

SMART GROWTH/SMART ENERGY TOOLKIT OVERVIEW



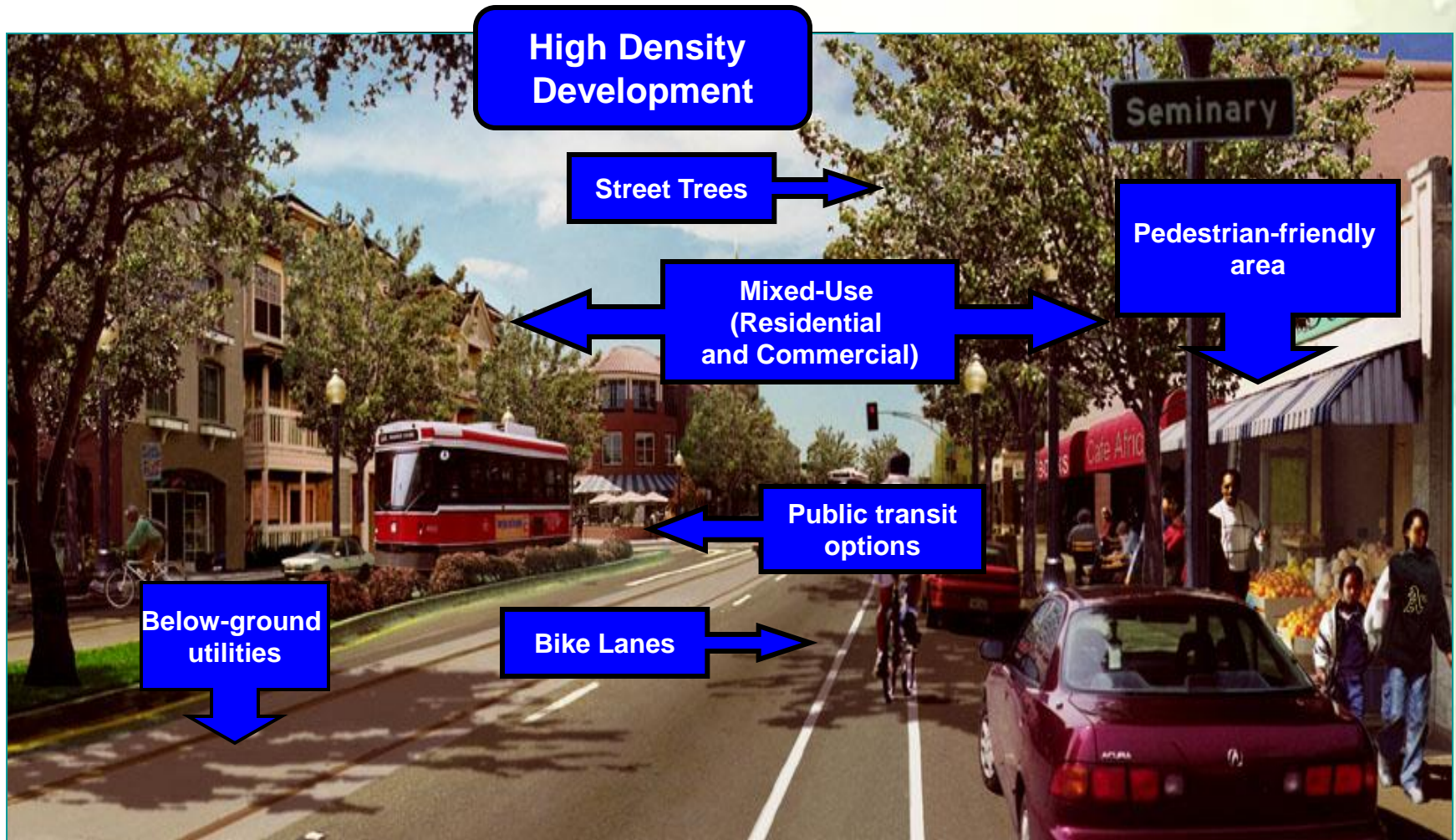
Smart Growth/Smart Energy Toolkit

Second Edition – 2007

Produced by the MA Executive Office of Energy and Environmental Affairs



Sprawl Versus Smart Growth Streetscapes



Smart Growth/Smart Energy OVERVIEW

Smart growth/smart energy is a series of development and planning techniques and strategies that protect natural resources, save energy, enhance quality of life, create housing choices, and improve municipal finances by taking into consideration location, design, and long-term costs of growth.

