

CITY OF TUCSON *LAND USE CODE*
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ARTICLE III. DEVELOPMENT REGULATIONS
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DIVISION 9. RIPARIAN AREA PROTECTION
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3.9.1 INTENT AND PURPOSE. Riparian areas provide a wide range of ecosystem services including wildlife habitat, wildlife linkages, connections to open space, stormwater conveyance, flood-peak reduction, biological treatment of urban runoff, groundwater recharge, recreational use, carbon sequestration, heat island mitigation, economic benefits to property owners, and aesthetic enhancement.

The Riparian Area Protection (RAP) regulation creates a consistent approach to protecting and enhancing riparian areas along regulatory watercourses located within the City of Tucson.

The RAP regulation addresses the existence and function of natural riparian habitat along regulated watercourses and does not ~~cover~~ address all aspects of stormwater conveyance or floodplain management associated with watercourses. Application of this ordinance should consider adopted stormwater and floodplain management regulations, standards, and policies.

This ordinance also recognizes that past human activities have impacted some watercourses within the City of Tucson and have degraded or reduced the functional value of existing riparian habitat, such as connectivity for wildlife between areas of open space, in some portions of their reaches. ~~Values such as connectivity (as wildlife linkages and to open space) can be reduced~~ These functional values may be compromised by the removal of sections of riparian area along the reach of a watercourse, resulting in isolated patches of riparian habitat along a watercourse. Riparian areas may also become dominated by non-native invasive plant species, reducing their value as wildlife habitat for native species. The ~~overall-effective~~ ecological ~~effectiveness-function~~ of riparian areas is related to elements such as plant species diversity and density, presence of native versus non-native plant species, connectivity to other riparian areas and open space, and the existing condition of the watercourse channel.

The intent of the RAP regulation is to:

A. Preserve, restore, and/or improve the ecological ~~effectiveness-function~~ of Regulated Riparian Areas (RRAs) and maximize the continuity of riparian habitat along regulatory watercourses.

~~B.~~ Maintain riparian habitat, and flood control, erosion mitigation, and groundwater recharge functions of watercourses by preserving them in natural and undisturbed states.

~~B.C.~~ Preserve natural open space areas that provide opportunities for active and passive recreational opportunities, protect community aesthetic values, and increase land values for adjacent properties.

~~C.D.~~ Provide land-use guidance for avoiding, minimizing, and mitigating impacts to RRAs.

~~D.E.~~ Preserve high quality RRAs, while still allowing for necessary development.

~~E.F.~~ Maintain or improve the overall ecological ~~effectiveness-function~~ of medium quality riparian areas by protecting RRAs and implementing Best Management Practices (BMPs) to mitigate degraded conditions such as reduced plant diversity and presence of invasive plant species.

~~F.G.~~ Improve the ecological effectiveness of poor quality riparian areas by protecting RRA areas in conjunction with implementing BMPs to restore those RRAs to a higher level of functioning.

~~G.H.~~ Allow reasonable development at RRA sites when it is done in manner that minimizes impacts to the RRA to the greatest extent possible and is mitigated on-site and/or off-site.

~~H.I.~~ Maximize the ecological ~~effectiveness-function~~ of all-riparian habitat that is created to mitigate for the loss of any portion of RRAs.

~~I.J.~~ Assist the ability of RRAs to sequester carbon, mitigate heat island effects, and withstand the effects of projected climate change in this area.

~~J.K.~~ Replace Satisfy the requirements of Article VIII, Watercourse Amenities, Safety and Habitat (WASH), Chapter 29, Tucson Code; and Section 2.8.6, Environmental Resource Zone (ERZ), Land Use Code (LUC), Chapter 23.

~~K.L.~~ Fulfill compliance with Sec. 26-5.1(4), Tucson Code, Floodplain and Erosion Hazard Management.

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3.9.2 APPLICABILITY. PDSD may tweak language.

