: Appeal from a decision of the board of adjustment may be made to the superior court by the owner or affected persons.

(Ord. 1990-61 § 1 (part), 1990; Ord. 1986-187 § 1 (part), 1986)

18.81.110 - Illustrations.

See Illustrations 18.81-1, 18.81-2, and 18.81-3.

(Ord. 1990-61 § 1 (part), 1990; Ord. 1986-187 § 1 (part), 1986)

Illustration 18.81-1
BUILDING HEIGHT CONTOUR LINE

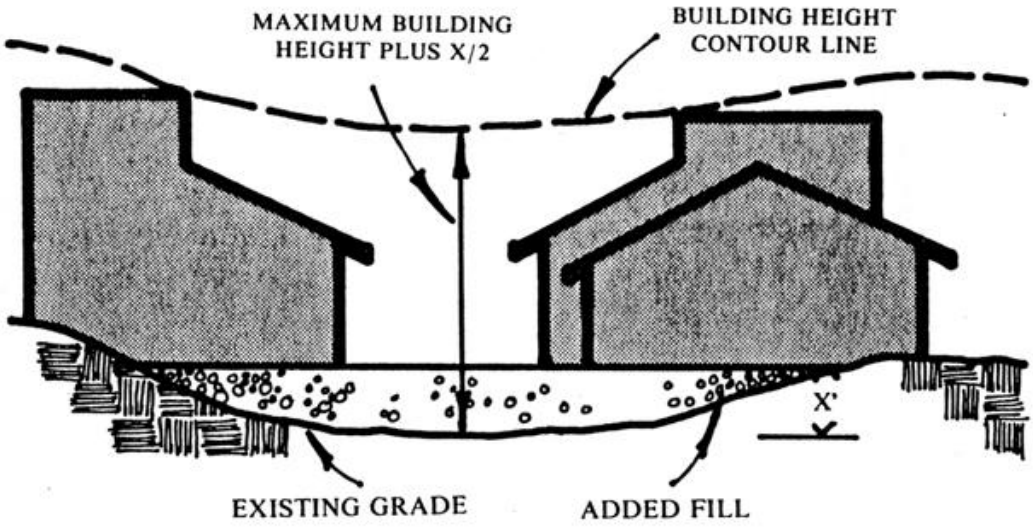

Illustration 18.81-2
SLOPE DETERMINATION

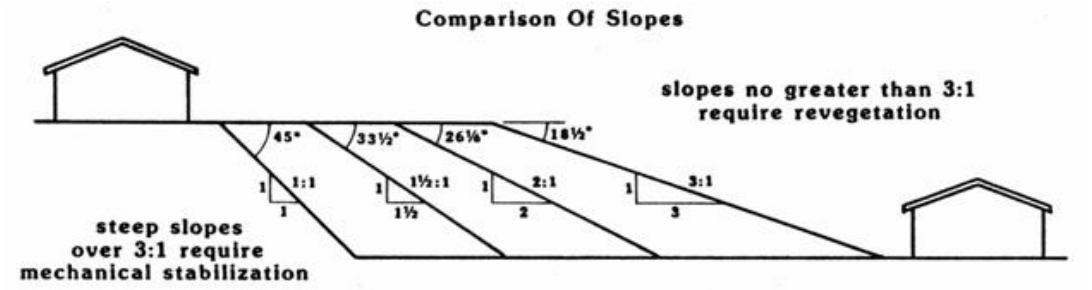

Illustration 18.81-3
SETBACKS

Setbacks

alta boundary line

top of
alope

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and 20' maL

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bouDCiary line toe of
1 slope

H/5 but 2'miD.
and 10' mas.

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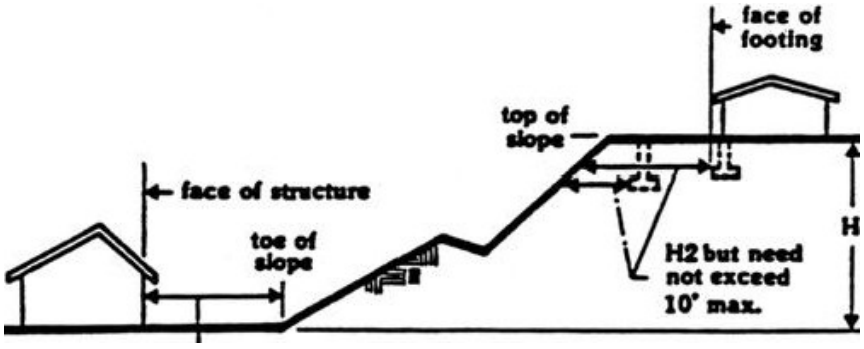
Setbacks



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PIMA COUNTY, ARIZONA

BOARD OF SUPERVISORS POLICY

Subject: PIKA C01JII'TY BIIVIROIOIBIITAL POLJ:CY (PCBP)	Policy Number	Page
	F 50.1	1

PURPOSE: To establish Pima County policy regarding environmental exposure to which the County is subjected. This policy shall emphasize Pima County's commitment to environmental protection and to the mitigation of any negative effects of Pima county's operations on the environment. This will be done to the extent possible within budgetary constraints.

BACKGROUJID: Pima County recognizes the ramifications and impact of environmental damage on its operations. This impact reflects on the quality of life in Pima County and on the increasing costs of environmental risk to Pima County. The basic premise of this policy shall be to:

When ever possible, preclude, minimize or remediate the effects of environmental damage on Pima County properties and operations.

Give priority to a safe, clean environment.

Emphasize compliance with all federal and state regulations.

Develop administrative procedures to assist all county departments in achieving the county's environmental goals and objectives.

POLICY: It shall be the policy of the Board of Supervisors of Pima County to ensure that:

1. All departments and units of Pima county Government shall comply with applicable environmental laws, statutes, regulations, rules and guide lines promulgated by Federal, state and Local law in a consistent, uniform and timely basis.

2. Pima County shall endeavor to eliminate or minimize its risk of loss from environmental damages by:

   Ensuring that prior assessments be conducted of properties being acquired to preclude acquisition of environmentally damaged properties or to minimize the adverse financial effects of such acquisition and comply with due diligence requirements.

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PilA COUII'Y BNVIROIOIBIITAL POLl:CY (PCBP)	F 50.1	2

conducting environmental audits of owned properties as appropriate to determine the extent of environmental damages if any and to remediate properties where environmental damages are found.

Provide environmental training to Pima County employees as necessary.

Pursue recovery of remediation costs from other parties responsible for environmental damages whenever possible.

Actively pursue federal and. state assistance in remediation projects and whenever it is in the best interests of the County to have such projects assumed by the federal or state authorities under applicable statutes.

J.a. Pima county departments involved in the acquisition of properties shall establish pre acquisition environmental assessment programs to ensure protection under "due diligence" standards.

3.b. Departments subject to environmental exposure shall conduct environmental audits to determine the nature of these exposures. Where environmental damage is discovered, remediation activities shall be prioritized based on severity of exposure and budgetary considerations.

4. Risk Management and the Pima county Attorney Civil Division Environmental Unit shall assist departments having exposures to environmental issues·and problems or who are subject to environmental regulations. such departments shall provide for the position of environmental officer, either separately or in conjunction with their safety officer position.

s.a. All Pima county departments and units are charged with the duty to become and remain knowledgeable regarding Pima County's Environmental Policy and, when needed seek assistance with environmental questions or problems. Accordingly, the Pima county Manager shall establish, by appointment, a Special Environmental Committee to review environmental cases, assist in environmental decision making and serve as environmental consultants to Pima County, the Board of Supervisors and departments. Upon request, the Special Environmental Committee shall render such services to any unit of Pima County Government requiring assistance. Pima County Risk Management

Subject	Policy Number	Page
PIMA COUNTY ENVIRONMENTAL POLICY (PCEP)	F 50.1	3

Department and the Environmental unit of Pima county Attorney's Office shall assist the SEC and Pima County's departments in understanding and implementing the Environmental Policy and in complying with all relevant and applicable environmental laws, state or federal.

S.b. Each department shall annually review its facilities, operations and activities with respect to environmental risk, and provide a written inventory of said risk as well as a written operating plan designed to manage and minimize said environmental risk in accordance with this policy. Further, the environmental risk inventory and operating plan shall be submitted to and approved by the Risk Management Department.

SUIISB'l' PROVI:SIOII: This policy statement shall be reviewed by June 30, 1994.

PIMA COUNTY REGIONAL FLOOD CONTROL DISTRICT
TECHNICAL POLICY

POLICY NO.: Technical Policy, TECH-026 **EFFECTIVE DATE:** January 27,2010

POLICY NAME: Interim Regulated Riparian Habitat Mitigation Standards and Implementation Guidelines- Supplement to Title 16- Chapter 16.30 of the Watercourse and Riparian Habitat Protection and Mitigation Requirements, Ordinance No. 2005-FC2, January 2010 Draft.

PURPOSE: To allow use of the January 2010 Draft Guidelines on an interim basis (Mitigation Guidelines for disturbance of riparian habitat regulated under Section 16.30 of the Floodplain and Erosion Hazard Management Ordinance No. 2005-FC2 (Ordinance).)

BACKGROUND: Section 16.30, *Watercourse and Riparian Habitat Protection and Mitigation Requirements,* of the Ordinance requires mitigation for unavoidable disturbances to regulated riparian habitat (RRH). RRH areas are defined by the *Riparian Classification Maps* adopted by the Pima County Board of Supervisors (Board) effective October 21, 2005. *The Regulated Riparian Habitat Mitigation Standards and Implementation Guidelines* (Guidelines) were created to address revisions to the Ordinance. The Guidelines provide detailed onsite mitigation requirements when greater than 1/3 acre of RRH is altered due to activities that reduce vegetation volume or diminish the value of the habitat on a project site or property. Disturbances include (but are not limited to):

- Mass or partial grading
- Clearing/thinning of vegetation
- Planting of non-native or noxious plant species within RRH
- Other modifications that may reduce vegetation volume or diminish the value of the RRH (e.g., turf areas, livestock use and play areas within RRH, fencing, roads, structures, etc.)

Section 16.30 applies to all property within unincorporated Pima County that contains RRH as shown on the Riparian Classification Maps, and applies to all building, right-of-way, and grading permits, and land use development permits associated with plats and development plans governed by Pima County. The Ordinance also applies to all Pima County public works projects or any activity occurring on Pima County or Flood Control District land or right-of-way.

POLICY:

The January 2010 draft onsite Guidelines were developed to incorporate changes adopted under the Ordinance. Revised Guidelines are being developed by staff and a group of stakeholders; the *Mitigation Working Group.* In a parallel process to the development of onsite guidelines, offsite mitigation guidelines are being developed. Once completed, both will be presented to the Pima County Board of Supervisors for adoption. The draft onsite Guidelines are to be used by applicants in the interim period until onsite and offsite Guidelines are presented to the Board of Supervisors for adoption.

Article 7 Management of Used Oil

49-801. Definitions

In addition to the definitions in 40 Code of Federal Regulations, part 279, the following definitions apply to this article:

1. "Off-specification used oil" means used oil which exceeds any of the allowable levels in 40 Code of Federal Regulations section 279.11.
2. "On-specification used oil" means used oil that is not off-specification used oil.
3. "Used oil" includes oil that has been contaminated as a result of handling, transportation or storage.

