

# PIMA COUNTY REGIONAL FLOOD CONTROL DISTRICT TECHNICAL POLICY

**TECHNICAL POLICY TECH-028**

**EFFECTIVE DATE: May 18, 2012**

## **POLICY TITLE: Pre-Ordinance Agricultural Berms, Channels and Stock Ponds**

**PURPOSE:** To clarify Section 16.12.010 of the Ordinance regarding continuation of use and the reasonable repair or alteration of constructed agricultural features such as berms, channels and stock ponds that were legally created prior to December 16, 1974. This policy will also clarify Section 16.16.050.A of the Ordinance establishing the requirement to address the impact of these features based on their continued existence, their failure, or their removal when proposing development of adjacent or downstream properties.

### **BACKGROUND:**

Due to the extensive amount of agricultural activity that typifies and continues to typify much of unincorporated Pima County, there are many constructed agricultural features that have the potential to impact flood waters, often by design. These agricultural features, such as stock ponds and berms and channels to protect farm fields, were rarely, if ever, engineered or constructed to withstand the base flood so their impact to the regulatory floodplain is unknown. Due to an increasing amount of new development that has been proposed and constructed around these historic features, and the unknown quality of their construction, additional evaluation is warranted to more accurately determine the hazard these features pose. This policy will define this additional evaluation, as required pursuant to 16.16.050.A, as well as identify when it is warranted.

One of the Development Criteria found in the Basin Management Plan for the Lee Moore Wash Basin Management Study pertains to the impact of stock ponds on the regulatory floodplain, and establishes requirements for addressing the flood hazards associated with stock ponds when downstream development is proposed. This criterion will serve as the basis for any flood hazard analysis that is to be submitted to the District to justify placement of development downstream or adjacent to one of these features.

Uncertainty regarding the responsibility of the owner of the agricultural feature to maintain these historic features makes permitting nearby development more problematic. Section 16.12.010.B of the Ordinance allows reasonable repair and alteration of improvements that legally existed on December 16, 1974, but does not require reasonable repair and alteration. This policy will attempt to establish more clarity as to the responsibility of the owner of the agricultural feature regarding their reasonable repair.

**POLICY:** For the purpose of this policy, an agricultural feature means any constructed agricultural earthwork such as a berm, dike, levee, channel or stock pond which was constructed prior to December 16, 1974.

## **I. Responsibility of the Developer to address Agricultural Features**

### **A. Flood Hazard Analysis for Adjacent or Downstream Properties Prior To Development**

Any person wishing to construct an improvement that may be impacted by an upstream or adjacent agricultural feature shall address the potential impact of that feature through an engineering analysis prepared by an Arizona registered civil engineer. The analysis requires review and approval by the District prior to authorization of construction. At a minimum, the analysis shall address the following items:

1. Determination of the floodplain assuming the feature remains fully functional as originally constructed.
2. Determination of the floodplain assuming the feature fails, including the potential for a flood wave that exceeds the base flood floodplain.

3. Determination as to whether feature(s) that are not immediately upstream or adjacent to the development will divert water that adversely impacts the proposed development. In this situation, the worst-case scenario may be that the structure remains intact.
4. Other site-specific issues as determined by the District or the engineer performing the analysis.
5. Establishment of development criteria based on the more restrictive result of I.A.1 through I.A.4, including but not limited to the establishment of minimum finished floor elevations and the design of foundations that protects structures from erosion and flood wave impact, if applicable.

## **B. Coordinated Approach to Address the Flood Hazards of an Agricultural Feature**

Whether in lieu of, or as a result of, the analysis required pursuant I.A., an applicant may contact the owner of an agricultural feature to propose improvements or modifications to the feature. A coordinated approach to addressing the compatibility of the feature with the proposed development will reduce the flood risk potential. The following are options that address the feature and development in a coordinated manner:

1. Removal of the feature – Removal of the feature will address the issues of a flood wave and the uncertainty of location of failure of the feature.
2. Selective removal of the feature – Breaching the feature in specific locations in advance of development will help ensure that the development is located in the area with the lowest flood risk.
3. Upgrade/reinforcement of the feature or portion of the feature – It is possible that the feature or a portion of the feature serves a beneficial purpose to development and can be modified to meet the current standard.
4. A combination of 2 and 3.