Smart Growth/Smart Energy Toolkit Modules

- Accessory Dwelling Units (ADU)
- Agricultural Preservation (AP)
- Brownfields Reuse
- Business Improvement Districts (BID)
- Chapter 40R
- District Improvement Financing (DIF)/ Tax Increment Financing (TIF)
- Environmental Justice (EJ)
- Form Based Codes (FBC)
- Inclusionary Zoning (IZ)
- Low Impact Development (LID)
- Mill Revitalization Districts (MRD)

Smart Growth/Smart Energy Toolkit Modules

(continued)

- Open Space Residential Development (OSRD)
- Outreach and Education
- Smart Energy
- Smart Parking
- Traditional Neighborhood Development (TND)
- Transfer of Development Rights (TDR)
- Transit Oriented Development (TOD)
- Wastewater Alternatives
- Water Resource Management
- Wind Power
- Zoning Decisions

Accessory Dwelling Units (ADU)

An *Accessory Dwelling Unit* is a self-contained apartment in or on the lot of an owner occupied single-family home that is either attached to the principal dwelling or in a separate structure on the same property.



ADU OPTIONS:

- Apartments within single family homes
- Additions to single-family homes
- Conversion of garages, barns, outbuildings
- Construction of new outbuildings
- Designed into new construction

Agricultural Preservation (AP)

Preserving agricultural land and farming in Massachusetts has been a high priority of state and local officials for several decades. Through a variety of state and local initiatives, opportunities have emerged to help ensure a viable agricultural economy and farmland preservation. Many communities have successfully protected agricultural land using an array of financial and legal tools.



Agricultural Preservation Tools

- **Chapter 61A**
- **Agricultural Commissions**
- **Agricultural Preservation Restrictions (APR)**
- **Community Gardens**
- **Right to Farm**
- **Transfer of Development Rights (TDR)**
- **Community Preservation Act (CPA)**

Brownfields Reuse

Brownfields reuse is the redevelopment of contaminated properties into revitalized productive uses. Brownfield projects can be a complicated and often involve four steps: site inventory, site cleanup, marketing the property, and funding strategies.



Before



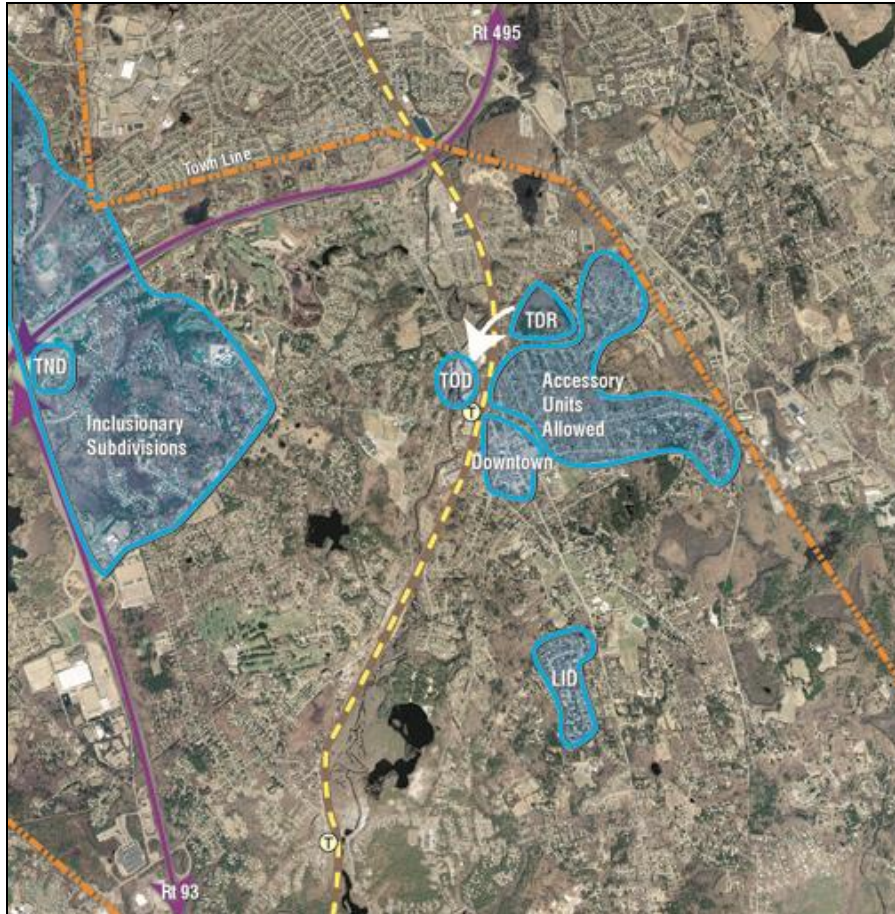
After

Source: Dr. Nina Scarito Park, Lawrence, MA - Groundwork Lawrence

Business Improvement Districts (BID)

Business Improvement Districts (BIDs) are special districts in which property owners vote to initiate, manage and finance supplemental services above and beyond the baseline of services already provided by their local city or town government. To finance these services a special assessment, or common area fee, is levied only on property within the district. The goal of a BID is to restore or promote business activity in targeted commercial areas.

Chapter 40R



Chapter 40R of the Massachusetts General Laws encourages cities and towns to establish new overlay zoning districts to promote housing production and, more generally, smart growth development. Chapters 40R and 40S both provide financial incentives to communities to adopt these new zoning districts.

District Improvement Financing (DIF) and Tax Increment Financing (TIF)

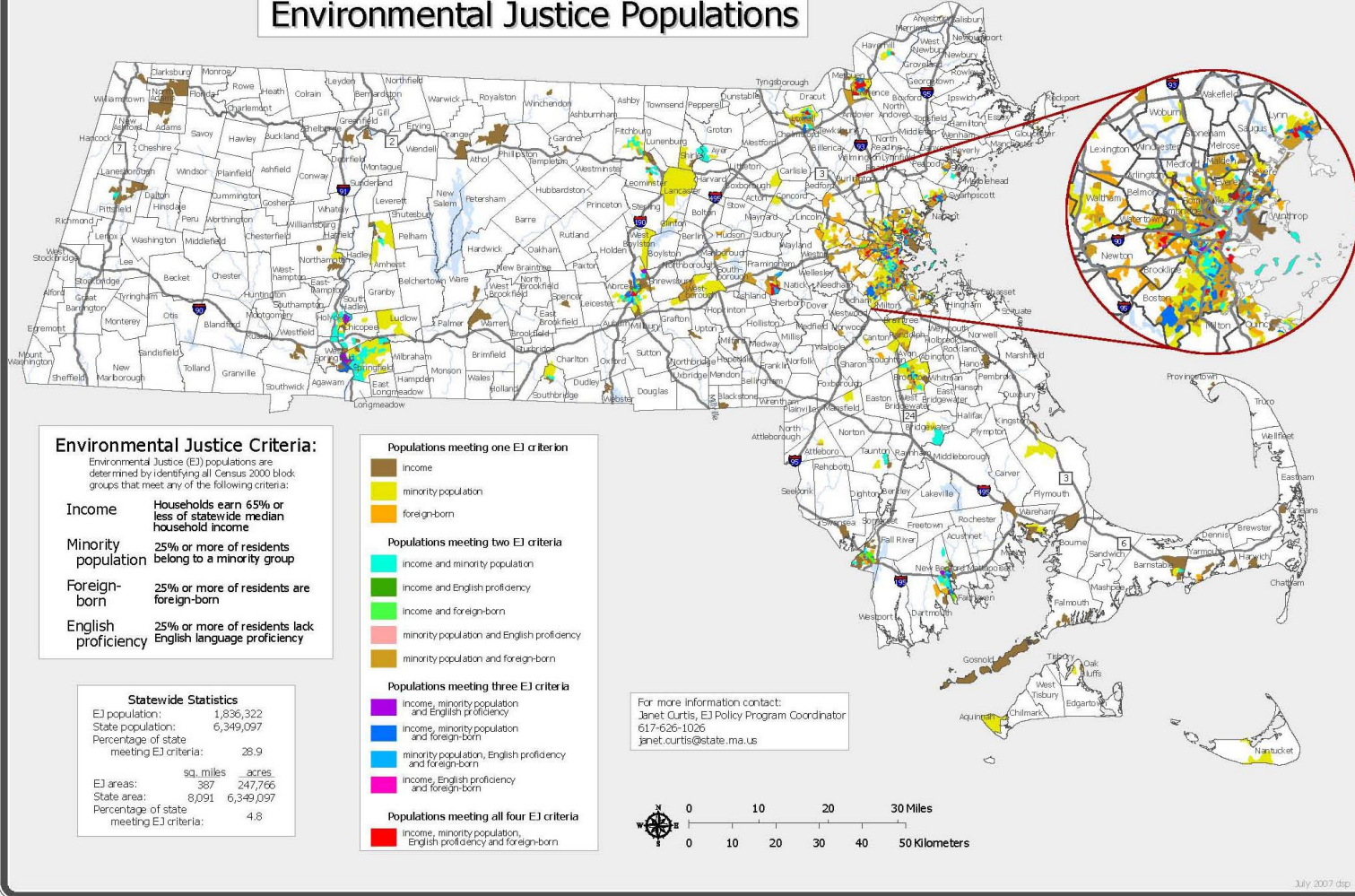
- **District Improvement Financing (DIF) and Tax Increment Financing (TIF) are both economic tools that promote redevelopment through the use of tax increments.**
- **TIF offers tax breaks to developers.**
- **DIF channels tax dollars into targeted redevelopment districts.**

