

**RIPARIAN  
HABITAT  
STANDARDS  
PRESENTATION**



## Comparison of existing and proposed riparian protection regulations



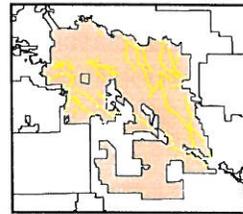
Office of Conservation and Sustainable Development

October 7, 2009

## Current Regulations

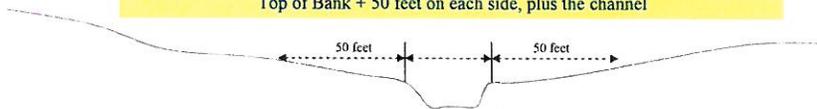
### WASH

- Adopted 1991, 103 miles;
- No development in resource area unless loss is minimized & mitigated
- Urban, channelized watercourses



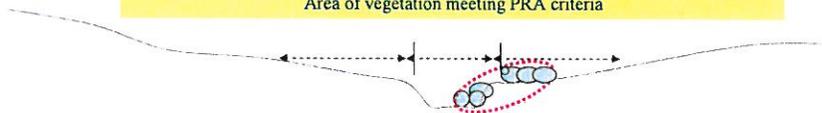
### Regulated Area ("Study Area")

Top of Bank + 50 feet on each side, plus the channel



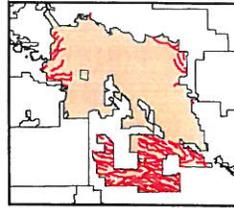
### Protected Riparian Area

Area of vegetation meeting PRA criteria



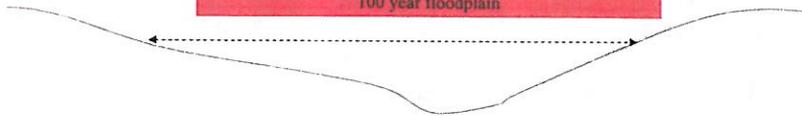
## Current ERZ

- Adopted 1990, 183 miles
- Intent is to preserve 100% of critical habitat
- Natural condition, urban fringe, connectivity



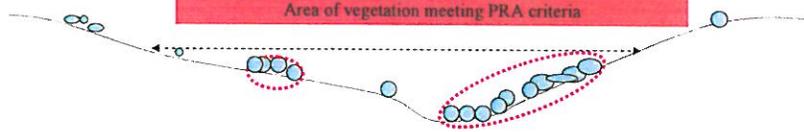
### Regulated Areas

100 year floodplain



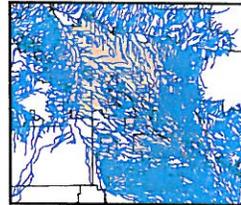
### Protected Riparian Area

Area of vegetation meeting PRA criteria



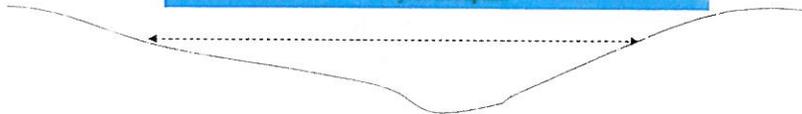
## Current Floodplain

- Adopted 1984, many miles of washes
- Do not unnecessarily alter riparian habitats
- Need 100-year floodplain delineated



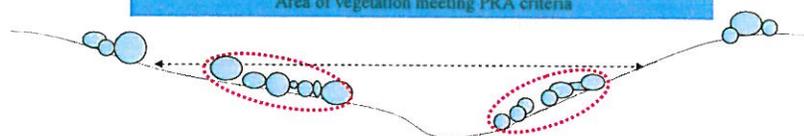
### Regulated Areas

100 year floodplain



### Protected Riparian Area

Area of vegetation meeting PRA criteria



## Historical Context

**2005:** 3rd failed attempt to add additional watercourses to WASH and ERZ lists.

**Bigger problem:** Floodplain ordinance poorly/inconsistently implemented.

**Solution:**

- Short term -- new Development Standard
- Long term -- revised Riparian Habitat Preservation ordinance