- 3.9.2.1 The provisions of this division apply to all uses of land affecting Regulated Riparian Areas as defined in Sec 3.9.3.2.
- 3.9.2.2 Concurrent Applicability of Divisions. The requirements of this Division and the Native Plant Preservation Ordinance (NPPO) are calculated separately. Riparian plants or areas preserved for the purpose of compliance with NPPO may be considered for compliance with this Division as long as it meets the intent and purpose of this Division.
- 3.9.2.3 Exceptions. The provisions of this Division do not apply to the following:
 - A. Any lot or parcel existing as of July 3, 1990 to be developed with one (1) single-family residence or single-family residence accessory structure.
 - B. Any single-family residence or other development existing as of July 3, 1990, or any expansion of up to twenty-five (25) percent of either an existing residence or other development.
 - C. A subdivision plat, development plan, or site plan approved prior to [IMPLEMENTATION DATE OF ORDINANCE] provided that construction occurs within five (5) years of the effective date of the RAP regulation and construction is in accordance with the approved plat, development plan, or site plan.

3.9.2.4 This is the preferred regulation for riparian habitat protection. In the case that compliance with this regulation is deemed not possible, there must still be compliance with the requirements of Article VIII, Watercourse Amenities, Safety and Habitat (WASH), Chapter 29, Tucson Code; Section 2.8.6, Environmental Resource Zone (ERZ), Land Use Code (LUC), Chapter 23; and Sec. 26-5.1(4), Tucson Code, Floodplain and Erosion Hazard Management.

3.9.3 GENERAL PROVISIONS

- 3.9.3.1 Regulatory Review Envelope. The Regulatory Review Envelope (RRE) defines the extent of regulatory review (See *Illustration* 3.9.3.1). The RRE consists of:
 - A. The Regulatory Floodplain as defined by Tucson Code, Chapter 26, Floodplain and Erosion Hazard Management.
 - 1. Regulatory Floodplain is any portion of a flood plain, as well as any areas which are subject to sheet flooding, that would be inundated by a Regulatory Flood.

2. Regulatory Flood is a 100-year flood with a peak discharge of 100 cubic feet per second (cfs), or greater, and which has a one percent (1%) chance of being equaled or exceeded in any given year.

B. For a watercourse where the 100-year floodplain is now contained within the top-of-bank, an area fifty (50) feet from top-of-bank on either side of the watercourse.

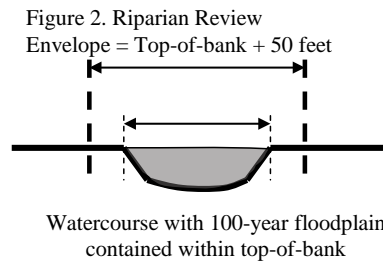
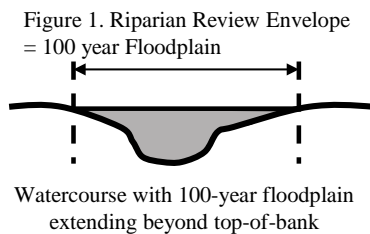


Illustration 3.9.3.1 Regulatory Review Envelope

3.9.3.2 Determination of the Regulated Riparian Areas (RRAs). Regulated Riparian Areas (RRAs) are those areas within the Regulatory Review Envelope (See *Illustration 3.9.3.2*) that consist of one or both of the following:

- A. Areas where native and non-native vegetation exist and are supported by a concentration of water created by the presence of a watercourse, 100-year floodplain, and/or a shallow groundwater area.
- B. Areas currently with little or no vegetation where the presence of a concentration of water is sufficient to support native riparian vegetation.

C. RRAs are not concrete surfaces, existing drainage improvements and flood control structures, existing trails, existing utility alignments, or existing roads and parking lots.

3.9.3.3 Watercourse Consultation Pre-submittal Meeting Required. Prior to submitting plans for Planning and Development Services Department (PDSD) review, the owner of a lot or parcel subject to the RAP regulations must schedule and participate in a Watercourse Consultation meeting with City staff if: **PDSD may revise this.**

- A. Any portion of the development or, as appropriate, any land disturbances will encroach into a Regulatory Review Envelope (RRE) that **does** contain Regulated Riparian Areas (RRA). The purpose of the consultation is to discuss applicability of the RAP regulations, strategies

to minimize impacts, mitigation requirements and options, Best Management Practices (BMPs), and voluntary restoration options.

- B. Any portion of the development or, as appropriate, any land disturbances will encroach into a RRE that does not contain RRA. The purpose of the consultation is to discuss options for voluntary restoration of the former floodplain of the watercourse including through siting of retention basins, water harvesting features, parks, trails and/or Native Plant Preservation Ordinance (NPPO) mitigation plantings; and implementation of BMPs such as invasive species removal.

3.9.3.4 Development Regulations. Development must be conducted in a manner that minimizes impacts to the RRA. When RRA is present on a site to be developed or subdivided, the following options are available for treatment of RRA, with preference in the order shown:

- Avoidance of RRA,
- Minimize disturbance to RRA,
- Rectify, reduce, or eliminate impact to RRA over time,
- Mitigate proposed impacts to RRA by:
 - ☐ Compensatinge for impact to RRA with onsite mitigation,
 - ☐ Compensatinge for impact to RRA with a combination of onsite and offsite mitigation, or
 - ☐ Compensatinge for impact through offsite mitigation.

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3.9.3.5 Avoidance of Regulated Riparian Area. Compliance with this requirement may be accomplished as follows:

- A. *No Encroachment into the Riparian Review Envelope or Regulated Riparian Area*. If there is no encroachment into the RRE or RRA, only temporary fencing surrounding the RRE during construction and development of the site is required.
- B. *Encroachment into the Riparian Review Envelope, But No Encroachment into the Regulated Riparian Area*. If there is encroachment into the RRE that does not disturb or encroach into the RRA, documentation of non-encroachment to staff as part of a Watercourse Consultation Meeting and/or through submittal of basic documentation per staff guidance is required.

3.9.3.6 Minimize Disturbance to Regulated Riparian Area. Minimal disturbance to RRA consists of:

- A. *Encroachment into the Regulated Riparian Area for Restoration Only*. Encroachment into the Riparian Review Envelope solely for restoration of the RRA requires a staff consultation and PDSD-approved Restoration Plan.
- B. *Necessary Development*. Encroachment into the RRA for Necessary

Development is restricted to the following types as long as the locations and overall footprint are designed in a fashion that minimizes impacts to the RRA and the impacts are mitigated in accordance with Development Standard XXX:

1. Roadway, Bikeway, Paved Walkway, and Utility Encroachment. Roadway, bikeway, paved walkway improvements, and utility encroachments into ~~Riparian Review Envelope~~ RRE will be limited and approved only if there is no viable alternate crossing available and the crossing is necessary for the reasonable development of the property. Where allowed, roadway, bikeway, and paved walkway improvements and utility encroachments will cross RRAs perpendicularly, not run parallel to RRAs.
2. Spillways, Pipeline Outlets, Riprap, and Other Elements. The construction of spillways, pipeline outlets, riprap and other elements within the RRA will be limited and approved only if the construction is needed to address stormwater discharge at the site and does not cause destabilization of the watercourse.
3. Trails. The construction of trails parallel to a watercourse will be limited, and approved only where the trail is listed in the City of Tucson Parks and Recreation Department Trails Master Plan (2009).
4. Maintenance. Actions required within a watercourse for purposes of maintaining public health, safety and welfare, will be limited and approved when required by a City of Tucson department, including but not limited to, vegetation trimming, maintenance of the conveyance capacity of the wash, and erosion control.
5. ~~Floodplain Management. Actions required to address the large-scale management of stormwater flows within a watershed or sub-watershed will be limited and approved when required for compliance with adopted floodplain regulations, standards, and policies.~~

~~3.9.3.7~~ Consistency with Flood Control. In areas where a Basin Management Study, such as the Lee Moore Watershed Basin Management Study, has been conducted and the results, recommendations, and requirements of such have been approved by the Mayor and Council, areas designated for preservation in their natural state should be considered when developing a mitigation and/or restorations plans per Sec 3.9.4 and Development Standard XXXX.

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~~3.9.3.7~~ 3.9.3.8 Impacts to Regulated Riparian Areas. Encroachment into the RRA, for any purposes other than restoration, requires development review and approval, and compliance with Sec. 3.9.4 4 and Development Standard XXXX.

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3.9.4 DEVELOPMENT REQUIREMENTS

3.9.4.1 Development Requirements. The following standards and criteria shall apply to any portion of a development or, as appropriate, to any land disturbance within the Regulated Riparian Areas:

A. *Encroachment Standards*.

1. Determination of Encroachment Percentage. The percentage of encroachment into a RRA is determined based on the size of the subarea within the total RRA that is impacted by development, less the size of any subareas undergoing Necessary Development as defined in Sec. 3.9.3.6.B, as a percentage of the total RRA area.
2. Encroachment. Encroachment within the RRA, in addition to the area needed to accomplish Necessary Development, may be permitted in accordance with Development Standard XXXX if the impact to the RRA minimizes the loss of riparian function, and is compensated for by conducting mitigation and utilizing specified Best Management Practices (BMPs) that result in a net maintenance or improvement of the ecological effectiveness of the Mitigation Areas and/or RRA.