Environmental Justice (EJ)

Environmental Justice (EJ) is the equal protection and meaningful involvement of all people with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies and the equitable distribution of environmental benefits. This section of the Toolkit provides guidance to municipalities and developers on how to better engage EJ populations in the planning and development process.

EJ Populations

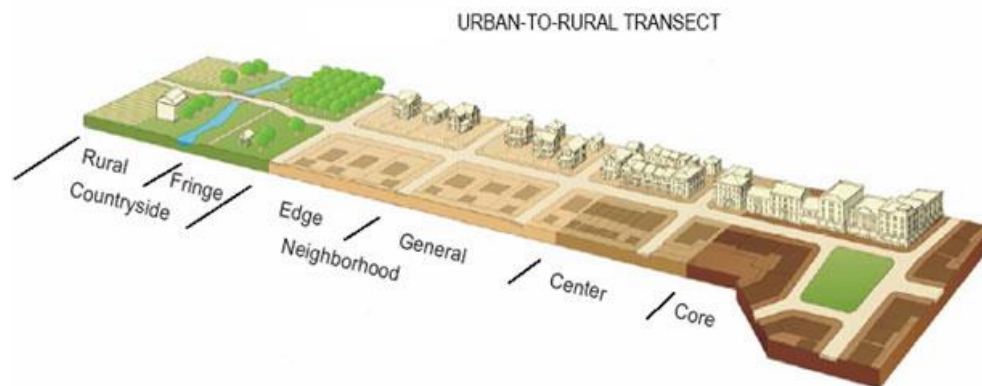
Environmental Justice Populations



Visit MassGIS for more information: <http://www.mass.gov/mgis/ej.htm>

Form Based Codes (FBC)

Form-Based Codes (FBCs) can either replace or supplement standard text-based zoning, subdivision, and other local regulations and are a method of regulating development to achieve a specific urban form. These codes are focused more on the form of development rather than the use. FBCs use a larger neighborhood perspective to determine the mass of buildings, their design elements, connection between sites, and their relationship to the public realm.



Inclusionary Zoning (IZ)

Inclusionary Zoning - local zoning that requires a portion of housing units in a new real estate development to be reserved for affordable housing

BENEFITS of IZ

- Expands housing opportunities
- Increases economic, demographic, and cultural diversity
- Distributes affordable housing equitably
- Improves economic competitiveness of Massachusetts

Low Impact Development (LID)

Two main principles of LID:
Better Site Design and
Best Management Practices



Low Impact Development (LID)

What is better site design?

A Set of Tools Designed To:

- Reduce Impervious Cover
- Promote Conservation of Natural Areas
- Promote the Diffusion of Stormwater Runoff
- Encourage Effective Stormwater Management and Treatment



LID Best Management Practices

LID techniques to reduce stormwater runoff and to treat non-point source pollution include:

- Site planning techniques (e.g., narrower roads, conserved natural areas, preserved natural depressions/topography);
- Dry wells for rooftop runoff;
- Vegetated swales;
- Filter buffer strips;
- Bioretention areas;
- Sand/organic filters;
- Permeable pavers;
- Green roofs;
- Rain barrels and cisterns;
- Stormwater planters.

Mill Revitalization Districts (MRD)

Mills were the economic engine of the Commonwealth for more than a century. Revitalizing these historic, cultural, and social icons has become a centerpiece for economic development in many cities, through the creation of Mill Revitalization Districts (MRDs). A MRD usually encompasses a historic mill (in larger cities, multiple mill buildings) and its surrounding neighborhoods.



