



# TOWARD A SUSTAINABLE DALLAS



City of Dallas  
BUILDING INSPECTION DEPARTMENT

# Green Building Task Force

Established in **December of 2007** with members from the residential and commercial sectors:

American Institute of Architects  
North Texas Homebuilder's Association  
The Real Estate Council  
QUOIN  
Hispanic Contractor's Association  
US Green Building Council - North Texas Chapter  
Dallas Independent School District  
Urban Forest Advisory Committee  
Other Industry & business leaders, and  
City Staff

**Developed recommendations for:**

- Components of the green building program
- Implementation steps
- Training and education programs for the building industry



## **Envisioned Future**

**“Dallas is Carbon Neutral by 2030 and is the Greenest City in the US”**

### **Program Goal**

**To improve air quality, reduce water use and improve transportation and land use through green building strategies**

### **First Milestone**

**From the US Mayors Climate Protection Agreement, achieve a 7% reduction in greenhouse gas emissions from 1990 levels by 2012**



## Greenest City in the US

Means that best practice green building strategies are standard in all design and construction projects in Dallas.

Existing building stock is systematically improved

Dallas and the north Texas region enjoy good air quality and have met the 8-hour standard for ozone

Dallas green building program serves as a model for other communities



# Carbon Neutral by 2030

Will require City to measure all energy usage

## **Carbon Neutral by 2030 means:**

Reducing current **building** energy use in Dallas City limits by **50%**

Can be accomplished by new building design efficiency, and

Existing building systematic retrofit and improvement

Encouraging fuel switching and renewable fuels- **40%**

Sequestration, trading and (REC's) - **10%**

Data collection will be critically important in the next few years



# Strategies for Implementation



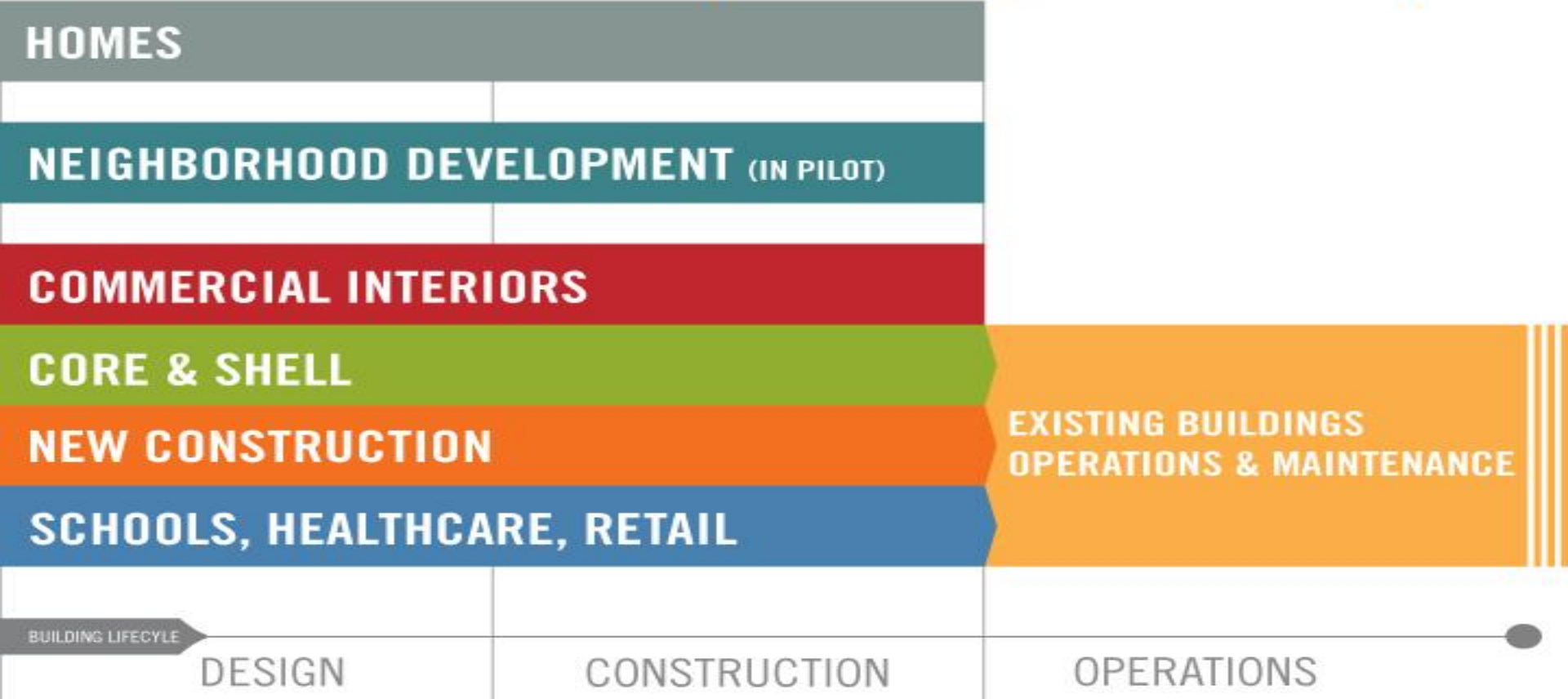
**Stands for:  
Leadership in Energy &  
Environmental Design**