49-803. Prohibited practices

A. Used oil shall not be used or disposed of by any of the following methods:

1. Discharge into sewers or waters of the state as defined in section 49-201 except pursuant to a permit issued by appropriate regulatory authorities.
2. Incineration except at a facility authorized to incinerate hazardous waste under section 49-922 or the federal act. Burning for energy recovery is not considered incineration for purposes of this section, unless the director determines pursuant to rule that the purpose of the burning is for destruction of listed or characteristic hazardous waste rather than energy recovery.
3. Disposal on land unless the used oil is disposed of in a landfill that is subject to 40 Code of Federal Regulations part 257 or 258 and that has an approved solid waste facility plan. This prohibition does not apply to used oil that is used as an ingredient in an explosive material.
4. Dispersal as a dust suppressant or contact herbicide.

B. For the purposes of subsection A, paragraph 3 of this section, normal minimal leakage from properly maintained vehicles and equipment shall not be considered disposal on land.

49-811. Violation; civil penalty

A. Except as otherwise provided, a person who violates any provision of this article or a rule or order adopted or issued pursuant to this article is subject to a civil penalty of not more than ten thousand dollars per day for each violation.

B. The attorney general, at the request of the director, shall file an action in superior court to recover civil penalties provided by this section. This subsection shall not be construed to reduce the authority of the attorney general under any other provision of law.

49-812. Compliance orders; injunctive relief

A. If the director has reasonable cause to believe that a person is violating a provision of this article or a rule adopted pursuant to this article, the director may serve on the person an order requiring compliance with that provision or rule. The order shall state with reasonable particularity the nature of the violation and shall specify either immediate compliance or a time period for compliance which the director determines is reasonable, taking into account the

seriousness of the violation and any good faith efforts to comply with applicable legal requirements. The alleged violator has thirty days from the date of issuance of the order within which to request a hearing pursuant to title 41, chapter 6, article 10.

B. If the director has reasonable cause to believe that an order issued pursuant to this section is being violated or that a person is engaging in an act or practice which constitutes a violation for which he is authorized to issue an order pursuant to this section, the attorney general at the request of the director may apply to the superior court in the county in which the violation is occurring or in which the department maintains an office for a temporary restraining order, preliminary injunction or permanent injunction. Such action has precedence over all other matters pending in the court.

C. If the director has reasonable cause to believe that a person is engaging in an act or practice which violates any provision of section 49-811, the attorney general at the request of the director may apply to the superior court for a temporary restraining order, preliminary injunction or permanent injunction. Such action has precedence over all other matters pending in the court.

D. No provision of this section shall be construed to reduce the authority of the attorney general under any other provision of law.

E. The court, in issuing any final order in any civil action brought under this section may award costs of litigation, including reasonable attorney and expert witness fees, to any substantially prevailing party if the court determines such an award is appropriate.

Title 40: Protection of Environment
PART 279—STANDARDS FOR THE MANAGEMENT OF USED OIL
Subpart A—Definitions

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§279.1 Definitions.

Terms that are defined in §§260.10, 261.1, and 280.12 of this chapter have the same meanings when used in this part.

Aboveground tank means a tank used to store or process used oil that is not an underground storage tank as defined in §280.12 of this chapter.

Container means any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

Do-it-yourselfer used oil collection center means any site or facility that accepts/aggregates and stores used oil collected only from household do-it-yourselfers.

Existing tank means a tank that is used for the storage or processing of used oil and that is in operation, or for which installation has commenced on or prior to the effective date of the authorized used oil program for the State in which the tank is located. Installation will be considered to have commenced if the owner or operator has obtained all federal, state, and local approvals or permits necessary to begin installation of the tank and if either (1) A continuous on-site installation program has begun, or

(2) The owner or operator has entered into contractual obligations—which cannot be canceled or modified without substantial loss—for installation of the tank to be completed within a reasonable time.

Household "do-it-yourselfer" used oil means oil that is derived from households, such as used oil generated by individuals who generate used oil through the maintenance of their personal vehicles.

Household "do-it-yourselfer" used oil generator means an individual who generates household "do-it-yourselfer" used oil.

New tank means a tank that will be used to store or process used oil and for which installation has commenced after the effective date of the authorized used oil program for the State in which the tank is located.

Petroleum refining facility means an establishment primarily engaged in producing gasoline, kerosene, distillate fuel oils, residual fuel oils, and lubricants, through fractionation, straight distillation of crude oil, redistillation of unfinished petroleum derivatives, cracking or other processes (i.e., facilities classified as SIC 2911).

Processing means chemical or physical operations designed to produce from used oil, or to make used oil more amenable for production of, fuel oils, lubricants, or other used oil-derived product. Processing includes, but is not limited to: blending used oil with virgin

petroleum products, blending used oils to meet the fuel specification, filtration, simple distillation, chemical or physical separation and re-refining.

Re-refining distillation bottoms means the heavy fraction produced by vacuum distillation of filtered and dehydrated used oil. The composition of still bottoms varies with column operation and feedstock.

Tank means any stationary device, designed to contain an accumulation of used oil which is constructed primarily of non-earthen materials, (e.g., wood, concrete, steel, plastic) which provides structural support.

Used oil means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is contaminated by physical or chemical impurities.

Used oil aggregation point means any site or facility that accepts, aggregates, and/or stores used oil collected only from other used oil generation sites owned or operated by the owner or operator of the aggregation point, from which used oil is transported to the aggregation point in shipments of no more than 55 gallons. Used oil aggregation points may also accept used oil from household do-it-yourselfers.

Used oil burner means a facility where used oil not meeting the specification requirements in §279.11 is burned for energy recovery in devices identified in §279.61(a).

Used oil collection center means any site or facility that is registered/licensed/permitted/recognized by a state/county/municipal government to manage used oil and accepts/aggregates and stores used oil collected from used oil generators regulated under subpart C of this part who bring used oil to the collection center in shipments of no more than 55 gallons under the provisions of §279.24. Used oil collection centers may also accept used oil from household do-it-yourselfers.

Used oil fuel marketer means any person who conducts either of the following activities:

(1) Directs a shipment of off-specification used oil from their facility to a used oil burner; or

(2) First claims that used oil that is to be burned for energy recovery meets the used oil fuel specifications set forth in §279.11 of this part.

Used oil generator means any person, by site, whose act or process produces used oil or whose act first causes used oil to become subject to regulation.

Used oil processor/re-refiner means a facility that processes used oil.

Used oil transfer facility means any transportation related facility including loading docks, parking areas, storage areas and other areas where shipments of used oil are held for more than 24 hours and not longer than 35 days during the normal course of transportation or prior to an activity performed pursuant to §279.20(b)(2). Transfer facilities that store used oil for more than 35 days are subject to regulation under subpart F of this part.

Used oil transporter means any person who transports used oil, any person who collects used oil from more than one generator and transports the collected oil, and owners and operators of used oil transfer facilities. Used oil transporters may consolidate or aggregate loads of used oil for purposes of transportation but, with the following exception, may not process used oil. Transporters may conduct incidental processing operations that occur in the normal course of used oil transportation (e.g., settling and water separation), but that are not designed to produce (or make more amenable for production of) used oil derived products or used oil fuel.

[57 FR 41612, Sept. 10, 1992, as amended at 58 FR 26425, May 3, 1993; 59 FR 10559, Mar. 4, 1994; 71 FR 40280, July 14, 2006]

PDEQ ID	RFCD ID	Location	Structure	Area acres	Class	Inspection Date				
						11/12	12/13	13/14	14/15	15/16
1	1	Mission Rd/Holladay St., W. side of road	drainage to channel	Unk	Major		04/11/13			
2	2	6262 N Swan Rd (@ Skyline Plaza)	42" CMP	Unk	Major		04/16/13			
3	3	Catchbasin @ Kleindale/Richey to Dodge, N. to Rillito	42" RCP	Unk	Major		04/16/13			
4	4	Catchbasin @ Kleindale/Richey to Dodge, N. to Rillito	72" RCP	Unk	Unk		04/16/13			
5	5	River Terrace Dr/Rillito Cr, N side, ¼ mi W of Flowing Wells	60" CMP	Unk	Major	03/07/12	04/15/13			
6	6	Harmonia/Ruthrauff, W. to Sullinger, N. Rillito	8' x 5' RCBC	12.34	Major	03/07/12	04/15/13			
7A	7	Flowing Wells/Rillito Cr, S. of river, 1/8 miles W. of bridge	30" CMP	Unk	Minor		04/15/13			
7B	8	Flowing Wells/Rillito Cr, S. of river, 1/8 miles W. of bridge	30" RCP	Unk	Minor		04/15/13			
7C	9	Flowing Wells/Rillito Cr, S. of river, W. of bridge	12" RCP	Unk	Minor		04/15/13			
7D	10	Flowing Wells/Rillito Cr, S. of river, E. of bridge	54" RCP	Unk	Major	03/07/12	04/15/13			
7E	11	Flowing Wells/Rillito Cr, N. of river, E. of bridge	42" RCP	Unk	Major	03/07/12	04/15/13			
7F	12	Flowing Wells/Rillito Cr, N. of river, 1/4 mile E. of bridge	18" RCP	Unk	Minor		04/15/13			
7G	13	Flowing Wells/Rillito Cr, N. of river, 1/4 mile E. of bridge	18" RCP	Unk	Minor		04/15/13			
8A	14	river, W. of bridge. E. 48" pipe closest to bridge.	48" RCP	Unk	Major	03/07/12	04/15/13			
8B	15	river, W. of bridge. E. 66" pipe closest to bridge.	66" RCP	Unk	Major	03/07/12	04/15/13			

PDEQ ID	RFCD ID	Location	Structure	Area acres	Class	Inspection Date				
						11/12	12/13	13/14	14/15	15/16
8C	16	La Cholla Blvd/Rillito Cr, S. of river, W. of bridge. W. 66" pipe.	66" RCP	unk	Major		04/15/13			
8D	17	La Cholla Blvd/Rillito Cr, S. of river, W. of bridge. 48"	48" RCP	Unk	Major		04/15/13			
9	18	Skyline E. of Campbell at Campbell W.	24" & 36" RCP	Unk	Minor		04/16/13			
10	19	Skyline Dr/Sunrise Dr.,streets merge southside of Sunrise	24" RCP	Unk	Minor		04/16/13			
11	20	Sunrise Dr./just E. of Campo Abierto	24" RCP	Unk	Minor		04/16/13			
12	21	Coachlight Ln/Swan, E & W culverts under Swan	18" RCP	Unk	Minor		04/16/13			
13	22	Sunrise, W side of Valley View Rd.	66" RCP	7.32	Major	03/13/12	04/16/13			
14	23	Sol/Sunrise, end at W. side of Valley View W. immediately S.	54" RCP	41.55	Major	03/13/12	04/16/13			
15	24	I-10 frontage btw Verbena/Zinnia, W side of Hwy	drainage-way, 2 24"	Unk	Unk		04/15/13			
16	25	Contractors Wy at end of Longfellow	drainage to channel	Unk	Unk		04/11/13			
17	26	side, N. to alley btw Columbia&District	2 RCBCS	52.21	Major		04/11/13			
18	27	C. Esplendora/C. Barril	Curbcut	2.83	Minor		04/16/13			
19	28	Kain to Santa Cruz R., through pipe under Ruthrauff	78" RCP	Unk	Major		04/15/13			
20	29	La Linda Rama/ Swan to just N. of River Rd/Swan	60" RCP	Unk	Major		04/16/13			
21	30	Verde/Sanbino Canyon Rd, outfall W of Tanque Verde	72" RCP	Unk	Major	08/18/11	04/16/13			

PDEQ ID	RFCD ID	Location	Structure	Area acres	Class	Inspection Date				
						11/12	12/13	13/14	14/15	15/16
22A	31	River/Swan, NE corner	24" RCP	Unk	Minor		04/16/13			
22B	32	River/Swan, NE corner, S of 22A	18" RCP	Unk	Minor		04/16/13			
24	33	Wheatridge Dr. and La Canada S to the Rillito	42" RCP	Unk	Major		04/11/13			
25	34	Alvernon/37th to Tucson Diversion Channel	2 48" RCPS	Unk	Major		04/15/13			
26A	35	Oracle/Orange Gr, SE corner	36" RCP	Unk	Minor		04/11/13			
26B	36	Ajo Wy/Randolph under bridge on southside	34" x 53" RCP	Unk	Major		04/11/13			
26C	37	Ajo Wy/Randolph under bridge on southside	42" RCP	Unk	Major		04/11/13			
27	38	Ajo Wy/Randolph under bridge on southside	30" RCP	Unk	Major		04/11/13			
28	39	Ajo Wy/Palo Verde Rd, inlet at SE corner	48" RCP	Unk	Major		04/16/13			
		Total				9	39			

Appendix D. County Facility Inventory

No	Type	Facility Name	Physical Address	City	Latitude	Longitude	Contact Name	Sector	Potential Contaminant	Level of Risk	Activity(s) Generating Concern
1	Airport	Eric Marcus Municipal Airport	77 W. Mead Road	Ajo	32.454527	112.855567	Gloria Browne	S	Fuel	Low	Store/dispense fuel
2	FLEET	Downtown Refueling Station	190 W. Congress	Tucson	32.22201	110.973737	Gilbert Gomez		Unleaded	Medium	Store/dispense fuel
3	FLEET	Green Valley Refueling Station	601 N. La Cañada	Green Valley	31.880739	110.996264	Gilbert Gomez		Unleaded	Medium	Store/dispense fuel
4	FLEET	Houghton Road Yard	4700 S. Houghton Road	Tucson	32.165816	110.774979	Gloria Browne	P	Unleaded, Diesel	Low	Store/dispense fuel
5	FLEET	Marana Refueling Station	12600 Sanders Road	Marana	32.435676	111.233205	Gilbert Gomez		Unleaded, Diesel	Medium	Store/dispense fuel
6	FLEET	Mission Road Facility	1313 S. Mission Road	Tucson	32.202192	110.995093	Gloria Browne	P	Unleaded, Diesel, Antifreeze, MgCl, Traffic marking paint (white, yellow)	Low	Store/dispense fuel, automotive fluids, paint
7	FLEET	Northside Refueling Station	4701 W. Ina Rod	Tucson	32.334404	110.892206	Gilbert Gomez		Unleaded, Diesel	Medium	Store/dispense fuel
8	FLEET	Richey Road Fueling Station	3390 N. Richey Rd	Tucson	32.268377	110.915481	Gilbert Gomez		Unleaded, Diesel	Medium	Store/dispense fuel
9	FLEET	Southside Refueling Station	2545 E. Ajo Way	Tucson	32.18208	110.93314	Gilbert Gomez		Unleaded	Medium	Store/dispense fuel
10	Office+	NRPR Home Office	3500 W. River Road	Tucson	32.314369	111.039785	Kelly Bullington		Herbicides, pesticides, fertilizer, oil	Low	Store/dispense fertilizers, pesticides, herbicides
11	Landfill	Ajo Landfill	200 N. Ajo Well Road No. 1	Ajo	322338.083	1125049.34	Dave Eaker	L	Solid Waste	Low	Storage of solid waste
12	Landfill	Catalina Landfill	14425 N. Oracle Rd.		32.471271	110.925782	Dave Eaker		Solid Waste	Low	Storage of solid waste
13	Landfill	El Camino Del Cerro Landfill	3250 W. El Camino del Cerro	Tucson	32.296267	111.037132	Dave Eaker		Solid Waste	Low	Storage of solid waste
14	Landfill	Ina Rd Construction Debris Landfill	5301 W. Ina Road	Tucson	32.33703	111.07642	Dave Eaker		Solid Waste	Low	Storage of solid waste
15	Landfill	Old Nogales Landfill	9325 S. Nogales Highway	Tucson	32.082493	110.957433	Dave Eaker		Solid Waste	Low	Storage of solid waste
16	Landfill	Rita Road Landfill	10001 S. Rita Road	Tucson	32.071619	110.80541	Sheriff's Dept.		Solid Waste	Low	Storage of solid waste
17	Landfill	Sahuarita Landfill	16605 S. La Cañada Drive	Sahuarita	31.948785	110.992924	Dave Eaker		Solid Waste	Low	Storage of solid waste
18	Landfill	Tangerine Landfill	10220 W. Tangerine Road	Marana	32.422601	111.186921	Dave Eaker	L	Solid Waste	Low	Storage of solid waste
19	Landfill	29th Street Landfilll	Silverlake Rd/Santa Cruz Ln	Tucson	32.200771	110.989319	Dave Eaker		Solid Waste	Low	Storage of solid waste
20	RECH	High Plains Effluent Recharge Project	Tangerine Rd. & Sanders Rd.	Marana	32.442435	111.2387	Frank Postillion		CAP, effluent	Low	Store/dispense pesticides, herbicides. Discharge effluent.
21	RECH	Lower Santa Cruz Constructed Recharge Project	Northeast of Silverbell Rd and Sanders Rd	Marana	322508.926	1111221.17	Frank Postillion		CAP		Store/dispense pesticides, herbicides.
22	RECH	Lower Santa Cruz Managed Recharge Project	Santa Cruz River from Tres Rios WRF outfall to Trico Road	Marana	32.399803	111.138833	Frank Postillion		effluent	Low	Discharge effluent
23	REST	Agua Caliente Park	12325 E. Roger Road	Tucson	32.281905	110.73265	Amy Loughner		Herbicides, pesticides, fertilizer, oil	Low	Store/dispense pesticides, herbicides.

FLEET Fleet services
Office+ Buildings and vehicle/material storage
RECH Recharge project for effluent or CAP water
REST Restoration of land to natural condtions
WRF Water Reclamation Facility

Appendix D. County Facility Inventory

No	Type	Facility Name	Physical Address	City	Latitude	Longitude	Contact Name	Sector	Potential Contaminant	Level of Risk	Activity(s) Generating Concern
24	REST	Arroyo Chico Multi-Use Project, Phase 2B	Arroyo Chico betwween Park Ave and Cherry Ave.	Tucson	32.218843	110.953013	Jennifer Becker		Herbicides, pesticides, fertilizer, oil	Low	Store/dispense pesticides, herbicides. Discharge effluent.
25	REST	Ed Pastor KERP	Ajo and Country Club	Tucson	32.18208	110.93314	Jennifer Becker		herbicides, pesticides, fertilizer, oil, reclaimed water	Low	Store/dispense pesticides, herbicides. Discharge effluent.
26	REST	Rillito R/Swan Wetlands Ecosystem Restoration	Craycroft Rd to Columbus Blvd along the Rillito River	Tucson	32.270146	110.888812	Andy Wigg		Herbicides, pesticides, fertilizers	Low	Store/dispense pesticides, herbicides.
27	REST	Santa Cruz River - West Branch Wetlands	I-19 & I-10 Intersect along the Santa Cruz River	Tucson	32.194304	110.988305	Jennifer Becker		Herbicides, pesticides, fertilizers	Low	Store/dispesnse pesticides, herbicides
28	WRF	Arivaca Junction WRF	28601 S. Nogales Hwy	Amado	31.730785	111.053943	Jeff Prevatt	-	Effluent	Low	Store/use chemicals. Discharge effluent
29	WRF	Arizona Sonora Desert Museum WWTF	2021 N. Kinney Rd	Tucson	32.247383	111.160705	Stéphane Poulin	T	Effluent, animal waste	Medium	Store/use chemicals. Discharge effluent
30	WRF	Avra Valley WRF	10000 W Snyder Hill Rd	Tucson	32.0954	111.1056	Frank Gall	T	Effluent	Low	Store/use chemicals. Discharge effluent
31	Office+	Conveyance Division, RWRD	3355 N. Dodge Blvd.	Tucson	32.267801	110.914648	Rita Mercer		Raw sewage	Low	Store/use chemicals. Discharge effluent
32	WRF	Corona De Tucson WRF	1100 W Sahuarita Rd	Corona De Tucson	31.973943	110.801275	Frank Gall	T	Effluent	Low	Store/use chemicals. Discharge effluent
33	WRF	Green Valley WRF	2201 N Nogales Hwy	Green Valley	31.902444	110.970486	Frank Gall	T	Effluent	Low	Store/use chemicals. Discharge effluent
34	WRF	Ina Rd (Tres Rios) WRF	7101 N. Casa Grande Hwy	Marana	32.336329	111.068122	Jeff Prevatt	T	Effluent, $NaHSO_3$ 40%, propane, NAClO 12.5%	Low	Store/use chemicals. Discharge effluent
35	WRF	Mt. Lemmon WRF	12633 N. Sabino Canyon	Mount Lemmon	32.439	110.760029	Jeff Prevatt	-	Effluent	Low	Store/use chemicals. Discharge effluent
36	WRF	Pima County Fairgrounds WRF	11300 S. Houghton Rd.	Tucson	32.041622	110.779605	Jeff Prevatt	-	Effluent, animal waste	Low	Store/use chemicals. Discharge effluent
37	WRF	Randolph Park WRF	1100 S. Alvernon Way	Tucson	32.213038	110.916741	Jeff Prevatt	T	Effluent	Low	Store/use chemicals. Discharge effluent
38	WRF	Roger Road WRF-Agua Nueve (Oct' 2013)	2600 W. Sweetwater Drive	Tucson	32.282852	111.02666	Jeff Prevatt	T	Effluent, NaHSO3 40%, propane, NAClO 12.5%	Low	Store/use chemicals. Discharge effluent
39	REST	Paseo de las Iglesias Phase I	SCR - Ajo Way to Silver Lake Road	Tucson	32.189100	110.988375	Jennifer Becker		Sediment	Low	Store/dispense pesticides, herbicides, fertilizers.