B. *Minimal Impact Required*. Development must avoid, if possible, and minimize impacts to the RRAs and ensure mitigation maintains or increases the ecological effectiveness of the site. Encroachment within RRAs can be approved only if PSD finds that:

1. The encroachment within the RRA is accomplished in a way that minimizes damage to ecological effectivenessfunction;
2. The mitigation proposed to compensate for the encroachment incorporates Best Management PracticesBMPs that result in a net improvement in ecological effectiveness-function to the RRAs where mitigation occurs; or
3. The encroachment is necessary to allow for reasonable development of the property and the encroachment is mitigated adequately on-site and/or off-site to replace lost ecological effectiveness of the RRA impacted on-site.

C. *Mitigation Plan Required*. Any necessary development or encroachment within RRAs, except encroachment for restoration only, requires mitigation to compensate for impacts unless otherwise specified in the regulations. Mitigation Plans must be developed in accordance with Sec. 3.9.4.2 and Development Standard XXXX.

- D. Plan Approval Prior to Site Modifications.* No grubbing, grading, or removal of plants from the site shall take place prior to the submittal and approval of the required Mitigation Plan. Regulated Riparian Areas (RRAs) designated in Sec. 3.9.3.2 shall not be removed or damaged except in accordance with the approved Plan. No portions of the RRA, even as indicated on the approved Mitigation Plan, may be removed or damaged until a grading permit has been issued for the site.
- E. Fencing Required.* Temporary fencing is required around those areas of the RRAs that are to be left undisturbed. This fencing is intended to protect these areas from damage during construction activities. Long-term preservation of this Protected Riparian Area (PRA) must be accomplished in accordance with Sec. 3.9.6.
- F. On-Site Monitoring.* On-site monitoring of all aspects of site clearing, grading, PRA protection, and mitigation shall be provided during project construction at the expense of the developer for all residential development that is over five (5) acres and for all commercial development that is over one (1) acre. The monitoring shall be performed by a individual who is qualified in arid lands plant or habitat resources as specified in Sec. 3.9.4.2.B. The monitor shall provide periodic progress reports to the developer outlining the status of work accomplished and any problems encountered. A copy of these reports will be submitted to PDSD for the project file. These reports can be compiled and submitted jointly with on-site monitoring reports required under Sec. 3.8.6.7.D, Native Plant Preservation.
- G. Submittal Compliance.* The monitor shall be responsible for an assessment of the condition of the site's PRA and Mitigation Areas for one (1) year after the final inspection has been performed on the site. The monitor shall visit the site and prepare a report on PRA and Mitigation Area status, including general condition of mitigation plants, the identification of plants under stress and the appropriate methods to relieve the stress, and recommendations for replacement of plants that are dead and dying. Dead or dying plants shall be replaced with the same size plant at a 1:1 ratio of like genus and species. Copies of the report shall be submitted to the site owner/developer and to PDSD. The owner shall respon to the plant needs as outlined in the status report within six (6) months of report submittal or within a shorter period if required to improve the health of stressed plants and prevent plant loss. These reports can be compiled and submitted jointly with on-site monitoring reports required under Sec. 3.8.6.7.E, Native Plant Preservation.

3.9.4.2 Riparian Resources Report. A Riparian Resource Report (RRR) provides the baseline assessment of site conditions; documents hydrologic conditions, ecological context, drainage, land use context, wildlife

conditions, factors affecting heat island conditions, and vegetation information; and identifies proposed impacts and proposed mitigation as detailed in a Mitigation Plan.