A system for designing, constructing, operating and certifying green buildings.

A product of the US Green Building Council



# LEED address the complete lifecycle of buildings:



BUILDING LIFECYCLE

DESIGN

CONSTRUCTION

OPERATIONS



# LEED



## Site planning

- Development Density and community connectivity
- Restore habitat
- Maximize Open Space
- Storm water management
- Limited irrigated landscape
- Alternate Transportation
- Reduce Heat Island Effect

## Water efficiency

- More efficient fixtures
- Water re-use



# LEED



## Energy efficiency

Alternate energy sources

High performance building enclosure (walls and roof)

Ozone protection

Building orientation to minimize heat gain

Less operating energy required

Downsize air conditioning and heating systems



# LEED



## Conservation of materials

- Source reduction and waste management
- Use recycled materials
- Ability to reuse
- Locally procured
- Occupant recycling



## Indoor environmental quality

- Control and efficiency
- Infiltration and air exchange
- Tobacco smoke control
- Sustainable cleaning products
- Day lighting and views



# Green Built North Texas



**Greenbuilt's** resource-efficient, green homes follow guidelines set forth by the Home Builders Association's Green Built North Texas program.

These guidelines address strategies for improving energy efficiency, water efficiency, indoor air quality, material usage, site management, waste recycling and cleaner electricity.



# Energy Star

## Features of a Qualified Homes

Effective Insulation

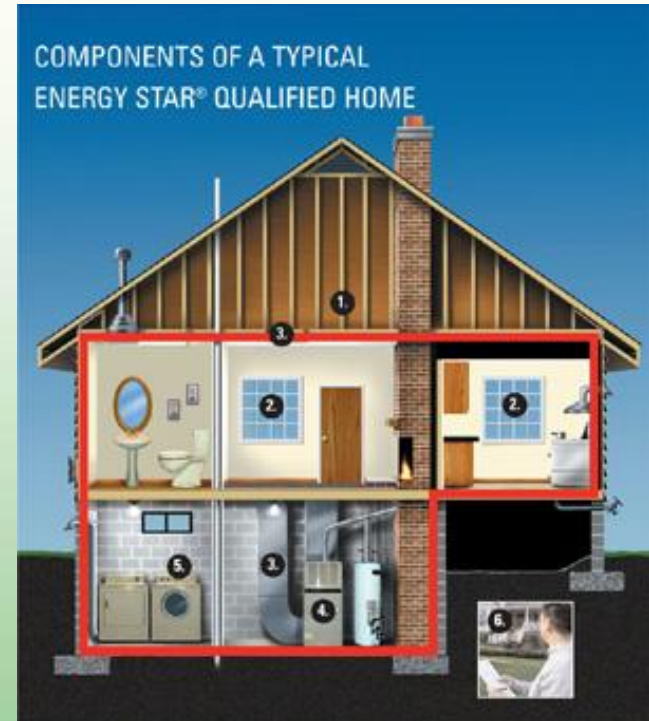
High-performance windows

Tight construction and ducts

Efficient Cooling and Heating Equipment

Lighting and Appliances

Third Party Verification



# Green Building Task Force

## Summary

The Task Force recommended a **two-phase** implementation strategy for the Green Building program

Solution **must** be market-based

Program adopted **unanimously** by the City Council on April 9, 2008



## Phased Program

Phase 1 — **effective October 1, 2009**

Energy efficiency and water conservation requirements for all new residential and commercial developments

Phase 2 — **effective October 1, 2011**

Comprehensive green building standard requirement for all new construction



## Mandatory Measures Effective **Oct. 1, 2009**

**15%** higher energy efficiency than the 2006 International Energy Conservation Code (IECC)

Meet at least **four** of the following water reduction requirements:

1. The average flow rate for all lavatory faucets must be **2.0** gallons per minute
2. The average flow rate for all showerheads must be **2.0** gallons per minute
3. The average flow rate for all toilets must:
  - 3.1. be **1.3** gallons per flush;
  - 3.2. be dual-flush and meet the requirements of ASME A112.19.14; or
  - 3.3. meet the United States Environmental Protection Agency WaterSense specification and be certified and labeled accordingly.
4. ENERGY STAR labeled dishwasher that uses **6.0** gallons or less per cycle
5. ENERGY STAR labeled clothes washers with modified energy factor (MEF)  $\geq$  **2.0** and water factor (WF)  $<$  **5.5**
6. Utilize drip irrigation emitters for all bedding areas of the landscape plan



Requires submittal of a checklist from a selected green building standard

LEED, GreenBuilt north Texas or approved equivalent  
Minimum number of points or certification not required

15% energy efficiency as proven by:

IC3 – Energy Systems Lab, Inc. certificate  
HERS index of 85, or

Alternatively, to prove that the 15% requirement has been met, builders can use the following standards for compliance:

ENERGY STAR  
Green Built North Texas  
LEED H ,or  
Approved equivalent standard



New Commercial  $\leq$  50,000 sf

**Mandatory Measures Effective Oct. 1,  
2009**

**15%** higher energy efficiency than Energy Code (2006 IECC)

**14%** if using LEED for compliance

Water use **20%** reduction over EPA Act 1992 baseline

Cool Roofs for slopes **2:12** or less to meet EPA ENERGY STAR

Outdoor Lighting restriction



## Outdoor Lighting Restriction

For the lighting of predominantly horizontal surfaces

Roadways, loading docks, cul-de-sacs, active and passive recreational areas, building entrances, sidewalks, paths, site entrances and parking areas

Fixtures shall be aimed straight down and shall be full cutoff or fully shielded

Maximum lamp wattage of 250 watts for commercial lighting, 100 watts incandescent, and 32 watts compact fluorescent for residential lighting



## New Commercial > 50,000 sf

**85%** LEED certified level compliance under any of the applicable LEED rating systems or equivalent (ex. must achieve at least **22** LEED NC v2.2 points, **20** LEED CS, **22** LEED for Retail, **25** LEED for Healthcare, **25** LEED for Schools, or **38** LEED for Homes points)

Points required must include:

**1** point under the water efficiency credit titled “Water Use Reduction (**20%** Reduction)”

A minimum of **2** points (**14%** better than ASHRAE 90.1-2004) under the energy and atmosphere credit titled “Optimize Energy Performance”

Require building owners to agree to utility companies releasing annual consumption data to City



## Phase 2 New Construction

### **Mandatory Measures Effective Oct. 1, 2011**

### **All New Residential Construction**

All proposed projects must be **LEED H-certifiable**, **Green Built North Texas-certifiable**, or meet an equivalent minimum green building standard certified level

**Points required for LEED H-certifiable must include:**

**1** point under the water efficiency credit titled “Indoor Water Use”

A minimum of **4** points (performance of ENERGY STAR for homes with a HERS rating of **83** or less) under the energy and atmosphere credit titled “Optimize Energy Performance”



## Phase 2 New Construction

### All New Commercial Construction

All proposed projects must be **LEED-certifiable** or certifiable under an equivalent green building standard at the minimum certification level

**Points required for LEED certifiable must include:**

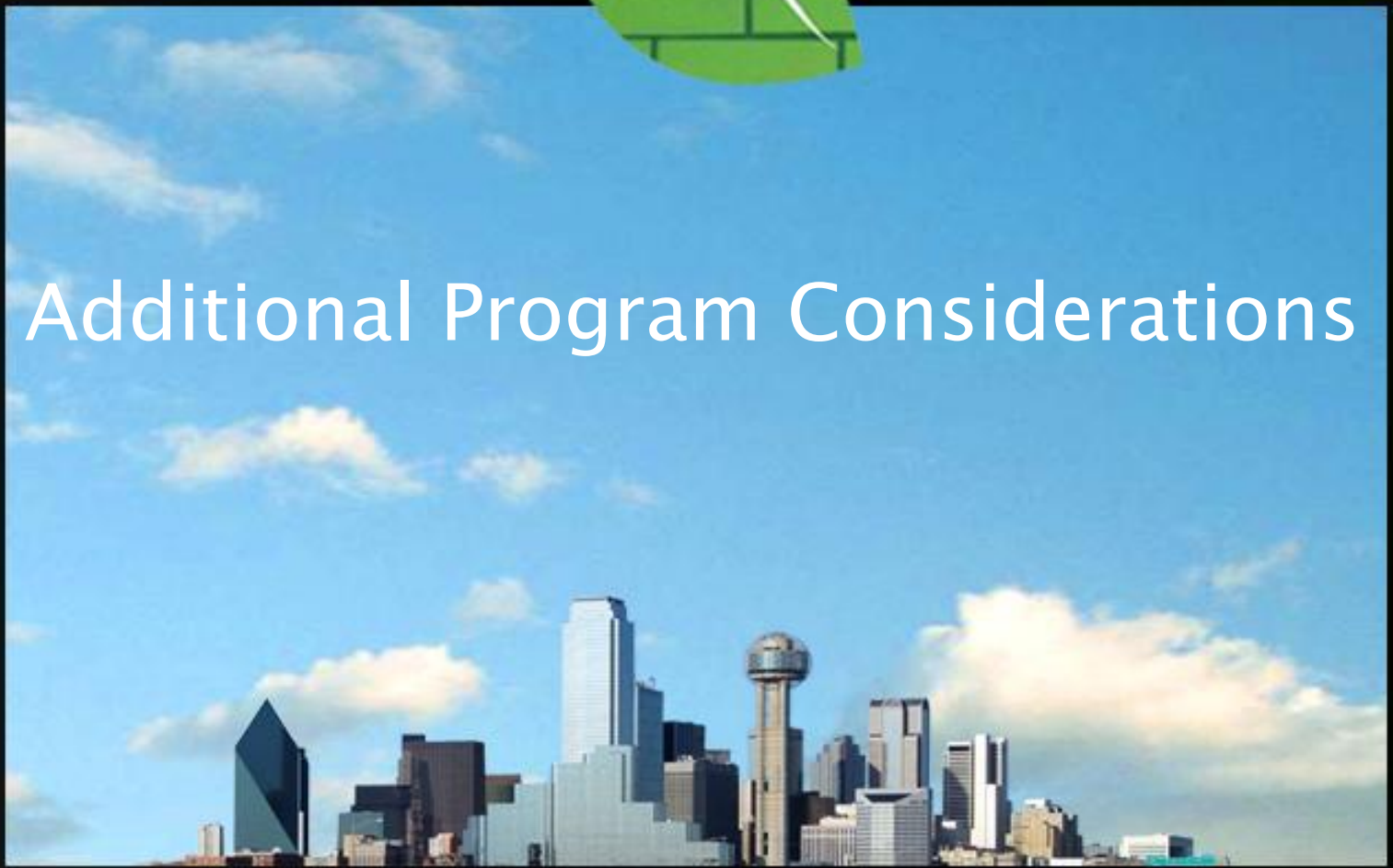
**1** point under the water efficiency credit titled “Water Use Reduction (**20%** Reduction)”

A minimum of **3** points (**17.5%** better than ASHRAE 90.1-2004) under the energy and atmosphere credit titled “Optimize Energy Performance”





# Additional Program Considerations



# Water Recycling/Efficiency

Reusing condensate is permitted in Dallas Code  
Must be separated from City water supply  
Must be labeled

Gray water systems for use in:  
Landscaping irrigation  
Reuse for non-potable water uses

Waterless Urinal applications are permitted



# Alternate pavement materials



Permeable (porous) pavement applications are allowed in Dallas Code

- Gravelpave and Grasspave are acceptable engineered products

## Solar permitting

Currently evaluating guidelines to streamline/determine review process

Reduce permitting fees through reduction of equipment valuation requirements and include plumbing, electrical and structural reviews



# Integrated Storm Water Design Criteria

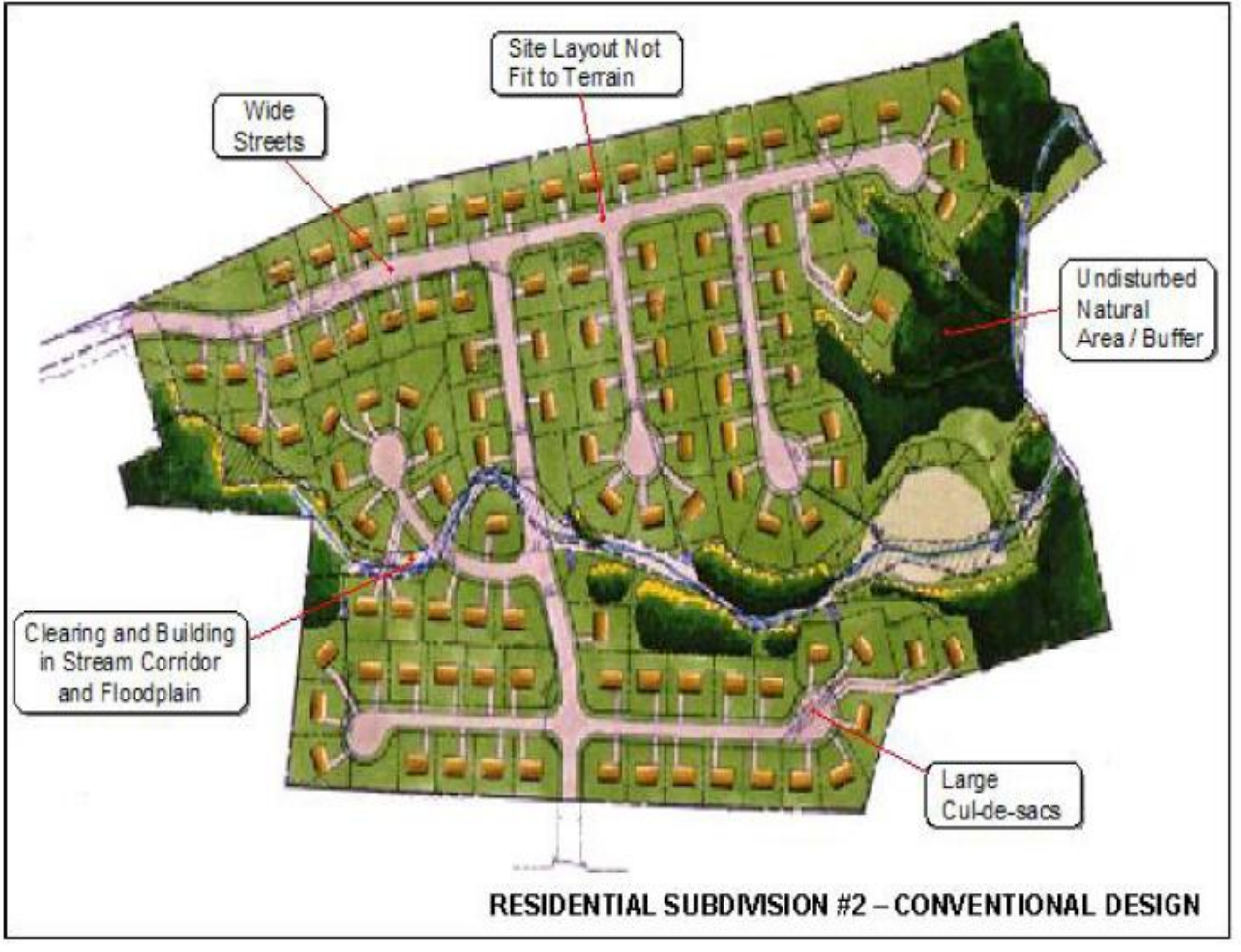
## 3 Fundamental Goals of iSWM™

*integrated* Storm Water Management™

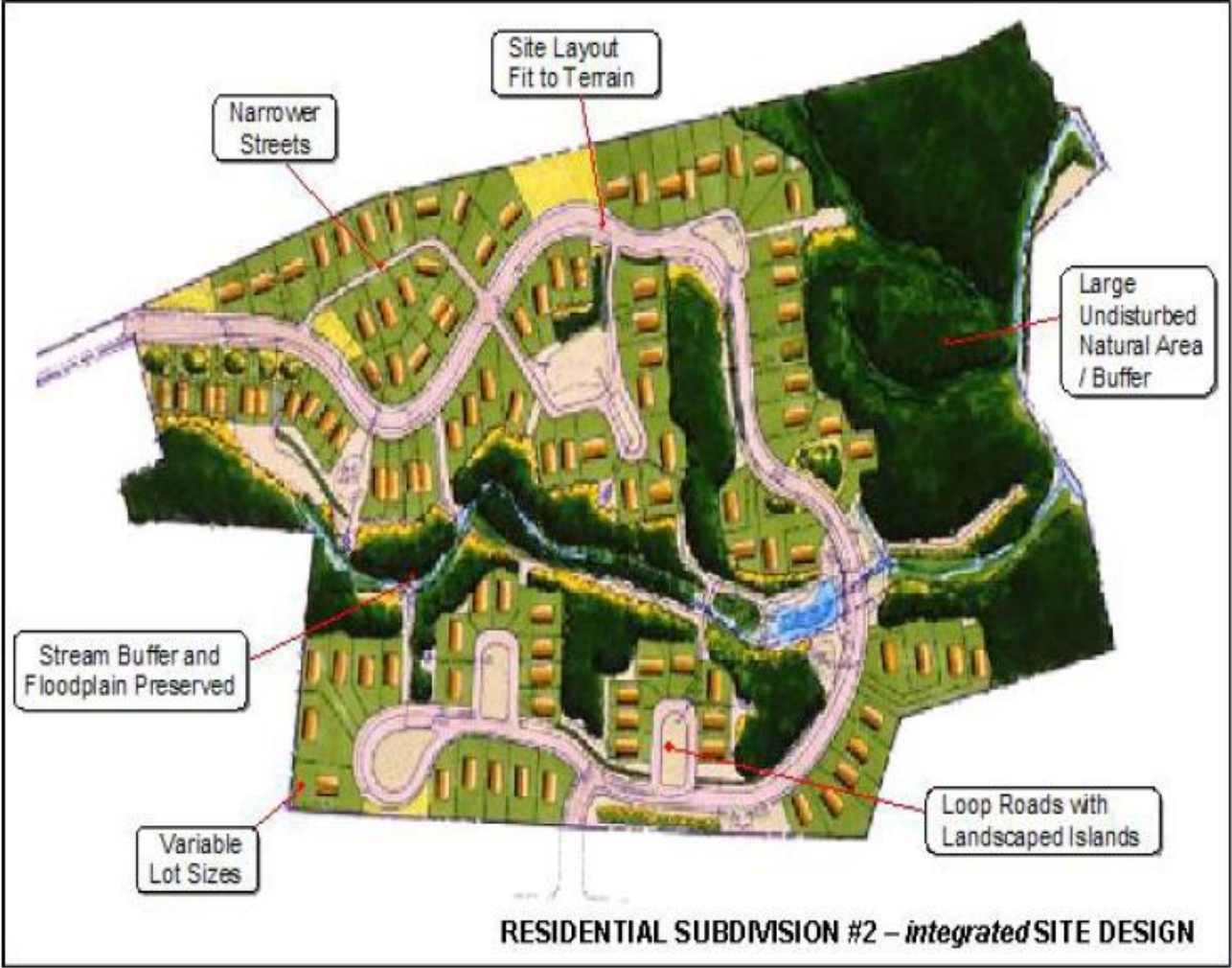
- Water Quality Protection
- Streambank Protection
- Flood Control



# Conventional Site Development



# Integrated Site Development



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