

Watershed Protection Ordinance: Overview of Potential Water Conservation Benefits

Background

In 2011, the Austin City Council [called for](#) a comprehensive set of revisions to Austin’s environmental and drainage protections. In October 2013, after two years of stakeholder input, the Austin City Council [passed Phase 1](#) of a new Watershed Protection Ordinance (WPO) with over 220 improvements to the Land Development Code. Key changes included new creek, erosion hazard, and floodplain protections.

Phase 2

Phase 2 of the WPO continues today to complete the work of the original Council resolution. The focus is on the [beneficial use of stormwater](#). Austin has required engineered water quality controls for new development since 1980. However, most projects are not required to infiltrate captured water into the soil (to maintain vegetation and creek health) or preferentially use “green stormwater infrastructure” (which use natural soil and vegetation systems to provide multiple benefits). WPO Phase 2 attempts to address these gaps, using the [example of many other states, municipalities, and the US EPA](#) as a guide. The common driver in these efforts is an attempt to maintain the hydrologic pattern (infiltration, storage, etc.) of a natural system. A natural hydrologic balance helps in numerous ways: maintaining creek baseflow, improving water quality, reducing erosion, and moderating flooding. An ancillary benefit of these approaches is that they may also significantly contribute to water conservation to reduce potable water demand. (Additional advantages include urban heat island moderation, air pollution control, carbon sequestration, and aesthetic improvement.) Common examples of green stormwater infrastructure designed to infiltrate water into the soil and/or store water for later use include rain gardens and rainwater harvesting systems, as shown in the examples below.



Rain Garden



Rainwater Harvesting

Impact on Water Supply

The storage of rainwater in soils and constructed systems (tanks, cisterns, etc.) represents a potential non-potable water source to reduce the need for water traditionally provided by potable water systems. The simplest use for the rainwater is for outdoor irrigation, although the stored water could potentially be used for indoor use also (e.g., to flush toilets or for cooling water, etc.). Infiltration and irrigation of rainwater on-site helps maintain trees and other vegetation (with their many environmental and social

benefits). And rainfall capture is especially useful in times of drought when potable water is restricted for outdoor use.

Watershed Protection Department (WPD) staff are working with community stakeholders in coordination with Planning & Development Review (PDR) and Austin Water staff on potential code changes to improve the way Austin manages its stormwater for beneficial uses. No proposal has been made at this time, and thus quantification of potential benefits must be made in generalized terms. Any benefits would be for land parcels that either redevelop (“greyfields”) or develop for the first time (“greenfields”). Thus, although the methods used might inspire voluntary implementation on existing developed properties, any new code would not apply retroactively to such lands. The measure would therefore largely serve to reduce the increase in potable water demand from Austin’s future growth rather than address existing demand from existing development.

The approaches used by other US cities and states vary. Some requirements ask that a portion of the water captured in engineered controls be infiltrated into soils (the extent depending on soil type). Others require the use of green stormwater infrastructure “to the greatest extent practicable.” In both cases, the result will be land development designed to infiltrate water into soils (rather than drained away off-site after treatment), thereby potentially reducing the need for potable irrigation. Austin’s water quality regulations require the capture of about 90 percent of average annual rainfall (about 32 inches annually). Depending on the footprint of development, the runoff generated, captured, and infiltrated and/or stored could be substantial. Done at a high level, it could represent a very large fraction—in some cases all—of annual outdoor water consumption. This, of course, depends on many factors; but the opportunity exists for many, if not most, new and redeveloped sites. Insight regarding the inspection and maintenance of these systems is a challenge and is also a focus of WPO Phase 2.

If you have further questions about WPO Phase 2, please contact Matt Hollon at (512) 974-2212 / matt.hollon@austintexas.gov or Erin Wood at (512) 974-2809 / erin.wood@austintexas.gov.