

# BILLINGSLEY MULTI-FAMILY SUSTAINABLE DEVELOPMENT

Billingsley is no stranger to sustainable building practices. We make every effort to create communities as green as possible by working towards Energy Star® efficiencies. While we recognize the obvious competitive advantages of green building such as lower construction and operating costs, long term value increases, and fostering healthy environments, green building also encompasses our company's philosophy. Sustainable building is about maintaining a worldwide and civic responsibility to the earth as well as future generations. At each of our communities — Thousand Oaks at Austin Ranch, The Neighborhoods of Cypress Waters, and The Boat House at Austin Ranch — we are committed to creating multi-family communities that will only improve with time.

## Design and Construction:

Framing standards — Using 2"x6" framing rather than 2"x4" to maximize insulation in order to reduce thermal energy waste; Utilizing open-web floor trusses and panel systems to maximize framing and minimize waste

Energy conservation — Creating more energy efficient homes for our residents

- Installing vinyl energy efficient windows
- Utilizing efficient HVAC design and installation, using non-CHFC refrigerants and programmable thermostats
- Integrating LED lighting on a portion of the light sources

Retention of green spaces — Select buildings are using structured parking to increase density and retain the natural landscape

Decreasing air pollutants — Using low VOC materials such as paints and adhesives to minimize off-gassing

Water efficiency — 20% reduction of baseline water use versus past protocols by using more efficient low-flow fixtures:

- 1.28 gallon per flush toilets over the standard 1.6 gallon toilets
- Flow rate of all lavatory faucets are under 2.0 gallons per minute
- ENERGY STAR labeled dishwashers that use 6.0 gallons or less per cycle

More efficient landscaping — Sustainable irrigation from non-potable water (details below)

Longer-lasting building materials — Building materials are a combination of brick and Hardie fiber cement materials — brick is a highly sustainable material, Hardie is more environmentally efficient and durable than wood

Recycling of construction materials — Recycling program planned and implemented for all phases of multi-family construction

New urbanist walkable environment — Bike paths and hike/bike trails throughout the development that will create an active park zone surrounding the lake and connect the trail systems of surrounding cities around Cypress Waters

## Austin Ranch: Non-Potable Irrigation

Billingsley Company has implemented several sustainable irrigation practices in the design of the master-planned community at Austin Ranch. We extract salty water from water wells and hold it in our ponds, which allows for some sodium and other minerals to evaporate. Once this water is used as irrigation, it is treated with a sodium buffer that allows it to be used in the landscape without adverse effects. This eliminates the use of domestic potable water for landscape uses on our sites and keeps us from utilizing this precious resource on landscaping.

Once this irrigation is applied to the landscape, through ground application to vegetation and diversion of drainage to water quality pools, we are able to reduce the total sodium volume, sediment, and mineral content prior to this water leaching down to the water table or accessing the watershed. This in turn improves the water quality before it hits our water shed and eventually becomes our drinking water source.

## Drainage stream mitigation in our developments:

With most of our multi-family developments we are planting mitigation plants (aquatics and marginal aquatics) in areas that are adjacent to drainage ways and along water edges. These plantings help improve water quality in the same capacity as our practices at Austin Ranch by acting as a sediment and nutrient filter prior to drain water hitting our watershed.

## High-efficiency irrigation monitoring systems:

We go the extra mile in installing irrigation control systems that have many conservation principles and water loss principles in mind:

- High tech controllers with web based controls, rain sensors, freeze sensors, flow meters that shut down the system on high flows, integrated controls through flow meter and master valves that protect water loss from times when we are not irrigating
- ET (evaporative transpiration) driven controllers — we track our daily ET rate for water loss and plant requirement to schedule our irrigation
- Computerized data output to monitor consumption vs. ET and data log our scheduled operations
- Testing soil moisture sensors to monitor moisture levels up to a depth of 5' below grade



## CYPRESS WATERS PLANT MITIGATION AND IRRIGATION FACTS

Over 1,400 trees have already been planted

Another 2,100 are scheduled, with over 1,050 planned by the end of this year

Over 500 of the trees already planted are cloned trees

Based on this rate, over 18,000 trees will be planted over the 25 year plan

Irrigation uses captured stormwater runoff in North Lake for distribution in a district-managed non-potable system

Water is distributed to both public and private parcels, and metered at each location for water use tracking

A holistic monitoring software for the property manages the irrigation system and can track usage and potential problems

## Plant Material:

- Plant selection primarily includes native species and drought tolerant plantings, with a minimization of high water-requiring plants
- Developed landscape standards as a Master Planned Developer for all master planned communities (Austin Ranch, Cypress Waters, Mercer Crossing)
- Always exceed tree mitigation requirements from municipality's development requirements by focusing on saving existing trees and exceeding requirement of new tree plantings
- Connection to green space in our communities through above average acreage of green space common area; connection to trail systems; master planning trail systems for connectivity with local municipalities, maintaining a natural setting for recreation while developing multifamily communities



Developed and managed by:

Billingsley