

# Open Space Residential Design

## OSRD



**Smart Growth / Smart Energy Toolkit**



**Sprawl development covers  
natural open space.**



**Wasted linear miles of asphalt,  
piping and utilities**

## Sprawl Development Maximizes Cost of Infrastructure



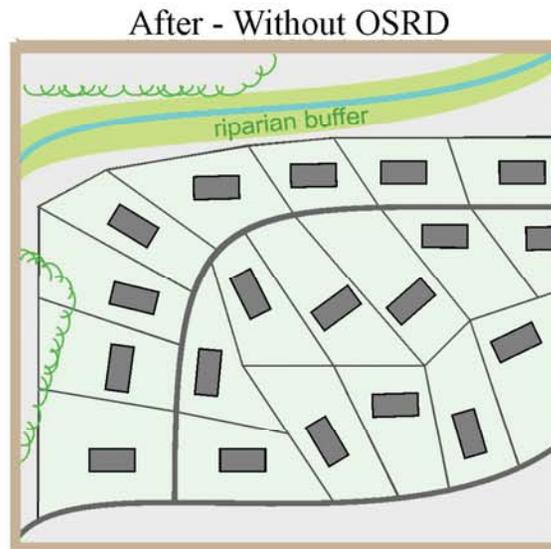
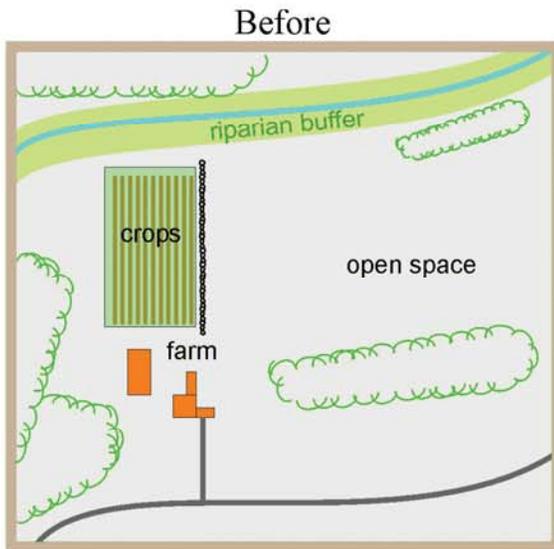
**Six houses here require long driveways, separate wells for water supply and independent septic systems.**

**Berkshire County**

**OSRD is a form of subdivision design that maximizes resource protection and optimizes the use of space.**

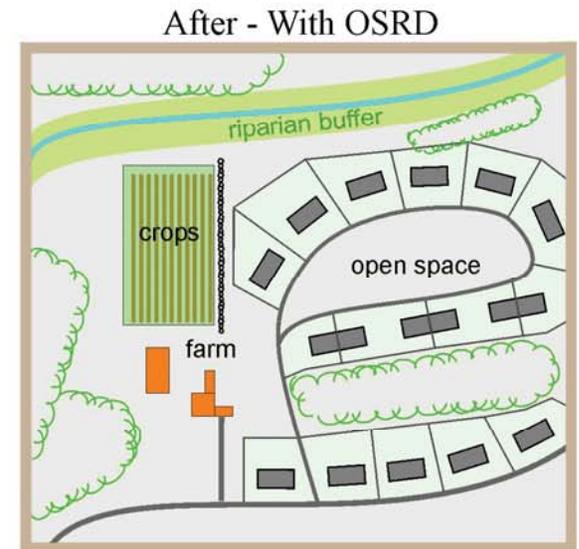
## The Problem

**Loss of Open Space**



## The Solution

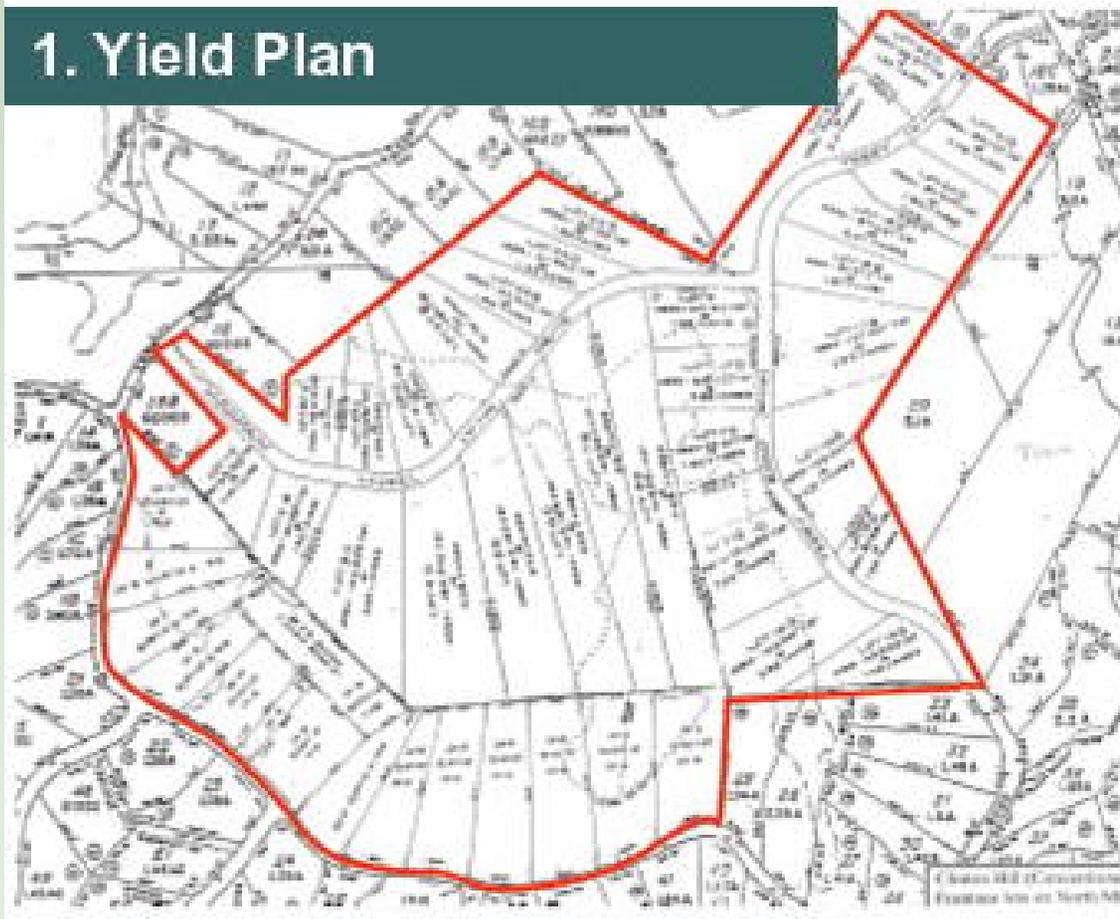
**Smart Development**



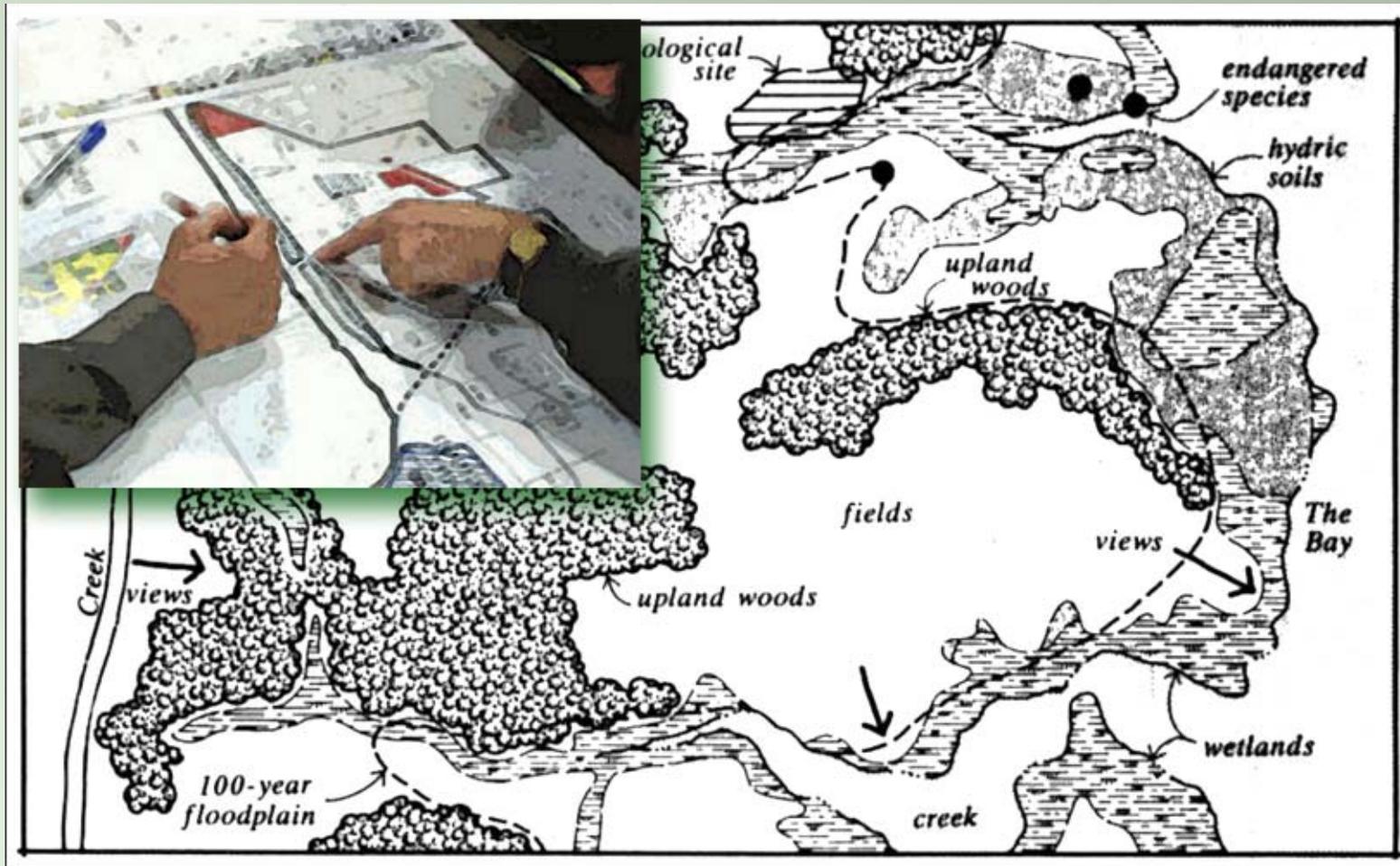
**OSRD provisions promote design flexibility related to minimum lot size, setbacks and frontage and can help streamline the permitting process.**

**THE YIELD PLAN:** The maximum number of lots achievable under conventional Zoning Bylaw provisions and Subdivision Rules and Regulations. The contents of this plan are similar to those of a Preliminary Subdivision Plan.