Prospective developers may approach the owner of a feature to request removal, improvement or other modification to the feature so that performance of the feature during the base flood can be better evaluated. Arrangements for the removal of or improvement to the feature must be by mutual agreement of the private parties. Removal of the feature or a portion thereof requires an FPUP and an engineering analysis. In addition, if the FPUP application includes improving the feature to remain stable during the base flood, the submittal shall include a maintenance plan with assurances that are similar to what is required for other significant flood control structures, Specific Covenants, Conditions, and Restrictions signed by the Owner of the feature and all property owners and, if the developer is the responsible for maintenance, the recordation of an easement for the right to enter property to perform construction and maintenance.

## **II. Responsibility of the Owner of Agricultural Features**

### **A. Repair of Agricultural Features**

Repair means ongoing maintenance in order to keep agricultural features in their original condition or to restore their original condition, if damaged. These repairs are exempt from the Floodplain Ordinance.

### **B. Improvements to Agricultural Features**

The following modifications to agricultural features require a Floodplain Use Permit (FPUP):

1. Raising or lowering the height of a berm or stock tank embankment
2. Increasing or decreasing the length of a berm or channel
3. Increasing or decreasing the depth of a channel
4. Changing the location of any feature
5. Removing or breaching any feature
6. Stabilizing the constructed feature to withstand the regulatory flood
7. Any other alteration that creates a potentially adverse impact to any adjacent property.

Unlike reasonable repair, which is for the purpose of maintaining the original condition and dimensions of the feature, modification of the condition or dimensions of the feature does require an FPUP. The purpose of the

FPUP is to ensure that the modification does not cause adverse impact of adjacent properties. Since these features existed legally at the time of the creation of the Floodplain Ordinance, it is these modifications, and their associated impact on the regulatory floodplain that are subject to review and approval by the District.

### C. Natural Deterioration of Agricultural Features

Although the Floodplain Ordinance exempts reasonable repair of agricultural features, it does not require reasonable repair of the features if/when they degrade or deteriorate over time. Unlike more recent improvements that have obtained written authorization which establishes a maintenance obligation, these features do not have an inherent enforceable maintenance requirement. As these features deteriorate over time, it is the prerogative of the owner to perform maintenance or let the feature fail over time. The Floodplain Ordinance does not provide authority for the District to require maintenance of these features.

### D. Threat to Downstream Neighbors, Owners Liability, and the Benefit of Advanced Planning

Although a maintenance requirement does not exist, the owner of a feature may be civilly liable for any damages that occur due to the failure of the feature during flooding. In order to guard from such liability, it should be in the interest of the owner to determine, in advance of a flood, if the feature should be maintained, modified, upgraded, or removed. The following criteria should be evaluated when making a determination:

1. Obsolescence - Whether the feature is necessary or if the property's use has changed since construction;
2. Proximity to development - If development is nearby, the potential for flood damage due to the feature or failure of the feature rises. Modifications to the feature to reduce flood damage potential such as upgrading all or part of the feature, selective removal of a portion of the feature to direct flow preferentially, or complete removal of the feature should be considered.
3. Lack of development - If the features are more remote, and development has not yet encroached, there is an opportunity to remove or modify the feature with minimal risk. When flood damage potential is low, the District may authorize such modifications with reduced requirements for demonstrating no adverse impact, thus incentivizing the removal of these features before they become a liability.

Where opportunities exist to reduce the likelihood of failure of a feature at a location with higher flood damage potential by removing the feature or selectively removing portions of the feature were flooding is less hazardous, the District highly recommends removal or breaching of the feature. Where development has not yet encroached, these actions are recommended prior to the arrival of downstream development. Please remember that any alteration of a feature requires an FPUP.

### E. Floodplain Use Permit Application Review

When reviewing FPUP applications, the District will determine the need for and extent of technical justification for the proposed activity after reviewing the following criteria:

1. Consideration of breaching the feature at the location(s) of an existing, remnant or historic channel(s) or flow path(s);
2. If channels or flow paths are not present, consideration of breaching the feature in a way that minimizes the potential for adverse downstream impact;
3. Consideration of the impact to downstream development, generally, based on the developments location and distance from the feature, and if the modification's effect on flow conditions normalize prior to impacting the development.
4. Consideration of damage to, or enhancement of riparian habitat as a result of an alteration

APPROVED BY:

  
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Date

Original Policy Approved:  
Date(s) Revised: