



Rain Garden – Instead of a traditional raised bed, these flower gardens are designed with a slight bowl shape to collect water. Rain gardens are typically

situated near a building or parking lot to collect stormwater from an impervious surface. After it is collected, water slowly penetrates the garden soil where microorganisms break down pollutants. Plant selection is extremely important in a rain garden, as plants must be able to stand the constant wet-dry cycle. Many native and adapted plants work well in these gardens.



Swale – This wide, flat bottomed channel will meander through the park directing water and reducing sheet flow. The grassy bottom of the

channel slows the water slightly allowing sediment to drop out. This is important because many pollutants are attached to these sediments and removing them in the swale stops them from entering our storm drain system, protecting Clear Creek and Galveston Bay.

Any of these features can be used by itself in a landscape. Putting multiple together in one park creates a treatment chain allowing more water to be captured and cleaned.

Park Amenities



Even with all of the special water conserving and clean features, the WaterSmart Park is first and foremost a park and will have many amenities available to the community. The Park will have a covered pavilion, a nature inspired play structure for children, restrooms, walking trails though historic oaks, a small outdoor classroom under a canopy of trees, and community gardens.

Research of the Park

Many of the landscape features discussed in this brochure have not been tried or tested in Galveston County. This park will also serve as a research laboratory. Researchers from Texas A&M University will collect data on each of these features and monitor how well they capture and clean stormwater. The results of this research along with information on cost of installation, effectiveness in cleaning water, and maintenance requirements will help determine which of these practices are best to use on the Texas Gulf Coast.

Sponsors



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What is a WaterSmart Park?



A Park that is constructed using the WaterSmart concepts.

WaterSmart is an approach to landscaping focused on three main principles:

1. Using native and adapted plants
2. Providing habitat for wildlife (birds, butterflies, pollinators)
3. Utilizing less water and requiring less maintenance

These principles can be applied to any landscape be it home, commercial or park.

Cleaning Stormwater

The new park will include special features to capture and treat stormwater. Whenever it rains, the water that does not soak into the ground, but instead runs across the land and impervious surfaces (such as roofs, roads and parking lots) is called stormwater. Stormwater picks up debris and pollutants as it flows. These pollutants include trash, excess nitrogen and phosphorous from over fertilizing yards, and dog waste that has not been picked up. All of these pollutants travel in the water along our roadways, ditches and culverts into our creeks and bayous.



Green Roof – Roofs of buildings and other structures are impervious surfaces where water runs off. However, a roof can be designed to have a landscape on top of it. Layers of rubber membrane prevent damage to

the roof structure then a special soil mix is prepared and layered on the roof followed by plants and mulch. Special care is taken when designing the structure so that the roof can withstand the extra weight especially as the soil absorbs water during a rain.



Rainwater Harvesting - The roof of the park pavilion is an impervious surface so when it rains the stormwater flows off. This water will be captured and held in a cistern or tank. Between rain storms, this water will be used to water habitat landscapes. Capturing and holding the water keeps it from running, instead when it is used to irrigate on dry days, the water can soak into the ground where organisms in the soil can break down pollutants into harmless compounds.

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WaterSmart Park Conceptual Design by TBG Inc.



Pervious Pavement – Most parking lots are made of concrete or another material that water cannot penetrate. Conversely, pervious pavement allows water to percolate through the pavement into an underground drain. This reduces the amount of sheet flow across the parking lot and the amount of pollutants picked up by the water. The underground water can be stored and used for irrigation or it can move into the storm drain system.



Vegetated Buffer – a strip of vegetation along a stream bed or property edge offers one last chance to slow and clean water running across a property before it reaches a ditch or stream.