FLEET Fleet services
Office+ Buildings and vehicle/material storage
RECH Recharge project for effluent or CAP water
REST Restoration of land to natural condtions
WRF Water Reclamation Facility

Appendix E. MS4 Map Inventory

Pima County's Geographic Information System (GIS) maintains geographic data in ArcGIS and AutoDesk products and is called MapGuide. The area covered is Pima County within Universal Transverse Mercator (UTM) Zone 12. The coordinate system is based on the State Plane Project North American Datum of 1983 (NAD83) with High Accuracy Reference Network (HARN). The layers of information within GIS are maintained in the Stormwater theme of MapGuide. Many layers are included in this theme, including the following layers identified in the permit:

- Points
  - Outfalls (Major, minor, unknown)
  - Storm drain inlets (catch basins, scuppers, stormdrains, culverts, stormdrain manholes)
- Lines
  - Stormdrain pipes
  - Streams (interminttent, perennial)
  - Streets (with or without names)
  - Topographic lines to determine the direction of flow
  - Washes with designation of flow rates
    - Unknown
    - 100 – 500 Cubic feet per second (CFS)
    - 500 – 1,000 CFS
    - 1,000 – 2,000 CFS
    - 2,000 – 5,000 CFS
    - 5,000 – 10,000 CFS
    - Greater than 10,000 CFS
- Polygons
  - Detention and retention basins (known locations for private and public basins)
  - Stormwater Permit Areas for large and small MS4s within Pima County
    - Cities: South Tucson, Tucson
    - Counties: Pima County
    - Special categories: University of Arizona, Veterans Affairs Hospital, Davis-Monthan Air Force Base
    - Towns: Marana, Oro Valley
  - Zoning within Pima County (Developed land uses – major categories shown)
    - CB Business
    - CI Industrial
    - CMH Mobile Home
    - CPI Campus Industrial Park
    - CR Single Residence
    - GC Golf Course
    - GR Rural Residence
    - IR Institutional Reserve
    - ML Mount Lemon
    - MU Multiple Use
    - RH Rural Homestead

        - RVC Rural Village Center
        - SH Suburban Homestead
        - SP Specific Plan
        - SR Suburban Ranch
        - TH Trailer Homesite
        - TR Transitional
    - SWREGAP Provisional Digital Land Cover (Developed & undeveloped land use)
        - Agriculture
        - Apacherian-Chihuahuan Mesquite Upland Scrub Apacherian-Chihuahuan Piedmont Semi-Desert Grassland and Steppe Barren Lands, Non-specific
        - Chihuahuan Creosotebush. Mixed Desert and Thorn Scrub
        - Chihuahuan Mixed Salt Desert Scrub
        - Chihuahuan Sandy Plains Semi-Desert Grassland Chihuahuan Stabilized Coppice Dune and Sand Flat Scrub Chihuahuan Succulent Desert Scrub
        - Developed. Medium - High Intensity
        - Developed. Open Space - Low Intensity
        - Invasive Southwest Riparian Woodland and Shrubland
        - Madrean Encinal
        - Madrean Juniper Savanna
        - Madrean Pine-Oak Forest and Woodland
        - Madrean Pinyon Juniper Woodland
        - Madrean Upper Montane Coniler-Oak Forest and Woodland
        - Mogollon Chaparral
        - North American Arid West Emergent Marsh
        - North American Warm Desert Bedrock Clilland Outcrop
        - North American Warm Desert Lower Montane Riparian Woodland and Shrubland
        - North American Warm Desert Pavement
        - North American Warm Desert Riparian Mesquite Bosque
        - North American Warm Desert Riparian Woodland and Shrubland
        - North American Warm Desert Volcanic Rockland
        - North American Warm Desert Wash
        - Open Water
        - Recently Burned
        - Recently Mined or Quarried
        - Rocky Mountain Aspen Forest and Woodland
        - Sonora-Mojave Creosotebush White Bursage Desert Scrub
        - Sonora-Mojave Mixed Salt Desert Scrub
        - Sonoran Mid-Elevation Desert Scrub
        - Sonoran Paloverde Mixed Cacti Desert Scrub
        - Southern Rocky Mountain Pinyon Juniper Woodland

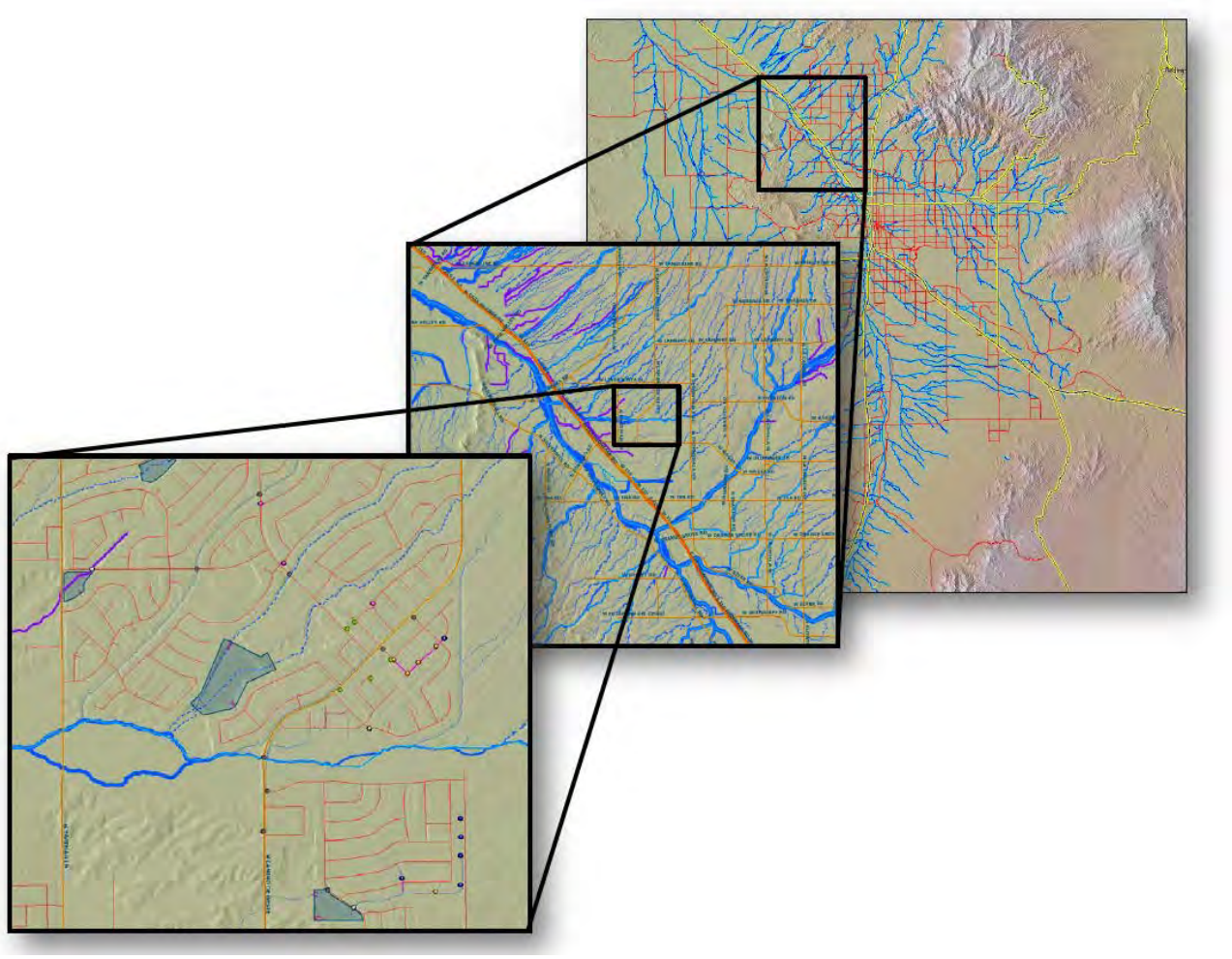
Layers to be added to GIS Maps by September 30, 2015 include the following:

- Drainage area of the five monitor sites

The permit also specifies an assessment of the cost, method, and time to complete a set of layers in GIS that are due by September 30, 2015. Most of the shape files have been completed and are listed above. The layers yet to be added to GIS include the following:

- Locations of Outstanding Arizona Waters and Impaired Waters

The mapping layers include the drainage ways (blue lines for drainageways and red lines for roadways) that are defined by flow rates. At a closer view structural controls are illustrated and include detention basins (blue hatched area), stormdrain pipelines (pink line), catch basins (blue dot), culverts (grey dot), stormdrains (pink dot), scuppers (green dots), and stormdrain manholes (orange dots).



Example of Maps from Pima County's MapGuide

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Appendix F. Open Space Conservation Land Inventory

Property *(Location)*	Acres	Grazing Lease Acres	Acquisition Cost	Acquisition Date
A-7 Ranch *(San Pedro Valley Reserve)*	6,829	34,195	$ 2,041,933	09/01/04
Akers/Dailey *(Cienega Valley-Emprire Ranch Reserve)*	158		$ 1,222,720	10/01/99
Allen/Ball		45	$ 45,000	10/31/12
Alpher *(Cienega Valley-Emprire Ranch Reserve)*	147		$ 514,412	02/01/00
Amadon *(Cienega Valley-Emprire Ranch Reserve)*	39		$ 122,257	12/01/06
Baker (*Cienega Valley-Emprire Ranch Reserve)*	155		$ 226,342	10/01/04
Bar V Ranch* (*Cienega Valley-Emprire Ranch Reserve*)	1,763	12,674	$ 8,189,228	02/01/05
Baxter *(Tucson Mountains Reserve)*	33		$ 274,472	03/01/99
Bee *(Northern Altar Valley Reserve)*	120		$ 60,873	02/01/05
Belvedere *(Tucson Mountains Reserve)*	72		$ 615,972	01/01/06
Berard *(Tucson Mountains Reserve)*	7		$ 81,792	08/01/05
Bradley *(Cienega Valley-Empire Ranch Reserve)*	40		$ 266,036	10/01/99
Brandel		22	$ 33,000	10/23/12
Bruckner		17	$ 9,000	08/08/11
Buckelew Farms *(Northern Altar Valley Reserve)*	505	2,200	$ 5,080,467	10/01/06
Byron		15	$ 46,365	10/19/11
Canoa Ranch* (*Upper Santa Cruz-Southern Altar Valley Reserve)*	4,700		$ 6,150,000	05/01/01
Canoa Ranch II *(Upper Santa Cruz-Southern Altar Valley Reserve)*	33		$ 1,801,106	08/01/05
Canoa Ranch Phase III *(Upper Santa Cruz-Southern Altar Valley Reserve)*	52		$ 1,200,581	12/01/06
Carpenter Ranch *(Tortolita Reserve)*	200		$ 520,011	04/01/99
Carpenter Ranch Phase II *(Tortolita Reserve)*	360		$ 1,180,036	08/01/05
Cates *(Cienega Valley-Emprire Ranch Reserve)*	39		$ 132,957	05/01/06
Chess *(Cienega Valley-Emprire Ranch Reserve)*	37		$ 124,865	02/01/07
Clyne Ranch (*Cienega Valley-Empire Ranch Reserve*)	880		$ 4,979,434	01/10/10
Cochie Canyon *(Tortolita Reserve)*	290		$ 2,901,044	06/01/08

* Acquisition costs include other funding sources such as grants or other county funds.

Appendix F. Open Space Conservation Land Inventory

Property *(Location)*	Acres	Grazing Lease Acres	Acquisition Cost	Acquisition Date
Continental Ranch Development LLC (*Wildlife Corridor*)	15		$ 750,448	07/01/07
Cortaro and Hartman* (*Tortolita Reserve*)	50		$ 1,175,000	08/09/09
Cradick		33	$ 65,000	01/30/12
Dailey	36	42	$ 165,900	03/06/13
Des Rochers *(Tucson Mountains Reserve)*	19		$ 294,028	10/01/06
Diamond Bell Ranch *(Northern Altar Valley Reserve)*	191	30,702	$ 897,730	03/01/08
Diocese of Tucson *(Tucson Mountains Reserve)*	216		$ 636,462	06/01/98
Dos Picos (Tucson Mountains Reserve)	60		$ 1,425,677	11/01/09
Doucette *(Agua Caliente Wash)*	21		$ 569,608	12/01/04
Dragich		20	$ 8,500	11/28/12
Drewes *(Agua Caliente Wash)*	11		$ 388,000	03/01/98
Empirita (*Cienega Valley-Emprire Ranch Reserve)*	2,746		$ 10,835,000	08/01/09
Firkins *(Tucson Mountains Reserve)*	1		$ 30,987	03/01/06
Fort Lowell Acq - Atkins Steel Acq		5	$ 145,065	FY2012/13
Fox		45	$ 75,700	02/02/12
Greenfield		23	$ 29,900	02/15/13
Habitat for Humanity* *(Tucson Mountains Reserve)*	80		$ 1,102,832	07/01/08
Heater *(Tucson Mountains Reserve)*	50		$ 991,743	09/01/05
Hiett *(Tucson Mountains Reserve)*	25		$ 721,863	09/01/05
Holsclaw *(Tucson Mountains Reserve)*	10		$ 159,969	06/01/99
Hyntington *(Tucson Mountains Reserve)*	4		$ 72,163	01/01/06
Jacobs Trust *(Tucson Mountains Reserve)*	80		$ 601,336	03/01/04
Joshua Tree II *(Tucson Mountains Reserve)*	40		$ 130,389	05/01/00
King 98 Ranch (*Northern Altar Valley Reserve)*	1,034	3,096	$ 2,102,921	03/01/05
Kino & 36th Street		20	$ 750,376	11/16/11
Knez *(Cienega Valley-Emprire Ranch Reserve)*	80		$ 240,967	08/01/06
L & F International *(Tucson Mountains Reserve)*	294		$ 2,589,225	06/01/99
Las Lomas 1 & 2 (*Tucson Mountain Park)*	50		$ 748,400	06/01/99
Lawson		31	$ 39,000	12/11/12
Leef *(Tortolita Reserve)*	80		$ 280,000	03/01/98
Lefkovitz/Lakia *(Tucson Mountains Reserve)*	115		$ 275,825	07/01/01
Linda Vista/Patrick *(Tortolita Reserve)*	9		$ 451,561	02/01/07
M Diamond Ranch		604	$ 400,000	12/18/12

* Acquisition costs include other funding sources such as grants or other county funds.

Appendix F. Open Space Conservation Land Inventory

Property *(Location)*	Acres	Grazing Lease Acres	Acquisition Cost	Acquisition Date
Madera Highlands *(Upper Santa Cruz-Southern Altar Valley Reserve)*	366		$ 385,733	08/01/05
Marley Ranch Phase I *(Upper Santa Cruz-Southern Altar Valley Reserve)*	6,337		$ 20,006,112	04/01/09
Mary Henderson Tucson Mnt Park Donations		24	$ -	04/30/13
Matesich *(Tucson Mountains Reserve)*	4		$ 85,586	11/01/05
Mission and 33rd Street (*Tucson Mountains Reserve*)	9		$ 191,896	09/10/10
Mordka *(Northern Altar Valley)*	40		$ 20,265	02/01/05
Nature Conservancy (*Buehman Canyon*)		1,050		09/01/12
Nature Conservancy *(Sabino Creek)*		151	$ 8,000	06/21/12
Nunez *(Cienega Valley-Emprire Ranch Reserve)*	19		$ 68,502	05/01/06
Orach *(Tucson Mountains Reserve)*	3		$ 60,620	05/01/01
Pacheco *(Tucson Mountains Reserve)*	20		$ 241,010	12/01/05
Pearce		3	$ 122,000	01/11/12
Perper/Rollings *(Tucson Mountains Reserve)*	746		$ 5,975,258	02/01/00
Poteet *(Cienega Valley-Emprire Ranch Reserve)*	83		$ 275,820	08/01/05
Pucket - 20825057B thru F		33	$ 42,000	11/26/12
Rancho Seco *(Upper Santa Cruz-Southern Altar Valley Reserve)*	9,574	27,361	$ 18,503,948	05/01/05
Reid *(Tortolita Reserve)*	4		$ 316,920	03/01/07
Rincon Valley Limited Partnership		172	$ 1,008,750	06/11/12
Route 606 *(Tucson Mountains Reserve)*	22		$ 241,134	10/01/06
Ruddick *(Agua Caliente Wash)*	13		$ 369,993	09/01/00
Saguaro Cliffs *(Tucson Mountains Reserve)*	155		$ 1,548,244	11/01/98
Sands Ranch *(Cienega Valley-Emprire Ranch Reserve)*	5,040		$ 21,015,503	12/01/08
Selective Marketing *(Tucson Mountains Reserve)*	10		$ 92,372	10/01/05
Serr *(Tucson Mountains Reserve)*	10		$ 94,776	12/01/05
Six Bar Ranch *(San Pedro Valley Reserve)*	3,292	9,000	$ 11,525,322	08/01/06
Sneed/Carter		14	$ 455,000	09/22/11
Sopori Ranch Phase *(Upper Santa Cruz-Southern Altar Valley Reserve)*	4,135	10,480	$ 18,602,695	01/01/09
South Wilmot LLC *(Pima Pineapple Cactus Mitigation Bank)*	36		$ 112,690	07/01/06
Star Pass Tucson Mnt Park Donations 116271780		98	$ -	03/01/13

* Acquisition costs include other funding sources such as grants or other county funds.

Appendix F. Open Space Conservation Land Inventory

Property *(Location)*	Acres	Grazing Lease Acres	Acquisition Cost	Acquisition Date
Sweetwater *(Tucson Mountains Reserve)*	695		$ 11,733,653	06/01/04
Tang *(Tortolita Reserve)*	40		$ 2,377,079	07/01/07
Tanque Verde & Houghton LLC (*Agua Caliente Wash*)	77		$ 1,558,137	09/10/10
Tanque Verde Creek (Adkins Steel IGA)		14	$ -	03/11/13
Terra Rancho Grande (*Agua Caliente Wash*)	72		$ 1,376,628	01/01/10
Tortolita Mountain Park		1,418	$ 3,780,000	03/19/13
Trayers Family Trust		15	$ 189,000	10/31/12
Treehouse Realty (*Wildlife Corridor*)	13		$ 922,742	04/01/10
Tumamoc Hill*	277		$ 5,209,640	02/01/09
Valenica Site*	67		$ 940,000	03/01/10
Walden* *(Cienega Valley-Emprire Ranch Reserve)*	477		$ 1,400,000	09/01/04
Warland		4	$ 12,350	11/21/11
Totals	53,412	133,625	197,840,856	

* Acquisition costs include other funding sources such as grants or other county funds.

Appendix G. Non-county Industrial and Commercial Facility Inventory

AZPDES AZMSG Number	Facility Name	Sector	Inspection Date of Fiscal Year				
			11/12	12/13	13/14	14/15	15/16
61755	ACTION AUTO AND TRUCK	M	06/20/12		07/17/13		
7828	ALASKA AIRLINES	S					
61557	AMCEP METALS INC	N	04/27/12		07/17/13		
63184	AMERICAN AIRLINES	S					
15591	ARIZONA U PULL & SAVE	M					
63206	ASCENT AVIATION SERVICES CORP	S					
63203	ATLANTIC AVIATION	S					
62828	AVIATION AUTO SALVAGE	M		09/27/12 02/19/13			
63197	BOMBARDIER AVIATION SERVICES	S					
63036	CATALINA AUTO RECYCLING	M		04/17/13			
63080	CEMEX - COLUMBIA PLANT	E	05/11/12				
61414	CONCRETE DESIGNS	E		03/18/13	07/12/13		
61703	CONSOLIDATED REBAR INC (CRI)	AA	06/07/12	10/18/12			
63185	DELTA AIRLINES	S					
61555	DESERT METALS RECYCLING INC	N	06/15/12		07/13/13		
63192	EXPRESS JET	S					
6235	FEDERAL EXPRESS	S					
63191	FRONTIER AIRLINES	S					
8696	HARVEY TRUCKING	P					
72457	HENDRIX & COMPANY LLC	N					
61705	HVF PRECIOUS METALS LLC	F	06/08/12				
72059	INA ROAD WASTEWATER RECLAMATION	T					
63196	LEADING EDGE AVIATION	S					
63201	MED-TRANS CORPORATION / AZ LIFELIN	S					
63208	MILLION AIR	S					
60126	PARTS FOR LESS	M		02/27/13	07/13/13		
62811	POLY PRINT, INC.	X					
7831	PREMIER AVIATION	S					
63200	RATLIFF AVIATION INC	S					
62854	SAFETY-KLEEN SYSTEMS INC	K	05/23/12		07/23/13		
62418	SAGUARO ENVIRONMENTAL SERVICES	P		10/04/12 01/21/13	07/19/13		
62596	SCRAP METALS RECYCLING, INC	N	04/04/12				
63135	SFPP LP TUCSON TERMINAL	P		05/02/13			
63188	SOUTHWEST AIRLINES	S					
63209	SOUTHWEST HELISERVICES	S					
61746	SUN VAN	P		04/04/13 06/27/13			
60146	THE SCRAP YARD	N		03/08/13			
61789	THERMAL ENGINEERING OF ARIZONA	AA					

Appendix G. Non-county Industrial and Commercial Facility Inventory

AZPDES AZMSG Number	Facility Name	Sector	Inspection Date of Fiscal Year				
			11/12	12/13	13/14	14/15	15/16
63235	THERMO FLUIDS INC	N	04/04/12 05/07/12				
63224	TUCSON AIR NATIONAL GUARD	S					
62229	TUCSON INTERNATIONAL AIRPORT	S					
63211	TUCSON POLICE DEPT AIR SUPPORT UNI	S					
62585	TUCSON SOUTH/VAIL ROAD HAULING	P		09/25/12			
62994	TUCSON U-PULL-IT AUTO PARTS INC	M	05/24/12				
63189	UNITED AIRLINES	S					
63183	US AIRWAYS	S					
62636	USF REDDAWAY INC (313/TUC)	P					
7825	VELOCITY AIR INC	S					
63204	VICTOR II LTD	S					
11795	WESTERN REFINING WHOLESALE INC	P		05/17/13			
62778	YOUNG BLOCK TUCSON	E					
	Total facilities inspected		10	11			
	Total new facilities inspected during the fiscal year			9			

Code	Sector
AA	Fabricated metal products
E	Glass, clay, cement, concrete and gypsum products
F	Primary metals
K	Hazardous waste treatment, storage or disposal facilities
M	Automobile Salvage yards
N	Scrap Recycling Facilities
P	Land transportation and warehousing
S	Air transport facilities
T	Treatment Works
X	Printing and publishing

Appendix H. Inventory of Facilities with Potential for Hazardous Substances

No.	Facility	Physical Address	ZIP	NOI[1]	SARA Title III[2]	TSD[3]
1	162ND FIGHTER WING, AZANG	1500 E VALENCIA RD	85706	Y	Y	-
2	AHEARN RENTALS	4985 N. CASA GRANDE HWY	85743	---	Y	---
3	ALCOA FASTENING SYSTEMS	3724 E COLUMBIA ST	85714	N	Y	----
4	AMERIGAS-TUCSON	2455 W WETMORE	85705	----	Y	----
5	APC EQUIPMENT & MANUFACTURING	7291 S FRANCES AVE	85756	N	----	----
6	ARIZONA PRECAST SEPTIC CONCEPTS LLC	5550 S BEVERLY AVE	85706	N	----	----
7	ATLANTIC AVIATION SERVICES TUCSON	1921 E FLIGHTLINE DR	85706	Y	Y	----
8	AUTO & TRUCK SALVAGE CO	3207 E AJO WAY	85713	N	----	----
9	AVIS RENT A CAR SYSTEM-TUCSON INT'L-QTA	2620 E AIRPORT DR	85734	----	Y	----
10	AVIS RENT A CAR SYSTEM-TUCSON INT'L APO	6909 SOUTH PLUMER AVE	85734	----	Y	----
11	B & F MACHINERY SALES AND RENTALS	4761 E LOS REALES RD	85756	N	----	----
12	BUDGET RENT A CAR SYSTEM-TUCSON INT'L	2629 E FLIGHTLINE DR	85734	----	Y	----
13	CALPORTLAND - SWAN RD	9301 S SWAN RD	85706	N	Y	----
14	CATALINA AUTO RECYCLING	4811 E CINDRICH ST	85706	Y	Y	----
15	CEMEX - COLUMBIA PLANT	4100 E COLUMBIA AVE	85714	Y	Y	----
16	CHEVRON USA INC - TUCSON TERMINAL	3865 E REFINERY WAY	85713	Y	Y	----
17	CIRRUS LOGIC INC.	5980 NORTH SHANNON RD	85741	N	Y	----
18	CONCRETE DESIGNS INC	3650 S BROADMONT DR	85713	Y	Y	----
19	CONTRACTORS & ENGINEERS SUPPLY	5230 E CANADA ST	85706	Y	Y	----
20	DON'S TOWING & SALVAGE	4851 E LOS REALES RD	85756	N	----	----
21	GLAS-TEC INC	5041 E CORONA RD	85756	N	----	----
22	GRANITE CONSTRUCTION MAIN OFFICE-SHOP	4115 E ILLINOIS ST	85714	----	Y	----
23	HD SUPPLY CONSTRUCTION SUPPLY	4451 S COUNTRY CLUB RD	85714	N	Y	----
24	HERTZ CORP	6951 S PLUMER AVE	85706	----	Y	----
25	HOLLY ENERGY PARTNERS-TUCSON TERMINAL	3605 S DODGE BLVD	85713	Y	Y	----
26	HORIZON MOVING SYSTEMS, INC	3600 E 36TH ST	85713	----	Y	----
27	IBM	9000 S RITA RD	85744	N	Y	---
28	LAS LOMITAS (VERIZON)	613 W LAS LOMITAS	85704	N	Y	----
29	LEARJET (BOMBARDIER)	1255 E. AERO PARK BLVD	85706	Y	Y	---
30	MITT'S PRECAST	3862 W VALENCIA	85746	N	----	----
31	NORTHWEST MEDICAL CENTER	6200 N LA CHOLLA BLVD	85741	----	Y	----
32	PARSONS STEEL ERECTORS INC	4580 N HIGHWAY DR	85705	N	----	----
33	POORMAN ROAD FACILITY	6500 S OLD SPANISH TR	85714	----	Y	----
34	PROTOTRON	3750 E 43RD PL	85713	N	Y	----
35	QWEST - TUCSON CATALINA C O	5770 N SWAN RD	85718	----	Y	----
36	QWEST-TUCSON FLOWING WELLS CO/SOC	4425 N FLOWING WELLS RD	85705	----	Y	----
37	QWEST - TUCSON NORTH C O	1111 W MAGEE RD	85704	----	Y	----
38	QWEST - TUCSON TANQUE VERDE C O	3800 N HOUGHTON RD	85749	----	Y	----
39	QWEST - TUCSON VAIL NORTH CO	14110 OLD SPANISH TRAIL	85641	----	Y	----
40	QWEST - TUCSON WEST C O	3420 N EL MORAGA DR	85718	----	Y	----
41	R & L CARRIERS	3601 E FARNUM PL	85706	N	Y	----
42	RANACO CORPORATION	4345 E IRVINGTON	85714	----	Y	----
43	RAYTHEON MISSILE SYSTEMS-RITA RD	9030 S RITA RD	85747	N	Y	---
44	ROADSAFE TRAFFIC SYSTEMS	5254 N CASA GRANDE HWY	85743	----	Y	----
45	SAFETY KLEEN CORP	4161 E TENNESSEE ST	85714	Y	----	Y
46	SAGUARO ENVIRONMENTAL SERVICES	5055 S SWAN RD	85706	----	Y	----

1 - Notice of Intent

2 -Section 313 of Title III of Superfund Amendments and Reauthorization Act

3 - Treatment, storage, or disposal of hazardous waste

47	SBC DBA AT&T INC	3701 E COLUMBIA ST	85714	----	Y	----
48	SCHWAN'S HOME SERVICES, INC - 100200	3761 E TENNESSEE ST	85714	----	Y	----
49	SCRAP METAL RECYCLING	4408 E ILLINOIS ST	85714	Y	Y	----
50	SFPP, L.P. - TUCSON TERMINAL	3841 REFINERY WAY	85713	----	Y	----
51	SPLASH POOL CHEMICALS OF ARIZONA INC	3144 E 46TH ST	85713	----	Y	----
52	SUN VAN (FORMERLY KNOWN AS VAN TRAN)	3401 E AJO WAY	85713	Y	Y	----
53	SWAN RD FAC, GRANITE CONSTRUCTION	9301 S SWAN RD	85706	Y	Y	----
54	TUCSON INTERNATIONAL AIRPORT	7250 S TUCSON BLVD	85706	Y	Y	---
55	TUCSON STEEL FABRICATORS INC	4419 N HIGHWAY DR	85705	N	----	----
56	UNION DISTRIBUTING COMPANY	4700 N HIGHWAY DR	85705	N	Y	---
57	UNION DISTRIBUTING COMPANY	4000 E MICHIGAN ST	85714	N	Y	---
58	UNITED AGRI PRODUCTS 1135	4429 N HIGHWAY DR	85705	----	Y	----
59	UNIVAR TUCSON	3791 E 43RD PL	85713	----	Y	----
60	USAF PLANT 44	1151 E HERMANS ROAD	85756	Y	Y	----
61	USF REDDAWAY, INC. (TUC-R)	2350 WEST WETMORE	85705	N	Y	----
62	VULCAN MATERIALS CO-BLACK ANGUS FAC	6500 S OLD SPANISH TR	85747	Y	Y	----
63	WASTE MANAGEMENT OF ARIZONA, S TUCSON	7030 E OLD VAIL RD	85706	N	Y	----
64	YOUNG BLOCK	2200 W GARDNER LN	85705	N	Y	---

1 - Notice of Intent
2 -Section 313 of Title III of Superfund Amendments and Reauthorization Act
3 - Treatment, storage, or disposal of hazardous waste

5.1.1 pH Meter (Accumet 1002)

Store the pH meters in the Stormwater Cabinet during the non-sampling seasons. During winter and summer sampling seasons, calibrate the meters prior to potential sampling events and store two in each vehicle to be used for stormwater sampling.

A. Start with the pH meter in storage-mode (Figure 5-1) using the following steps:
   1. battery disconnected,
   2. short cap placed on the meter terminal, and
   3. pH probe stored in "electrode storage bottle" filled with pH 4 solution.

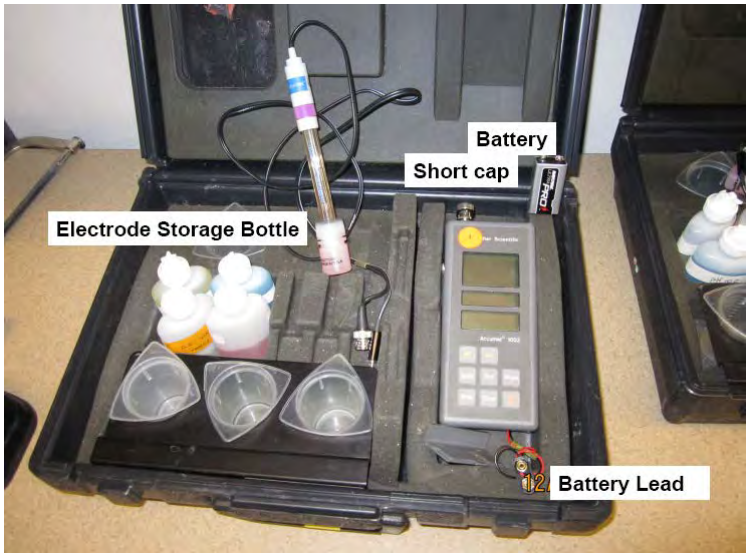

Figure 5-1. Storage-mode of pH meter

B. To activate the pH meter, connect the battery to the pH meter (1), disconnect the short cap from the terminal (2), connect the probe cap to the terminal (3), and connect the probe plug (4) into the meter (Figure 5-2).

Figure 5-2. Reconfiguring pH meter for use or calibration

C. Calibrate the pH Meter

1. Press the ON/OFF key to turn the meter on. If the pH indicator in the main display area is not on, press the pH key to place the meter in pH mode. The main display will show the pH reading. If the Automatic Temperature Compensation (ATC) probe is attached, the temperature reading will appear in the center display. If the meter was previously standardized, buffers used will be shown in the lower display.

2. Set pH display resolution by pressing the EXP key until the desired resolution is shown.

3. Clear the current standardization points by pressing the STDZ key. Within four seconds, press the CLEAR key. Current standardization points will be removed from instrument memory. (The meter will return to reading pH, but with default values for electrode slope and zero potential. The lower display of Standardization Values will be blank.)

4. Pour fresh standard buffer solutions (pH 4, 7, 10) into three different plastic cups. (At the beginning of each sampling season, decant the buffers from the squirt bottles and refill with new buffer solution). The cups and solutions are kept in the pH meter case. The probe includes an ATC (Automatic Temperature Compensation) function that automatically adjusts pH according to temperature. Although the instruction manual says that the buffer solution should be at the same temperature as the sample, an instrument technician for Fisher Scientific indicated that the ATC will account for any temperature differences between the buffer solutions and stormwater samples.

5. Immerse the electrode in the lowest value buffer (pH 4.0). Press the STDZ key to begin standardization. A nominal value for the buffer will begin flashing in the lower Standardization Values display. The main display will track electrode output in millivolts. When electrode output stabilizes, the buffer value will cease flashing and remain on.

6. Rinse the electrode with deionized water, shake the probe gently to remove excess water and immerse it in the second buffer (pH 7.0). Small bottles of deionized water may be found in each pH meter case. Press the STDZ key to begin standardization with this buffer. In the lower display, a nominal value for the second buffer will begin flashing, while the value for the first buffer will remain on. When electrode output stabilizes, the second buffer value will cease flashing and also remain on.

7. Rinse the electrode and immerse it in the third buffer (pH 10.0). Press the STDZ key to begin standardization. In the lower display, a nominal value for the third buffer will begin flashing, while values for the first and second buffers will remain on. When electrode output stabilizes, the third buffer value will cease flashing and also remain on.

8. Record the following information in the Calibration Log kept in the storage cabinet with the meters: date, time, instrument serial number, temperature, pH (+/- 0.1), slope, and analysts name. The calculated electrode calibration slope can be obtained by pushing the SLOPE button and observing the main display on the meter.

D. Measure pH

1. Rinse electrode with deionized water and immerse in sample solution.

2. If the stability bar is not currently on, press the AUTO key. The stability bar will flash and the main display will begin to track sample pH. When the reading stabilizes, the stability bar will remain on and illustrate the pH reading and temperature.

3. Repeat steps #1 and #2 for each pH sample.

4. Store the electrode in pH 4 solution in the "electrode storage bottle" when the sampling event is completed.

E. Store the pH meter when not in use longer than 14 days

1. Place the pH meter in stand-by mode by removing the probe plug and cap, connect the short cap on the terminal, and disconnect the 9 volt battery. Store the 9-volt battery in the pH meter case. Add a spare battery to the case.

2. Verify the shorting cap is connected to the input connector while installing or replacing the battery.

5.1.2 Depth Gage for Sample Sites 3 and 4

A PVC pipe is marked in centimeters for Sample Sites 3 and 4. One side is calibrated for Sample Site 3 and the other for Sample Site 4. When the depth gage rests on the floor of the reinforced concrete pipe (RCP), the reading is zero. As the gage is raised the markings reflect the centimeters above the floor of the RCP. When the depth gage is just touching the top of the flowing water, read the depth from the side of the depth gage calibrated for the site.

5.1.3 Rain Gauges

The Pima County Regional Flood Control District (RFCD) operates the Automated Local Evaluation in Real Time (ALERT), a network of real-time rainfall and runoff sensors in county watersheds. Transmitters send rainfall data from the sensors to a base station computer. The base station transmits a page to the three stormwater pagers from the rain gauges (Table 5-3).

Sample Site	Rain Gauge Number	Rain Gauge Address
1, 3, 4	2100	2100 N. Swan Rd @ Calle del Pantera
2	2380	2380 N. Ruthrauff Rd @ La Cholla Blvd
5	6240	6240 E. Country Club Rd @ Columbia St

Table 5-2. Sample Sites and Rain Gauges

5.1.4 Pagers

Rain gage data is transmitted to stormwater staff using pagers and smart phones. When a rain gage bucket tips and the ALERT system registers the event, the ALERT system calls the Lead Pager. The Lead Pager asks for information and the ALERT system sends the four digit number of the rain gage (Table 5-2). The Lead Pager sends a Group Page Notification to the three pagers and a message to two smart phones (Table 5-3).

Assigned Person	Name	Phone Number
Lead Pager for Group Page Notification	PDEQ Lead Pager	520-446-2403
Jason Saline	PDEQ Pager #1	520-446-2094
Volunteer	PDEQ Pager #2	520-446-2225
Marie Light	PDEQ Pager #3	520-446-2221
Marie Light		520-940-7033
Jason Saline		520-247-0791

Table 5-3. List of Pagers and Assignments

When the pager receives the USAMobility information, the pager sounds an alarm and the smart phones receive a message with the four digit number of the rain gage and a date stamp. In the pager screen, each event shows as a carrot. Selecting a carrot opens a second screen of information that includes the four digit number of the rain gage, time stamp, date stamp, and a couple counters (Figure 5-3).

NN:AAAA	[XX]
	<Y>
HH:MM	MM/DD/YY

where

NN = Number of pages since the device was cleared
AAAA = Street address number from Table 5-2
XX = # of pages since beginning of billing period
Y = Number of tilts/page (?) 1 = 0.04 in; 2=0.08 in
MM = time stamp
DD/YY= Date stamp

Figure 5-3. USAMobility Pager Screen

Additional information regarding the pagers can be found at the following sources:

- Website: http://usamobility.com/
- Service phone: 1-886-299-9678; 1-888-957-7243
- Sales Representative Sebastian Datz: (623)210-9380
- USA Mobility pager manual (*Z:_Shared Data\Water\AZPDES\Monitor\Sample Analysis Plan\USA Mobility Pager Manual.pdf*).

5.2 Readiness for Sampling

A. Check the accessibility of each sample site. Remove any vegetation in the concrete box beneath the grating at Sample Site 3. The manhole cover at Sample Site 4 must be removable.

B. Empty the on-site rain gauges (Sample Sites 1, 2, 3/4 and 5) and clean, if necessary.

C. Note any unusual conditions at the site that may indicate an illicit discharge.

D. Load three Sample Kits and associated field equipment (Table 6-1) in the stormwater vehicle and two Sample Kits and associated field equipment in the stormwater back-up vehicle.

E. Calibrate the pH meters prior to mobilization (5.1.1.C). Include extra batteries with each pH meter. Two meters should be taken for each sample site.

F. At the beginning of each sampling season, perform the following:
   1. Update contacts information of staff, volunteers and CRAO Laboratory.
   2. Verify the hours each volunteer is available.
   3. Review the procedures and safety activities with each new volunteer.
   4. Run a system check of the paging system by contacting Pima County Regional Flood Control District (RFCD) Water Resources Division Chief Hydrologist managing the ALERT system (Andy Wigg, 243-1855).

5.3 Team Mobilization

A. Make a weather forecast at the following websites:
   - Long-term: Unisys Weather Models at http://weather.unisys.com/nam/
   - Short-term National Weather Service - NWS Tucson.
   - Hourly: National Weather Service - NWS Tucson, scroll to *Hourly Weather Graph*

B. Each sampling event must be preceded by 72 hours with daily rainfall that is less than 0.2 inches. ALERT data may be accessed via Pima County Regional Flood Control District Alert System, at http://159.233.69.3/perl/pima.pl. Contact RFCD's Chief Hydrologist managing the ALERT system (Andy Wigg, 243-1855), if there are problems with the rain gauges.

C. Inform the on-call members of the status of rainfall and need to carry pagers or smart phones.

D. Contact the CRAO Lab to arrange for analysis of microbiologic sample(s).

E. Team leader contacts the team member(s) when rainfall is imminent:
   - Summer time: about 1-1/2 hour before rainfall begins
   - Winter time: about the time rainfall begins

5.4 Team and equipment Assembly at Sampling Sites

A. Team leader arrives at site with sampling equipment and supplies loaded in the vehicle.

B. Each team member reports to their assigned site.

C. In route, the team leader should purchase 3-4 bags of ice per sampling site.

5.5 Site set-up

A. On-Site Sampling Decision
1. Assess the local weather conditions, (i.e. wind, lightning, flash flooding).
2. Determine the safety of field conditions and do not sample if it is unsafe.
3. Remember that the first grab sample can be collected up to one hour after runoff begins.

B. Individual Sampler Preparation
Each team member should wear appropriate protective equipment (i.e., clothing, safety shoes, gloves, and safety glasses, as needed).

C. Establish a Safe and Efficient Working Area
1. At night, park the vehicle close enough to illuminate the area with the headlights.
2. Set up the traffic safety cones and traffic barricades around the area, as needed.
3. Set-up the spotlight or use flashlights, if dark.
4. Organize the sampling containers for convenient access.
5. Check the functioning of the meters.
6. Use the pick to open the manhole cover at sites 3 and 4.

D. Pre-Sampling Activities
At the time of arrival, fill-out the upper 1/3 of the *Sample Site Record* form with information on station, date, crew and field conditions.

5.6 Sample Collection

5.6.1 Discrete Samples

A. Collecting Discrete Samples
1. Collect discrete samples at the first time interval (Table 4-2).
2. Filling the sample bottles

a. *E. Coli* Sample

Fill the sample bottle directly from stormwater flow. Fill to the level marked on the side of the bottle. Cap the bottle securely and mix the sample briefly by shaking. Place the PCRWRD Custody Seal over the top of the bottle, fill in the label, place in a ziplock plastic bag, and squeeze the air out of the bag.

b. Total Cyanide sample

Fill bottle directly from stormwater flow. Fill bottle from 250 to 500 ml full. This bottle contains a preservative so it can be filled only once.

c. VOC samples

Fill the vials directly from the stormwater flow. Be sure there is a bead of water over the lip of the vial. When the cap is place on top, there should be no air bubbles in the bottle. Turn the vial upside down and gentle tap the bottle with your finger. If there are

bubbles, discard the sample and refill the bottle. Acrolien and Acrylonitrile must be preserved to a pH between 4 and 5.

d. Oil & Grease and Total Petroleum Hydrocarbons Samples

Fill the sample bottle directly from the stormwater flow. Fill the bottle completely full.

3. Fill an extra 1-liter glass bottle with stormwater. Measure the pH and temperature with the pH meter. Allow sufficient time for the pH probe to stabilize.

B. Recording Sample Information

1. Fill-out the bottle ware labels on the *E. coli* sample bottle, cyanide sample bottle, VOC samples, and O&G-TPH bottle. Labels on the bottles have spaces to fill in the site number, sample date and time.
2. Record the pH and temperature on the *Sample Site Record* form within 15 minutes of collecting the water. The sample forms are printed on waterproof paper so use the "Rite in the Rain" pens to record data. Discard the water in the extra 1-liter glass bottle after recording is completed.
3. Check-off the appropriate sections on the *Sample Site Record* form.

C. Storing the Samples

Place the bottles in the cooler filled with ice. Be sure that the ice surrounds the sample bottles. **Preserve the Colilert sample bottle on ice as quickly as possible** to prevent the bacteria from multiplying in the sample bottle.

5.6.2 Composite Samples

A. Measure and record the discharge or flow rate.

1. At Sites 2, 3, 4, and 5, measure the depth of flow or stage.
   a. For sites 2 and 5, place a ruler or meter stick in the middle of the flow path, vertical to the channel bottom, and measure flow depth in centimeters. For sites 3 and 4, lower the calibrated depth gage until it just touches the surface of the flowing water. Read the depth gage.
   b. Record the flow depth.
   c. Use the Stage-discharge Rating Curve (Appendix C), look-up the measured flow depth and the corresponding discharge. Record the discharge in cubic meters per second on the *Sample Site Record* form. Interpolation between entries on the chart may be necessary.
   d. Identify the highest flow for the sample site and log that value on the *Sample Site Record* form. Calculate the % highest flow and enter the value. As the sampling proceeds and the flow rate decreases, calculate the cumulative volume in milliliters.
2. At Site 1, measure the timed flow from the outfall.
   a. Place a 5-gallon bucket beneath the outfall. Measure the time required to fill the bucket.

b. Record the volume and time required to collect the volume. If the flow rate is high, use the 5-gallon bucket. A white bucket is graduated by gallons.
c. Calculate the discharge (5-gallon bucket = 20.5 L = 0.0205 m^3).
d. Identify the highest flow for the sample site and log that value on the *Sample Site Record* form. Calculate the % highest flow and enter the value. As the sampling proceeds and the flow rate decreases, calculate the cumulative volume in milliliters.

B. Collecting a Composite Sample

1. Use a clean bottle as a scoop. Rinse off the scoop three times with flowing water.
2. Use the field bottle ware directly for collecting flow if site geometry allows, (i.e., Site 1).
3. Avoid stirring up the bottom sediments while collecting the sample.
4. Pour contents of the scoop into the field containers (1-liter clear glass, 1-liter amber glass,1-liter HDPE).

C. Recording Sample Information

1. Measure and record the discharge.
2. Fill in the container labels for the 1-L clear glass, amber glass, and HDPE bottles. The labels require sample site number, sample date, time, and sample number (Table 2-3).
3. Check-off the appropriate sections on the *Sample Site Record* form.

D. Storing the Sample

Put each sample bottle in a cooler and cover the bottles with ice.

5.6.3 Sampling Frequency and Intervals

A. Field Measurements

1. Field measurements of pH and temperature are collected at four different times during a sampling event (time = 0, 60, 120, 180 minutes). The first measurements are taken in conjunction with the discrete samples (Table 4-2).
2. Contact the on-call CRAO Microbiology Chemist (Table 5-1) after the third field measurement is collected (time = 120 minutes) to give a 1 to 1-1/2 hour warning of planned arrival at the CRAO Lab.

B. Discrete Samples

Discrete samples are collected at time = 0 with the first field measurement (Table 4-2).

C. Composite Samples

1. Composite samples are collected every 15 minutes (time = 0, 15, …, 180 minutes), as long as there is sufficient flow to collect an aliquot (Table 4-2).
2. Collect a minimum of 2 clear glass samples, 2 amber glass samples, and two HDPE samples. When arriving on site, assess how long the flow is expected to continue and collect the samples such that these minimum volumes are collected:
    - Amber glass - 2000 mL
    - Clear glass - 563 mL
    - HDPE bottle – 1750 mL

3. Contact the on-call CRAO Lab Technician (Table 5-1) after the last aliquot is collected to advise them of the expected arrival time.

5.7 Site Closeout

A. Sampling Containers and Records

1. Check that all field containers are labeled and safely stored in coolers for transport.
2. Check *Sample Site Record* form is complete and correct.
3. Verify the last reading in *Cummul. Vol (mL)* on the *Sample Site Record* form is 2000 mL or greater to assure sufficient aliquot volume for the composite samples.
4. Place coolers and clipboard in vehicle.

B. Field Instruments

1. Rinse off the pH probe with distilled water. Place in Electrode Storage Bottle with pH 4.
2. Wipe the instruments clean of any excess moisture before packing the instrument.
3. Load the instruments in vehicle.

C. Other Field Equipment

1. Pack up any extra un-used bottle ware and load them in the vehicle.
2. Pack up the meter stick, ruler, sampling scoop, flashlights, and other vehicle equipment.
3. Check the area for incidental trash, etc.
4. Pack up the rainwear, gloves, boots, spotlights, and other personal gear.

D. Transport Samples to the CRAO Lab

1. Complete the *Sample Site Record* form for the following:
    - Contact with laboratory
    - Departure
2. Place the completed *Sample Site Record*, *COC-Discrete* and *COC-Composite* in the plastic ziplock bag in the cooler with the sample bottles.
3. Drive to the CRAO Lab (3035 W. El Camino Del Cerro Rd). Park the vehicle at the sample receiving entrance.

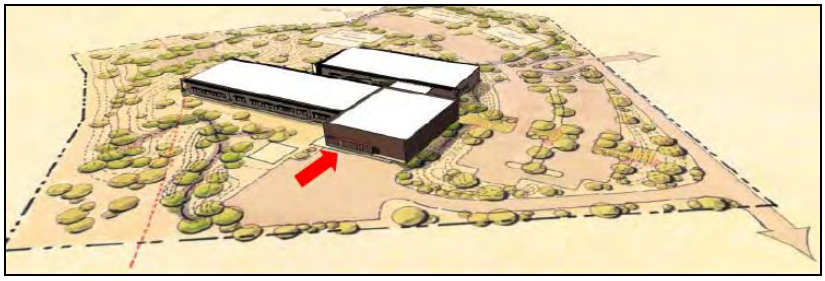

Figure 5-4. CRAO Laboratory Sample Receiving Entrance

6.0 SAMPLE DOCUMENTATION AND TRANSPORTATION

6.1 Field Notes

A field logbook, equivalent to Rite-in-the-Rain No. 550, All-Weather Environmental Field Book, shall be used to document where, when, how and from who vital project information has been obtained. Logbook entries shall be complete and accurate enough to reconstruct field activities. Entries should be legible, written in water resistant ink, and contain factual, objective language. Each logbook entry shall begin with the date and time of arrive, location, and weather conditions at the site. Additional information can include the following:

- Activities performed at the site such as collecting the water quality sample and flow rates
- Conversations with general public,
- Deviations from the sampling plan, safety procedures, and QA/QC procedures,
- Changes in personnel and responsibilities with reasons for the change, and
- Note if photographs were taken.

Sepcific information collected for the sampling event, such as when samples were collected, ph and temperature readings, and associated calculations, are to be entered on the *Sample Site Record* (Appendix D).

6.2 Labeling

Two types of labels are applied to all bottle ware. CRAO laboratory provide a set of bottles with pre-printed labels attached with rubber bands or contained within the plastic bag for the septa vials. PDEQ applies adhesive tape labels to the composite aliquots bottle sets (Figure 6-1).

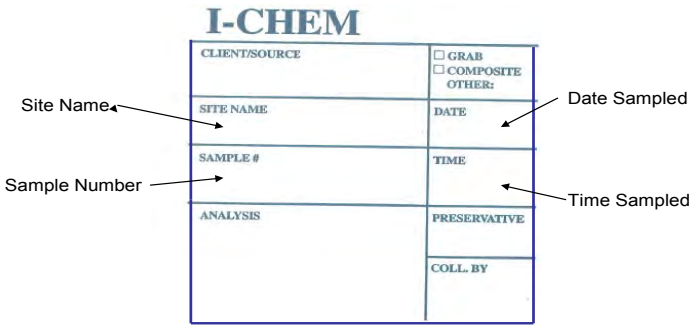

Figure 6-1. Adhesive Tape Label Format

6.3 Chain-of-Custody Forms and Custody Seals

The *COC* forms shall have been pre-filled each season. The site specific information should be added to the *COC* forms.

A. Complete the *COC-Mirco, COC-Discrete* and *COC-Composite* forms.
- Write in the last name of the submitter and sampler(s).
- The composite time is the time the first aliquot was collected.
- Add the field pH and temperature to the *COC-Discrete* form.

- Add any additional information to Comments/Instructions, as necessary.
- Submitter signs their name on the first row. The Receiver (Lab Technician) will sign their name and add the date and time.

B. Submitter signs their name on the first row. The Receiver (Lab Technician) will sign their name and add the date and time.
C. If a mistake is made on the form, draw a single line through the mistake and write the correction. Add your initials and date next to the correction. Add the date and time, which is based on 24-hour clock (military time).
D. Request the Lab Technician send a scanned copy of the *COC-Micro, COC-Discrete* and *COC-Composite* to the Submitter.

6.4 Packaging and Transportation

Logging the information in the *Sample Site Record* documents when the sampling occurred, who was present, what data was collected, and when the sampling was complete (Appendix D). The *Stage-Discharge Table* provides the discharge volumes in cubic meters per second (m^3/s) for each measured centimeter of depth of flow at each sample site (Appendix E). All forms shall be printed on Rite-In-Rain paper. Standard paper when wetted, as is likely during a rainfall event, is difficult to write on and can rip easily.

Bring the *Sample Site Record* form back to the office and scan the document. The three scanned forms should be filed in the following directory:

- Z://_Shared Data/Water/AZPDES/Monitor/WaterQuality/FYyyyy

where yyyy is the fiscal year (FY2013 = July 1, 2012 through June 30, 2013).

7.0 SAMPLE PREPARATION

7.1 Transport into Laboratory

Get a cart from the laboratory, place the cooler(s) on the cart, and roll it into the laboratory. Coolers should contain all the sample bottles (Table 4-3) and paperwork (Table 4-4).

7.2 Release Discrete Samples

A. Complete the *COC-Micro* and *COC-Discrete* form (See 6.3)
B. Release the samples to the Lab Technician, who will load the samples into the refrigerator. The Lab Technician will scan the bottle to verify the temperature of the sample bottles upon receipt.
C. If the Lab Technician is not present to accept the samples, retrieve the key to the refrigeration unit (RU) and load the samples into the RU. Read the temperature of the RU and log the temperature and a note the "Samples were received by the RU" in the "Comments/Instructions:" Place the *COC-Micro* and *COC-Discrete* form in a zip-lock bag and place it on top of the sample bottles.

7.3 Prepare Composite Samples

A. Set-up the compositing equipment and sample bottles

1. Place three 4-liter amber glass narrow neck bottles, three glass funnels and three 1000-ml graduated cylinders on the lab counter. All equipment used for the preparation of the composite samples should be solvent-rinsed and acid-rinsed.
2. Use one set of glassware for each of the amber glass aliquots, clear glass aliquots, and HDPE aliquots.
3. Organize the aliquots on the lab bench by bottle type. If more than one sample site has been sampled, keep the samples separate from each other.
4. Organize the lab bottle ware for the composite samples on the bench.
5. Complete the required information on each colored label on the bottle ware.

B. Composite the samples into the 4-liter amber glass narrow neck bottles

1. A composite sample will be created by combining calculated volumes, from each 1-liter aliquot into a 4-liter amber glass bottle. Using a graduated cylinder, measure out each calculated aliquot volume (from *Flow Weight* on *Sample Site Record* form) and pour the measured volume into the 4-liter amber glass bottle.
2. Perform Step 1 for each of the amber glass aliquots, clear glass aliquots, and HDPE aliquots.
3. When each of the three 4-liter amber glass bottle has been filled with the flow-weighted aliquots, swirl the contents of the bottle to mix the aliquots.

C. Decant the mixed aliquots into labeled bottle ware.

1. For the 4-liter amber glass bottle with the **amber glass aliquots**, swirl the bottle and pour the water to fill-up the following bottle sets:
    - One 1000-mL amber glass bottle with green labels (SVOCs).

- One 1000-mL amber glass bottle with green labels (Pesticides & PCBs).

2. For the 4-liter amber glass bottle with the **clear glass aliquots**, swirl the bottle and pour the water to fill-up the following bottle sets:
   - Two 500-mL clear glass bottles with orange labels (NH4, TKN, TP, NO_3-NO_2, COD)
   - One 125-mL clear glass bottle with green labels (Orthophosphate).
3. For the 4-liter amber glass bottle with the **HDPE aliquots**, swirl the bottle and pour the water to fill-up the following bottle sets:
   - One 500-mL HDPE bottle with red labels (Total Metals, Hardness).
   - One 1000-mL HDPE bottle with green labels (Dissolved Metals).
   - Two1000-mL HDPE bottles with green labels (pH, TDS, TSS, temperature, BOD).

D. Immediately after filling each sample bottle, place the sample bottle into an ice-filled cooler. Extra ice may be found in the sample staging lab area where an ice machine is located.

E. Clean up the lab.
1. Decant the unused aliquots into the sink.
2. Place the used bottle ware in the gray bins next to the sink.
3. Put the remaining equipment away in the cabinet.
4. Wipe the counters clean.

7.4 Release Composite Samples

A. Complete the *COC-Composite* form.
B. Release the samples to the Lab Technician, who will load the samples into the refrigerator. The Lab Technician will scan the bottle to verify the temperature of the sample bottles upon receipt.
C. If the Lab Technician is not present to accept the samples, retrieve the key to the refrigeration unit (RU) and load the samples into the RU. Read the temperature of the RU and log the temperature and a note the “Samples were received by the RU” in the “Comments/Instructions:” Place the *COC-Composite* form in a zip-lock bag and place it on top of the sample bottles.

Appendix J. Certification Statements

Written by:

Marie Light
Principal Hydrologist

Date:

10-30-13
October 30, 2013

Reviewed by:

Richard Grimaldi
Deputy Director, Environmental Quality

Date:

10·30·13
October 30, 2013

Ursula Kramer
Director, Environmental Quality

10·30·13
October 30, 2013

Approved by:

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Date:

John Bernal
Pima County Deputy Administrator

10/30/13
October 30, 2013