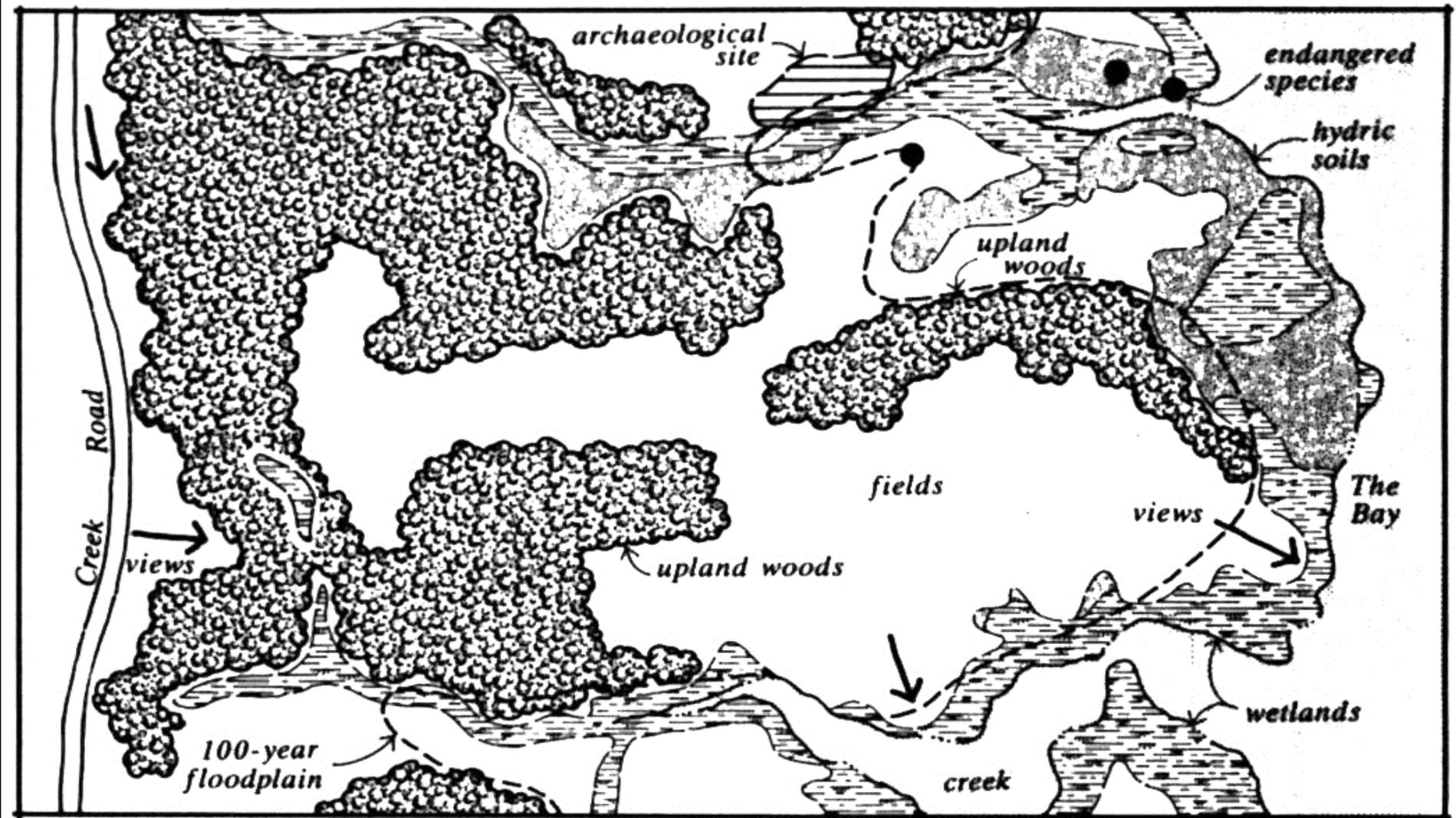
## 1. Yield Plan



**AFTER THE YIELD IS CALCULATED, THE FOUR-STEP OSRD DESIGN PROCESS FOLLOWS:**



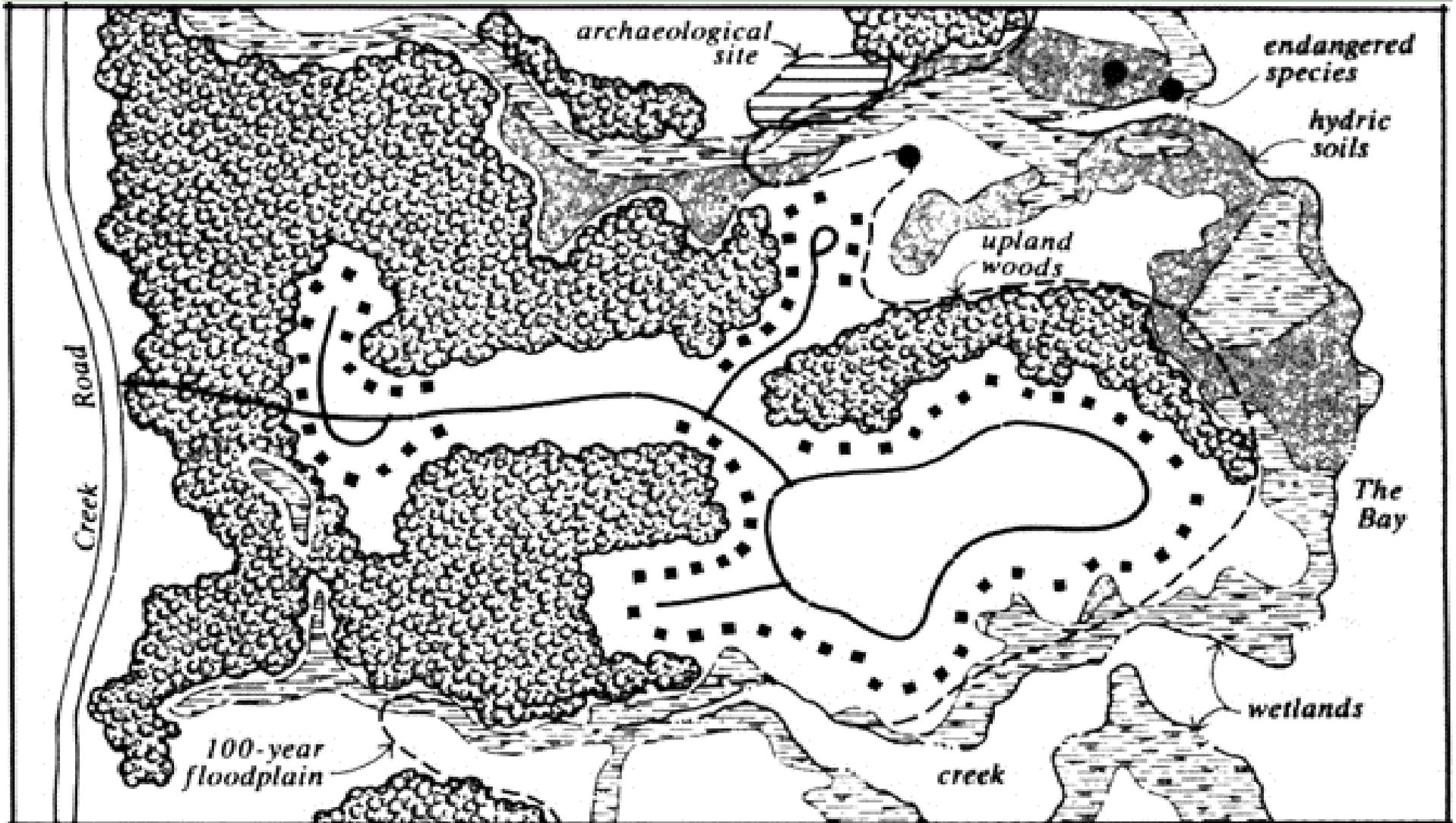
1. Identify Conservation Value Areas on the site such as wetlands, significant trees or tracts of forest, steep slopes habitat, cultural resources or buffer zones. Remove these from the “developable area”.



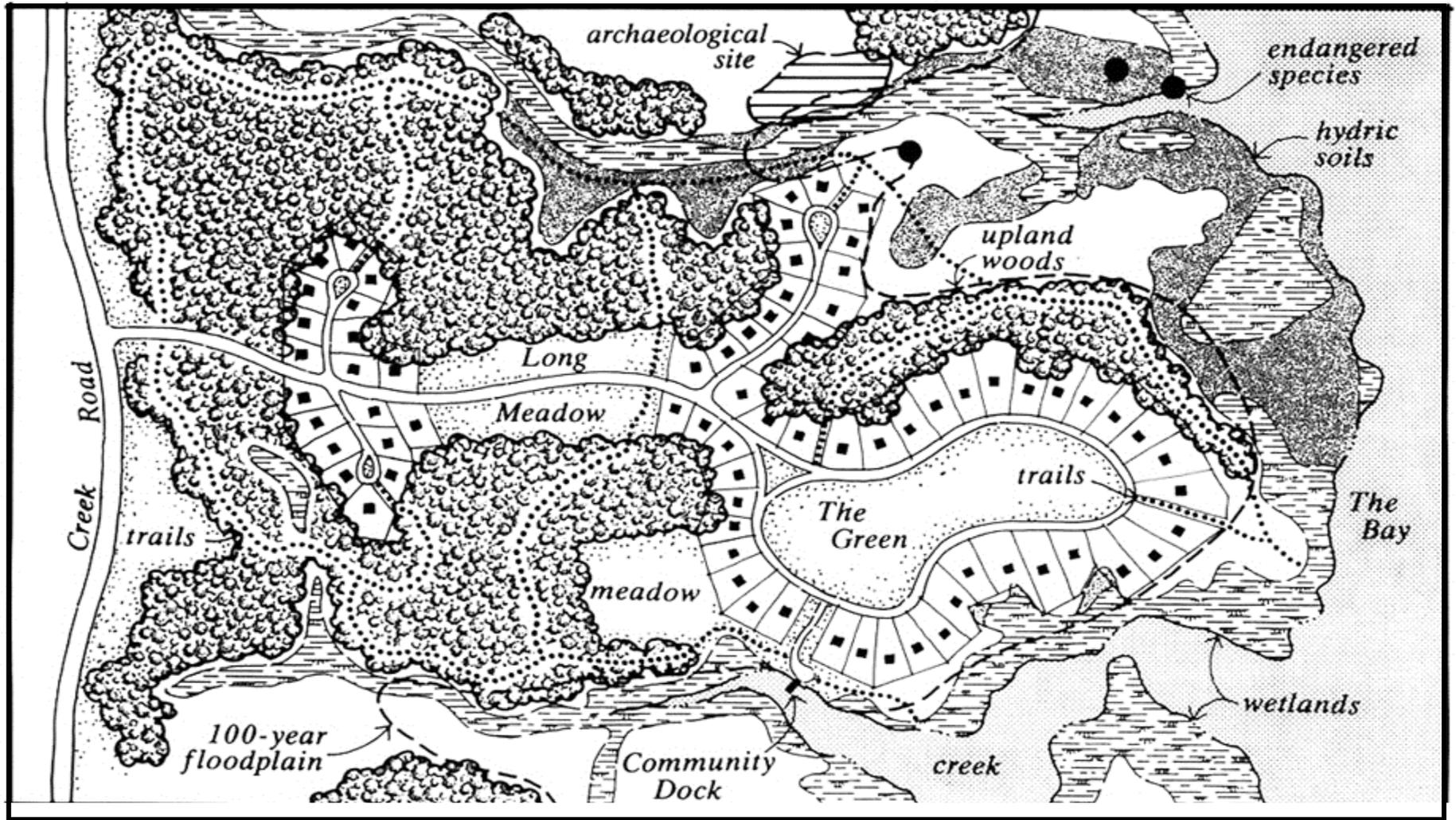
2. Place houses in the remaining area in a way that would maximize residents enjoyment of these areas by providing access to open space and preserving views.



3. Align roads and trails on the site to provide pedestrian and vehicle access.



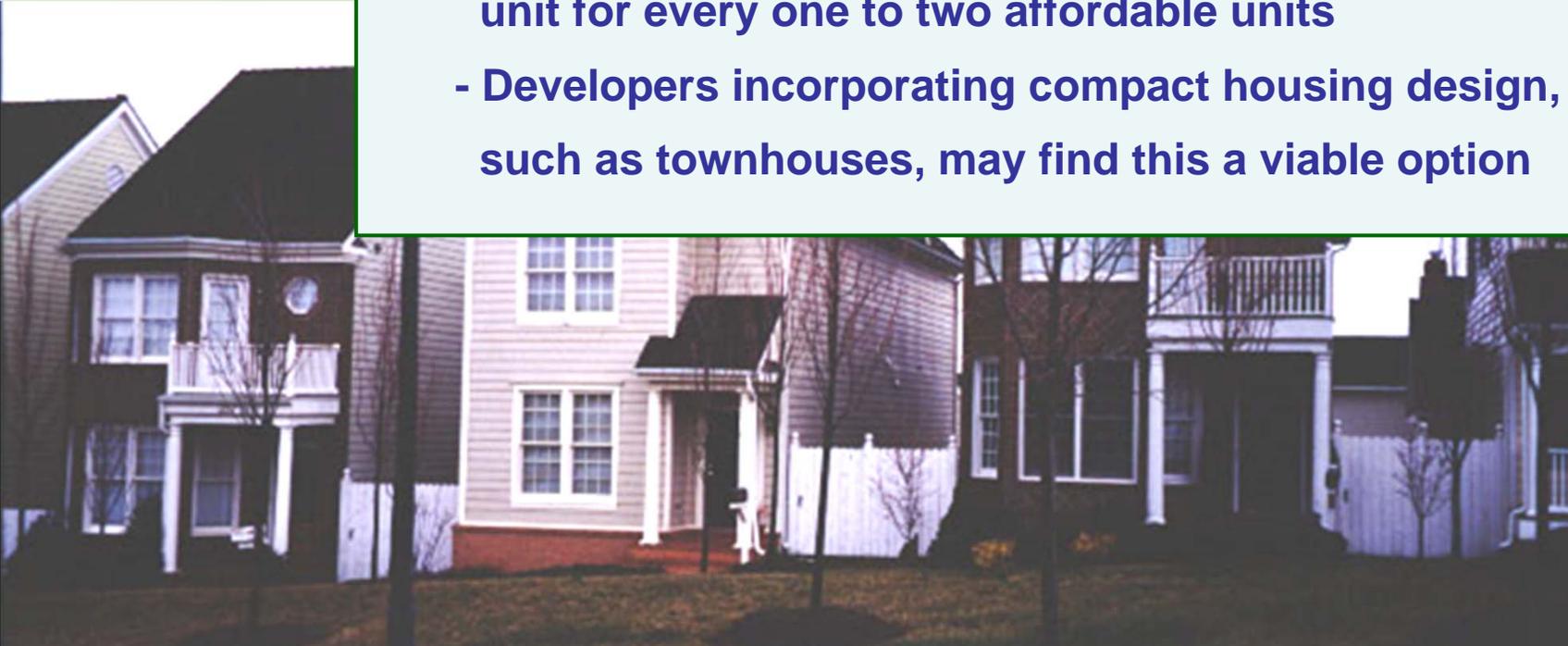
4. Draw lot lines around the homes.



## COMMON DENSITY BONUSES

### **Affordable Housing**

- **Communities may offer bonuses beyond the site yield if developers include affordable housing in their proposal**
- **Common provisions are on additional market rate unit for every one to two affordable units**
- **Developers incorporating compact housing design, such as townhouses, may find this a viable option**



## COMMON DENSITY BONUSES

### Historic Structures

- Communities with historic homes on farms or other large tracts of land may offer bonuses to developers who preserve these structures.
- Rehabilitation of existing structures may prove to be a good investment if additional market rate units result from these efforts.



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## COMMON DENSITY BONUSES

### **Increased Open Space**

- OSRD Bylaws may have a minimum percentage of protected open space for a site such as 50%.
- Bylaw provisions may offer density bonuses for proposals that offer significant percentages beyond the minimum.
- Developers should carefully examine the flexible dimensional regulations of the bylaw to see if they can possibly gain more open space towards a density bonus.

## COMMON DENSITY BONUSES

### **Amenities to the Community**

- OSRD Bylaws may have provisions where housing units may be increased if a clear amenity is provided to the community as part of the development.
- Developers facing this provision should be creative and consider such options as cluster wastewater systems, recreational facilities, public access to open space areas, pedestrian or bicyclist improvements, etc.

## **BENEFITS of OSRD**

### **For Residents and Local Officials**

- **Streamlines plan review process; reduces time and costs**
- **Adds valuable amenities that can enhance marketing and sale prices**
- **Increases resale value; homes in OSRD subdivisions have shown to appreciate faster than those in conventional subdivisions**
- **Decreases site development costs by designing with the terrain**

## **BENEFITS of OSRD**

### **Social, Recreational, and Economical**

- **Reduces isolation and sprawl**
- **Enhances New England/local community character**
- **Promotes community involvement**
- **Provides neighborhood connections with an interconnected network of trails and open space**
- **Reduces municipal infrastructure and maintenance costs**
- **Can be combined with 40B, the Local Initiative Program, to be an alternative to comprehensive permit to achieve affordable housing accreditation**

## **BENEFITS of OSRD**

### **Environmental**

- **Protects unique or fragile habitats**
- **Reduces the pollution impacts of stormwater runoff**
- **Promotes aquifer recharge**
- **Provides opportunities to link wildlife habitats**
- **Conservation values are part of the planning process**
- **Can further goals of open space and community development plans**

**The planning process for OSRD inherently protects natural resources and promotes recharge to underlying aquifers.**

## **BENEFITS of OSRD**

### **For the Developer and Realtor**

- Streamlines plan review process; reduces time and costs
- Adds valuable amenities that can enhance marketing and sale prices
- Increases resale value; homes in OSRD subdivisions have shown to appreciate faster than those in conventional subdivisions
- Decreases site development costs by designing with the terrain



**The OSRD permitting structure encourages smart growth and facilitates a permitting process that is clear, easy to understand, and cost-effective to developers.**

## **BENEFITS of OSRD**

### **Values Identified by OSRD Developers**

- 1) Reduced roadways and infrastructure**
  - a) Roadway construction costs are in the \$400 - \$600/ft range.
  - b) Less roadway = Less impervious surface = less infiltration makeup areas.
- 2) Less impacts on wetlands**
  - a) Minimal wetland impacts = less wetland replication areas and expensive crossings.
  - b) Less time and risk in front of Conservation/DEP
- 3) Reduced lot areas and setbacks = cost savings on driveways and landscaping**
- 4) Time – geographically condensed construction is easier to manage**
- 5) Pride – OSRD plans are just more socially responsible**
- 6) Sales advantages often include trail systems, open space, and social community**

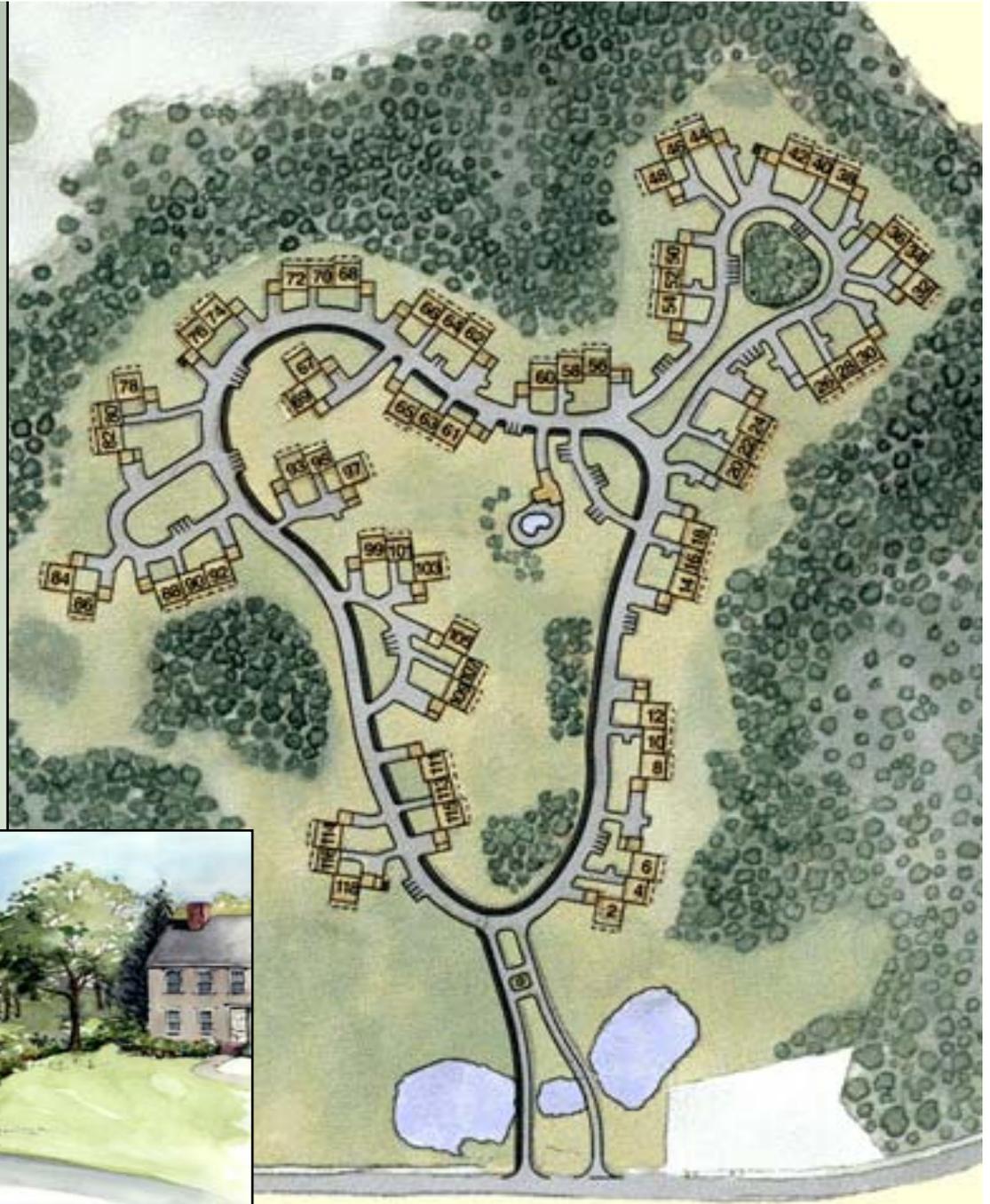
# CASE STUDY

## Caldwell Farm

### Newbury, MA

Caldwell Farm is a 66-unit housing project, 100 of the 125 acres being maintained as open space.

Compact design required far less pavement and utility construction when compared to a convention plan with the same number of units.



## CASE STUDY

### Partridgeberry Place, Ipswich, MA



### Open Space and Landscape Preservation Development



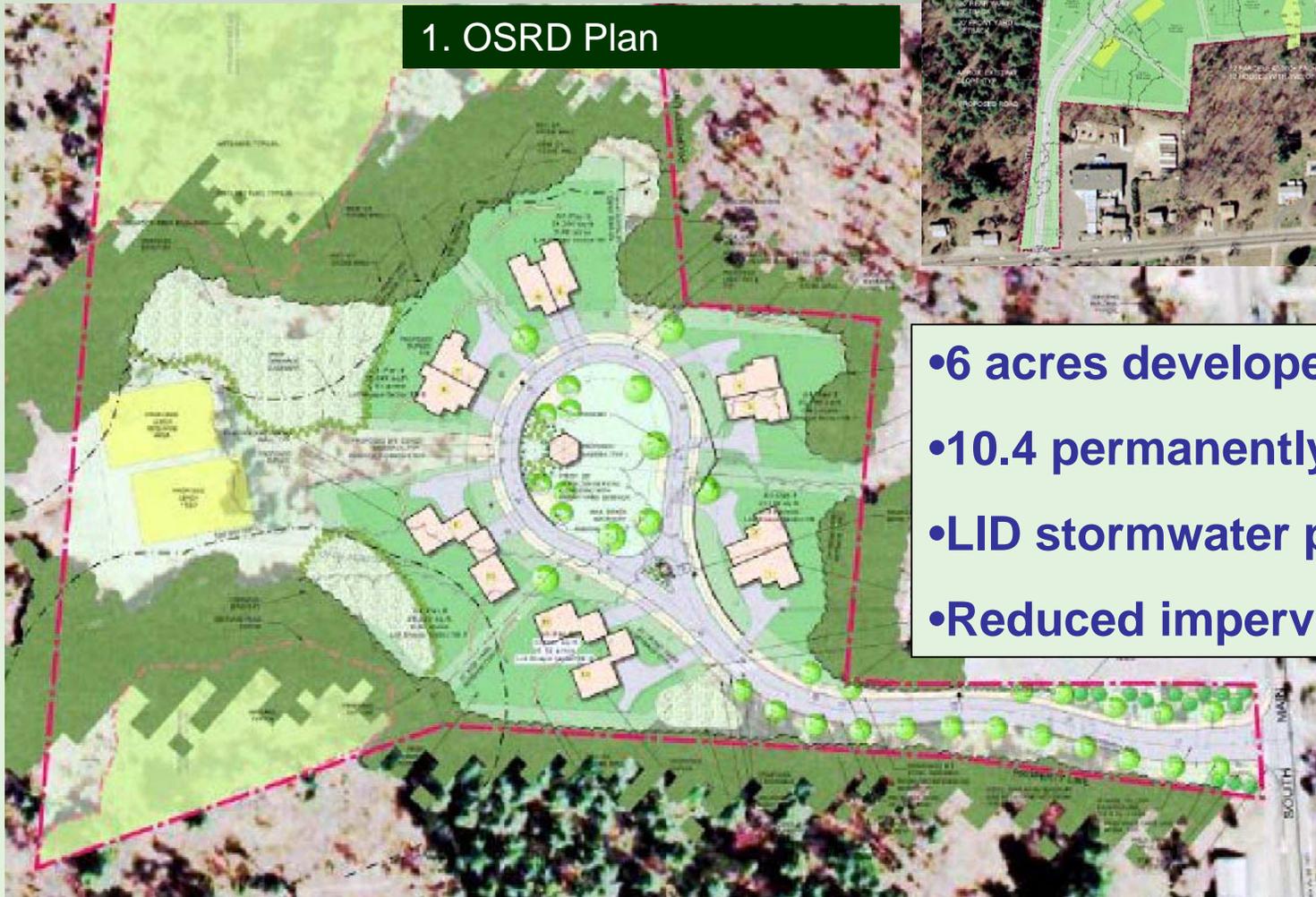
# CASE STUDY

## Woodbury Ridge Bellingham, MA

1. Conventional Plan



1. OSRD Plan



- 6 acres developed
- 10.4 permanently preserved
- LID stormwater practices
- Reduced impervious surfaces

## USEFUL LINKS:

[www.state.ma.us/czm/smartgrowth/](http://www.state.ma.us/czm/smartgrowth/)

Massachusetts Office of Coastal Zone Management (CZM) is a founding Green Neighborhoods Alliance member and has actively promoted open space residential design along the coast and in coastal watershed communities.

[www.csc.noaa.gov/magazine/2006/02/article1.html](http://www.csc.noaa.gov/magazine/2006/02/article1.html)

"*Planning for Open Space*": A NOAA Coastal Services Center article about Massachusetts OSRD and the Green Neighborhoods Alliance.

[www.mass.gov/czm/smartgrowth/publications/green\\_neighborhoods\\_brochure.pdf](http://www.mass.gov/czm/smartgrowth/publications/green_neighborhoods_brochure.pdf)

A brochure explaining the benefits of OSRD

[www.natlands.org/categories/subcategory.asp?fldSubCategoryId=26](http://www.natlands.org/categories/subcategory.asp?fldSubCategoryId=26)

Natural Lands Trust web page, entitled "Growing Greener: Conservation by Design"

[www.mapc.org/regional\\_planning/Developing\\_Local\\_Bylaw.pdf](http://www.mapc.org/regional_planning/Developing_Local_Bylaw.pdf)

"The Conservation Subdivision Design Project" by the Metropolitan Area Planning Council

[www.dem.ri.gov/programs/bpoladm/suswshed/pdfs/condev.pdf](http://www.dem.ri.gov/programs/bpoladm/suswshed/pdfs/condev.pdf)

"The Rhode Island Conservation Development Manual: A Ten step Process for the Planning and Design of Creative Development Projects" from the RI Department of Environmental Management, Sustainable Watersheds Office

## **USEFUL LINKS:**

[www.landchoices.org/](http://www.landchoices.org/)

A national non-profit organization is working to reach landowners and provide them with land preservation choices BEFORE they make that fateful decision to subdivide their land for conventional subdivision development.

[www.mapc.org/regional\\_planning/CSD.pdf](http://www.mapc.org/regional_planning/CSD.pdf)

*“Open Space Residential Development: Four Case Studies”* by the Metropolitan Area Planning Council

[www.csc.noaa.gov/alternatives/](http://www.csc.noaa.gov/alternatives/)

*“Alternatives for Coastal Development: One Site, Three Scenarios”*, NOAA

[www.mass.gov/czm/coastlines/2006/smart\\_growth/grass\\_green.htm](http://www.mass.gov/czm/coastlines/2006/smart_growth/grass_green.htm)

*“The Grass Is Greener in an Open Space Residential Development”*, an article in CZM’s publication “Coastlines”

[www.nahbrc.org/greenguidelines/userguide\\_site\\_innovative.html](http://www.nahbrc.org/greenguidelines/userguide_site_innovative.html)

*“Model Green Home Building Guidelines”* from the National Association of Home Builders, a practical nationally recognized baseline for resource-efficient, cost-effective home building

[www.dem.ri.gov/programs/bpoladm/suswshed/pdfs/condevbr.pdf](http://www.dem.ri.gov/programs/bpoladm/suswshed/pdfs/condevbr.pdf)

*“Rhode Island Conservation Development Brochure”* summarizing the main points of the Conservation Development Manual