- A. *RRR Required.* An owner is required to prepare and submit a RRR in conformance with Development Standard XXXX when there is encroachment into the RRA. The PDS Director may waive a RRR element only when the reduction in the RRR does not diminish information necessary for staff evaluation.
- B. *Professional Expertise.* Preparation of all elements of the RRR shall be performed by a professional, such as: -----landscape architect with Arizona state technical registration, an arborist with International Society of Arboriculture certification, or a biologist, horticulturalist, botanist, restoration specialist, or other specialist with a minimum B.S. or B.A. in a plant-oriented natural resource field.
- C. *Mitigation Plan.* A Mitigation Plan must be included in the RRR and demonstrate conformance with Development Standard XXXXX. The Mitigation Plan must also incorporate any Best Management Practices determined in consultation with staff.
 - 1. On-Site Mitigation. Mitigation should be conducted on-site and should be integrated with, and function as a part of, the remaining preserved RRA (Protected Riparian Area) unless, due to space constraints at the site, other configurations are necessary and have been reviewed and approved by PDS. Other configurations might include conducting mitigation in retention/detention basins, landscape buffers, or other on-site landscaped areas. Preference will be given to sites adjacent to PRAs or undisturbed uplands
 - 2. Off-Site Mitigation. If site conditions preclude effective on-site mitigation of the total mitigation requirement, off-site mitigation may be proposed as part of the Mitigation Plan for impacted sites that do not provide habitat for species of concern, subject to approval by the PDS Director. If mitigation must occur off site, the mitigation acreage ratio will be a minimum of 1.5:1 in terms of impacted acres. This can be accomplished through restoration of riparian areas on public land or private land held under conservation easement, or through monetary contribution to a Restoration Fund.

3.9.5 REVIEW AND APPROVAL **PDS will submit language.**

- A. *Review and Approval Procedure*
- B. *Voluntary Stormwater Advisory Committee Review.* Applications not required to undergo SAC review per Development Standard XXXX may

receive review and recommendations from SAC at the request of the applicant.

3.9.6 PROTECTED RIPARIAN AREA OWNERSHIP. Ownership of the Protected Riparian Area must be provided in one or more of the methods set forth below to insure continued preservation of the area in perpetuity. Forms of ownership of Protected Riparian Areas include: **PDS** is revising this.

- A. *Subdivisions.* PRAs within the common area of a subdivision must be either publicly owned, owned by a common association, or owned by a non-profit association which provides for conservation management. PRAs will be managed for conservation and will provide for conservation in perpetuity via a conservation, preservation, or public easement, which is enforceable by a third party and/or the public.
- B. *Private Residential Lots.* Privately owned individual residential lots may include PRA where (i) the Protected Riparian Area is delineated on the plat providing a surveyed description of the location within each lot, and (ii) there is a note on the plat requiring that each purchaser of a lot shall sign a disclosure form acknowledging the prohibition upon development in the Protected Riparian Area, (iii) no walls or fences are constructed within the PRAs, and (iv) the PRA is separated from the use-area of the lot by a wall of fence. The PRA shall be protected through a conservation, preservation, or public easement or other legal restriction ~~upon further development.~~

3.9.7 APPEALS AND VARIANCES

- A. *Variance Requests.*
 - 1. The Design Review Board (DRB) shall review all requests for variances from Riparian Area Protection regulations as provided in Sec. 5.1.8.3.F and shall forward its recommendations to the Board of Adjustment in accordance with the Board of Adjustment Full Notice Procedure, Sec. 23A-50 and Sec. 23A-52.
 - 2. If the City Engineer or designee, a notified property owner, or the applicant for the variance requests consideration of stormwater management issues related to the variance, the Stormwater Technical Advisory Committee (STAC) may review the variance request concurrently with the Design Review Board (DRB) and may provide written or oral testimony at the public hearing for the variance request. Any such testimony must address the required findings.
- B. *Appeals of the DSD Director's Decision.*
 - 1. Appeals of the Development Services Department (DSD) Director's

decision are reviewed by the ~~Design Review Board (DRB)~~ if the DRB did not review the application prior to the DSD Director's Decision. The DRB will forward a recommendation to the Mayor and Council in accordance with the Mayor and Council Appeal Procedure, Sec. 23A-62.

2. The Mayor and Council shall decide appeals in accordance with the Mayor and Council Appeal Procedure, Sec. 23A-62, based on the record and on any recommendations received from the Design Review Board (DRB).
- C. *Proposed Land Use Code (LUC) Amendments.* The Stormwater Advisory Committee (SAC) may review all proposed amendments to this Section and may provide written conclusions and recommendations to the Director of the Department of Transportation to be forwarded to the Planning Commission and the Mayor and Council prior to public hearings on the proposed amendments.

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