

Garnett Regional Detention Facility: A Success Story in Managing NAI with Competing Interests

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Everyone knows that economic development is vital to a community's long-term health. However, no matter how positive and worthwhile something can be, it can also have adverse impacts. The challenge that floodplain managers face is how to integrate commercial and residential development and other competing interests while maintaining a No Adverse Impact (NAI) approach. Even when a potential regional detention site will reduce hazard to lives and provide flood mitigation for downstream properties, competing interests emerge and must be addressed as a part of the planning and design process. The Garnett Regional Detention Facility represents a success story in which the design of the facility achieved that delicate balance between NAI and other competing interests.

The Garnett Regional Detention Facility is located in the City of Owasso, Oklahoma, a small community located approximately 11 miles northeast of Tulsa, Oklahoma. The city's rapid growth resulted in increased flooding to an existing residential neighborhood. The recommended alternative was to acquire property upstream of the neighborhood for the construction of a regional detention facility.

The Garnett Regional Detention Facility provides over 100 acre-feet of stormwater storage volume immediately downstream of a rapidly developing commercial district. Approximately half of its storage volume is reserved for flood mitigation downstream of the pond site resulting in reduced flow rates for all storm frequencies. The remaining storage will be used as fee-in-lieu of onsite detention to offset the impact of current and future development of 100 acres and to facilitate funding of the project. Because of this facility, a significant amount of upstream development can now occur with No Adverse Impact on the downstream floodway and floodplain.

The design considered other competing interests as well. These interests included obtaining an individual 404 Permit from the U.S. Army Corps of Engineers and a 401 Water Quality Certification from the Oklahoma Department of Environmental Quality. These permits required a mitigation plan including a substantial amount of wetland and native species plantings.

This case study discusses the technical and non-technical aspects of designing a regional detention facility balanced with NAI and other competing interests. In particular, the issues of downstream mitigation benefits, wetland mitigation, creative funding methods, public safety and stormwater quality are addressed.



Illustration above shows location of the Garnett Detention Facility. It provides over 100 acre-feet of stormwater storage volume immediately downstream of a developing commercial district.



Photograph above marks the beginning of construction during in 2010. Half of the pond's storage volume will serve for flood mitigation downstream of the pond site.

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