## Proposed Riparian Ordinance

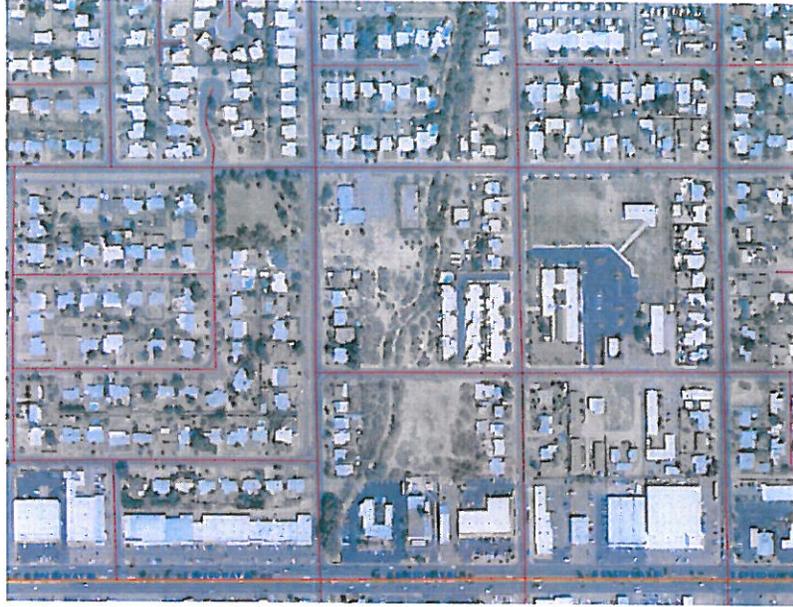
### New Protected Riparian Area Definition

**If vegetation is present:** Vegetation supported by a concentration of water that exceeds rainfall alone, including flow in a watercourse and its floodplain, water concentrated by natural or artificial embankments or impoundments and/or areas underlain by shallow groundwater. This vegetation can be distinguished from other vegetation based on relative size, density, and species composition of vegetation. In addition, includes vegetation within 50-ft of top-of-bank along watercourses where the flow is now confined within top-of-bank

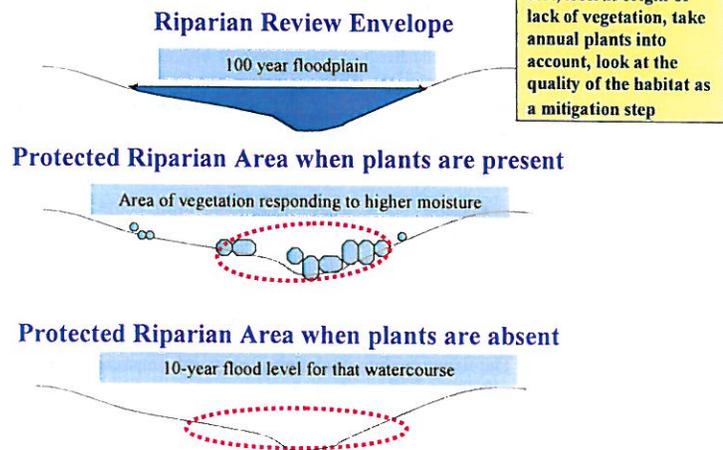
**If vegetation is not present:** Areas where water availability could support riparian vegetation even if there are very few or no plants currently present. **Delineate the area using the 10-year floodplain, the zone of influence of shallow groundwater, or the 10-year ponding area of embankments or impoundments; or top-of-bank + 50 feet for washes where flow is confined within top-of-bank.**

**Perimeter area:** The Riparian Area includes all areas encompassed within a perimeter created by the outermost boundary of riparian vegetation—or the area that could support such vegetation—on each side of the wash, with the end points of each area joined together at the centerline of the wash.

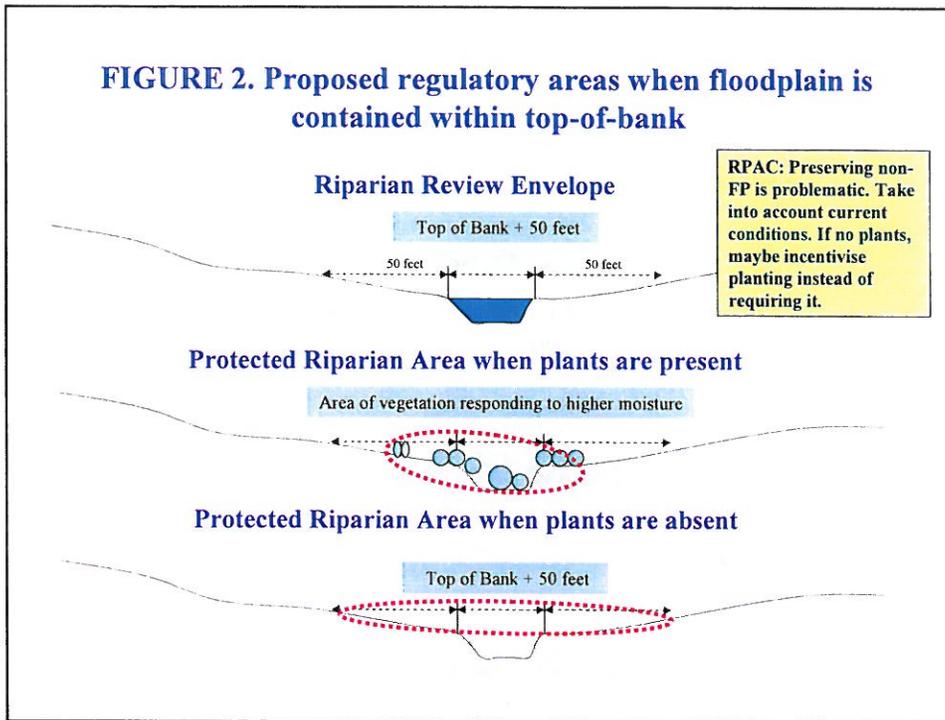
## Protected Riparian Area



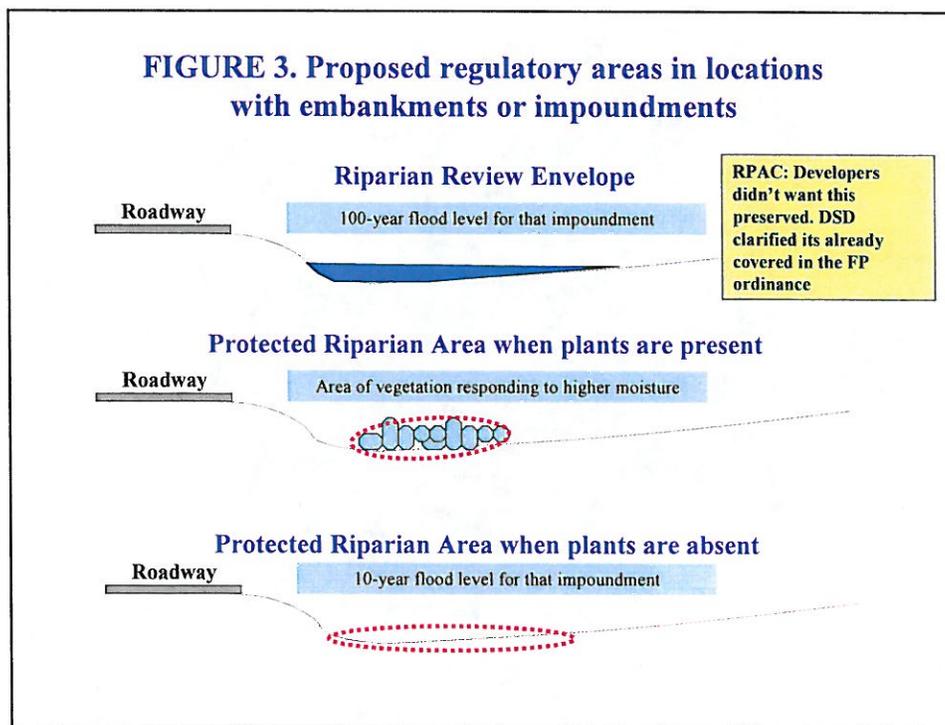
**FIGURE 1. Proposed regulatory areas when Floodplain exceeds top-of-bank**



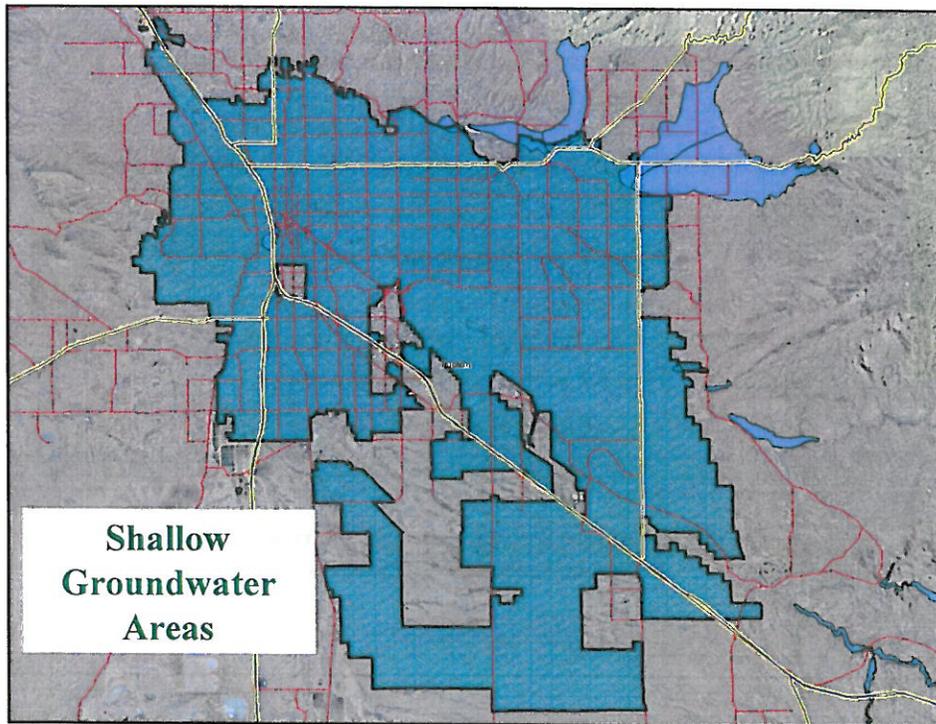
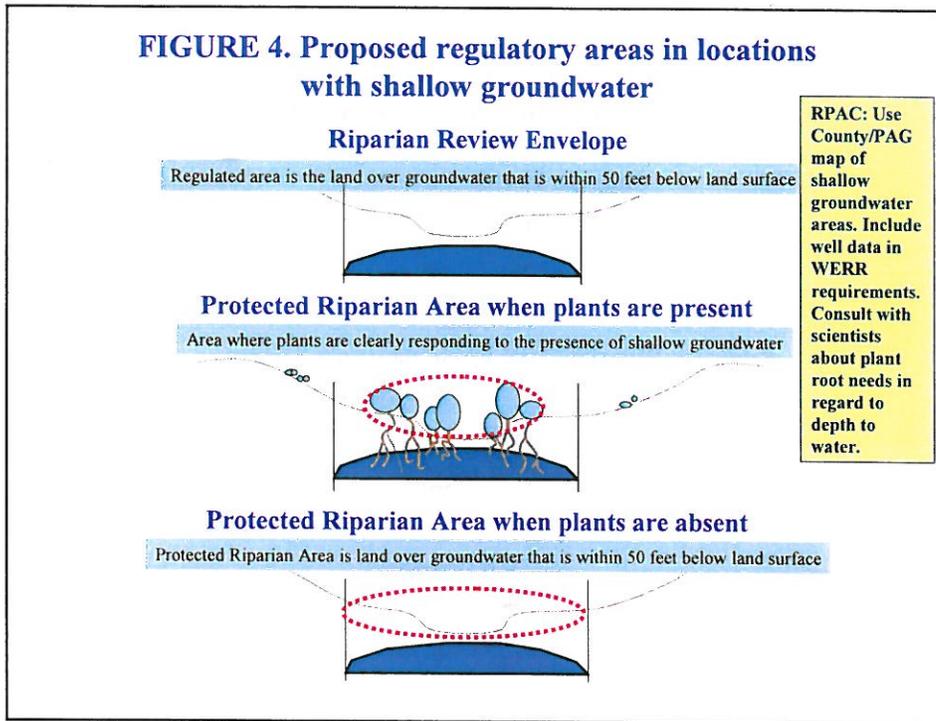
**FIGURE 2. Proposed regulatory areas when floodplain is contained within top-of-bank**



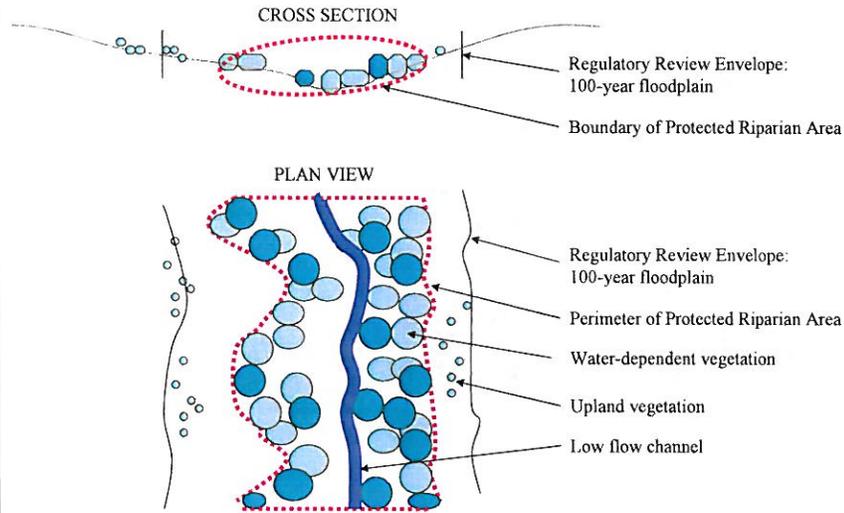
**FIGURE 3. Proposed regulatory areas in locations with embankments or impoundments**



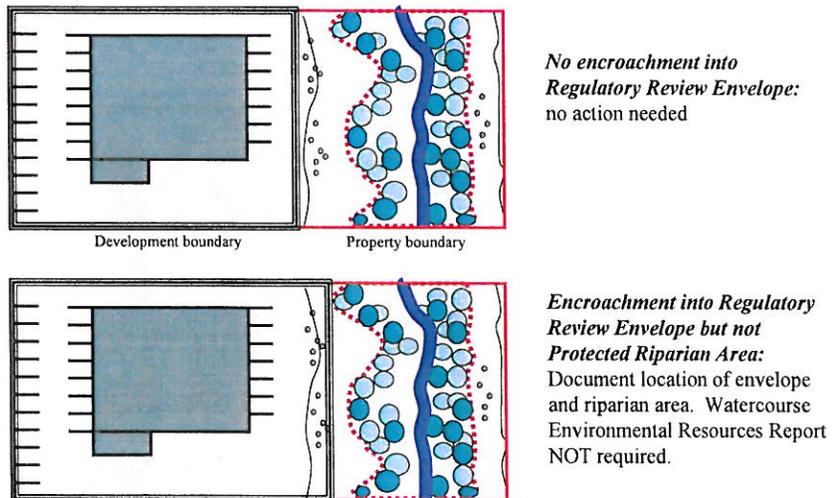
**FIGURE 4. Proposed regulatory areas in locations with shallow groundwater**



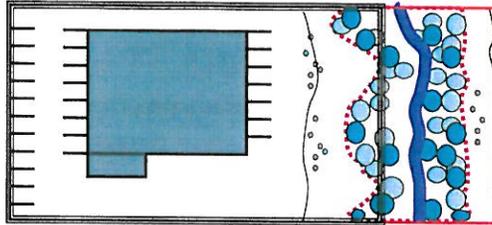
**FIGURE 5. Example Site**



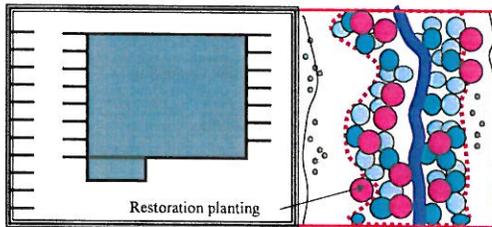
**FIGURE 6. Categories of Impact**



**FIGURE 7. Categories of Impact**



**Encroachment into Protected Riparian Area:** Prepare WERR, Prepare Mitigation Plan, go to Stormwater Advisory Committee (SAC) at 20% encroachment, (for WASH/ERZ named washes) at 30% for other washes.



**Restoration only:** not considered encroachment. Must prepare a Restoration Plan in order to proceed.

**FIGURE 8. Necessary Development**

- Does not count toward percent encroachment
- Does require mitigation
- Must be placed to minimize impacts

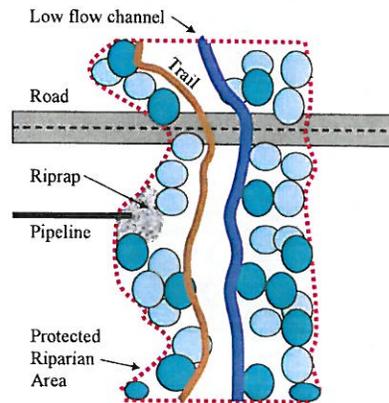
**RPAC:**  
Unresolved discussion about trails being non-encroachment.

*Currently includes:*

- Roadway, bike path, paved walkway and utility crossings perpendicular to watercourse

*Propose to add:*

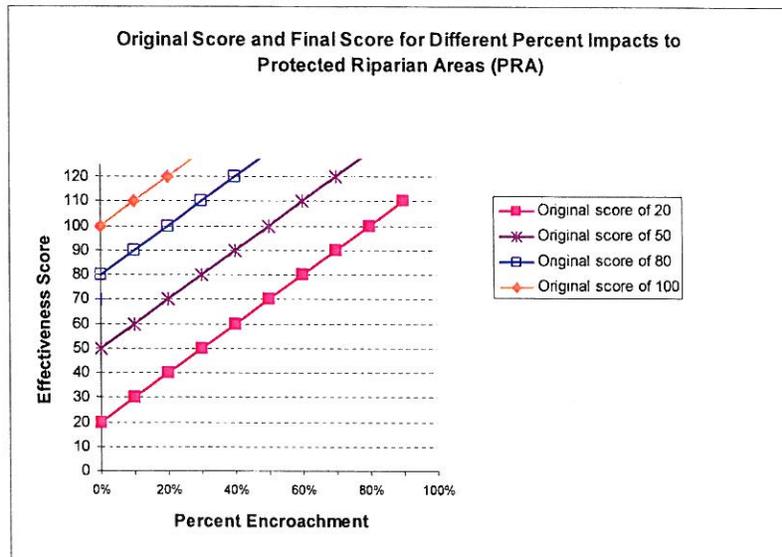
- Spillways, pipeline outlets, riprap & other elements necessary to ensure development discharges do not destabilize a wash
- Trails parallel to the watercourse only if they are referenced in City's new Trail Master Plan



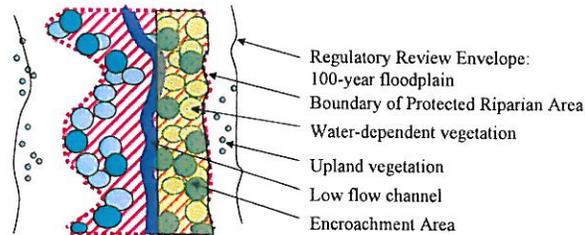
# E S C O R I N G

RATING CRITERIA	RATING LEVEL				
	1	2	3	4	5
Percent cover of trees and shrubs	≤10 percent	30 percent	50 percent	70 percent	≥ 90 percent
Structural Diversity	no vegetation	single story, no trees	single story, only trees	two of more stories	three stories plus vines or tobosa grass swale
Native species composition	dominated by desert broom and other native pioneer species	more pioneer species then advanced succession species	even combination of pioneer and advanced succession species	more advanced succession species then pioneer species	dominated by advanced succession native species
Nonnative species composition	plant composition heavily dominated by invasive nonnative plant species	moderate presence of invasive nonnative species	moderate presence of nonnative species that are not invasive, some presence of invasive nonnative species	light presence of nonnative species that are not invasive	little or no presence of nonnative species
Site disturbance Floodplain condition	Significant soil compaction and erosion	Moderate soil compaction and/or erosion	limited soil compaction and/or erosion, vegetation removal or degradation	vegetation removal or degradation	very minor surface impacts
Channel incisement	incised on site and additional destabilizing conditions are present off site	Channel is incised on site	Channel is not incised on-site but there are possible destabilizing conditions off site	channel is not incised, but there are no control structures or conditions downstream that would prevent future incisement	Channel is not incised and there is a control structure or condition downstream that should prevent future incisement
Channel armoring	channel is armored on bottom and sides	Channel is armored on the sides, sandy bottom	Channel is totally dirt, but has been mechanically shaped or straightened, typically into a trapezoid	Channel has been lightly mechanically shaped or stabilized around bridges road crossings or other man-made structures	channel has not been mechanically shaped or stabilized and is still completely natural
Percent hardscape of Floodplain	80 percent	60 percent	40 percent	20 percent	no hardscape on the floodplain
Surrounding land use as it affects wildlife potential	moderate to dense development on four sides of the site	moderate to dense development on three sides of the site	moderate to dense development on two sides of the site	moderate to dense development on one side of the site	site is surrounded by natural open space or has some surrounding low density development
Wildlife corridor potential	site is surrounded by high density development and limited by on-site and/or near-site	watercourse is limited for wildlife corridor function by small culverts or other structures at	watercourse is constrained by either limited culvert size or other structures at the site or immediately	watercourse is free of limiting culverts or other obstructions to wildlife at the site and within 0.1 miles	site has a regional watercourse that is crossed only by bridges so watercourse

## Improvement Ratios



**FIGURE 9. Plant Survey**



**RPAC: Include dead trees in the survey count**

**General PRA Survey**

- Follow Native Plant Protection Ordinance (NPPO)
- Add circle around native grass areas

**Encroachment Survey into PRA**

- Options for survey:
  - Random survey of 20% of site (NPPO approach); OR
  - Survey entire encroachment area
- Survey all live woody plants 2" diameter or greater
- Survey shrubs, vines, native grass & cacti
- List all native and nonnative species present in Encroachment Area as overview of habitat

**Mitigation Plan**

- Replace nonnative plants with native plants
- Salvage plants, cuttings and seeds from on site
- Irrigate 10 percent of new plantings in perpetuity
- Replacement habitat should exceed quality of previous habitat based on Effectiveness Scoring; incorporate appropriate Best Management Practices to achieve this



**RPAC/Subcommittee: still hashing this one out. Don't want to overplant, but do want to get good new habitat established. Some discussion of making ratios site-specific**

**Mitigation Ratios**

*Currently*

- Replace trees at a rate of 2:1 or 3:1 ratio, depending on size of tree

*Proposed ordinance for On-Site Mitigation*

- Replace trees, shrubs and cacti at a rate between 1.5:1 and 1:1, Higher ratio could be a combination of trees removed and new species to increase diversity
- Replace plant mortality for 1 year
- For urban sites with watercourses, if failure to reconfigure or move the watercourse precludes site use at its current zoning or designated in-fill status, watercourse may be reconfigured or moved with resultant new area 1.5 x impacted area.

*Proposed ordinance for Off-Site Mitigation*

- Allowed where on-site mitigation is not possible. Mitigation ratio shall be 5:1 for impacted Protected Riparian Area

## Staff Consultations and Stormwater Advisory Committee (SAC)



### *Currently*

- Staff consults on all projects as early in design as possible; written record informs subsequent steps of review
- All applications that propose to encroach into WASH Study Area, or ERZ 100-year floodplain go to SAC for review regardless of whether riparian habitat is disturbed.

### *Proposed ordinance:*

- Staff consults on all projects as early in design as possible; written record informs subsequent steps of review
- Staff to brief SAC on all applications where a DSMR is requested (>10% encroachment)
- SAC reviews applications for proposed encroachments > 20% for labeled WASH and ERZ watercourses
- SAC review applications for proposed encroachments > 30% for all other watercourses
- DSD Director can send other projects to SAC at his discretion