Clock Tower Place, Maynard, MA

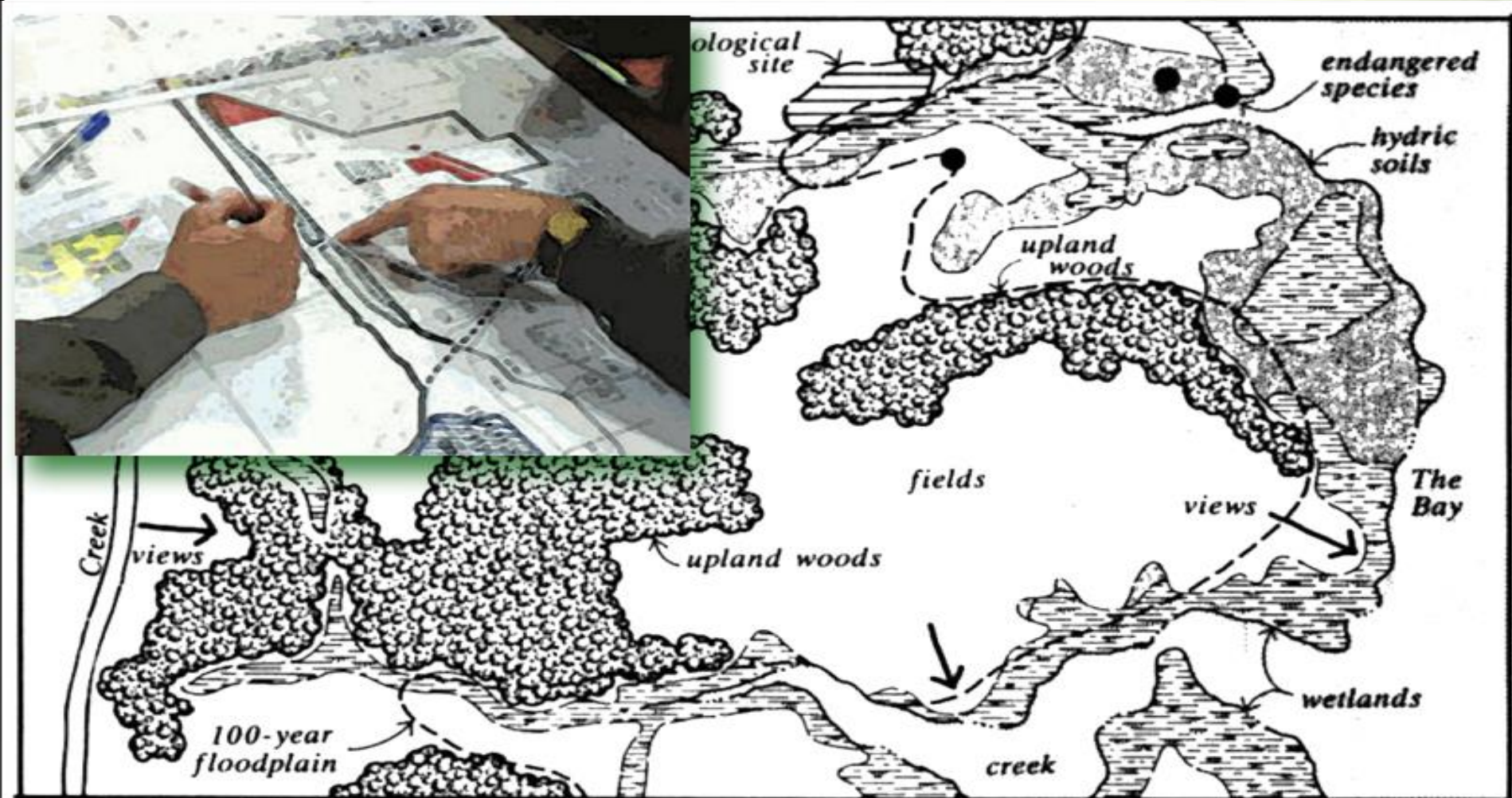
Open Space Residential Design (OSRD)

OSRD is an approach to residential development that promotes open space preservation based on environmental and social priorities.

It features partnership in development design between municipal officials and developers that provides innovative flexible incentives for highest marketability, mixed housing types and land uses, and minimal disturbance to the natural terrain.



OSRD: The process begins with determining how many lots could be developed under conventional zoning; this is the base yield of the property. From that point, the plan development process follows four basic steps:



OSRD – Development/Planning Process

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

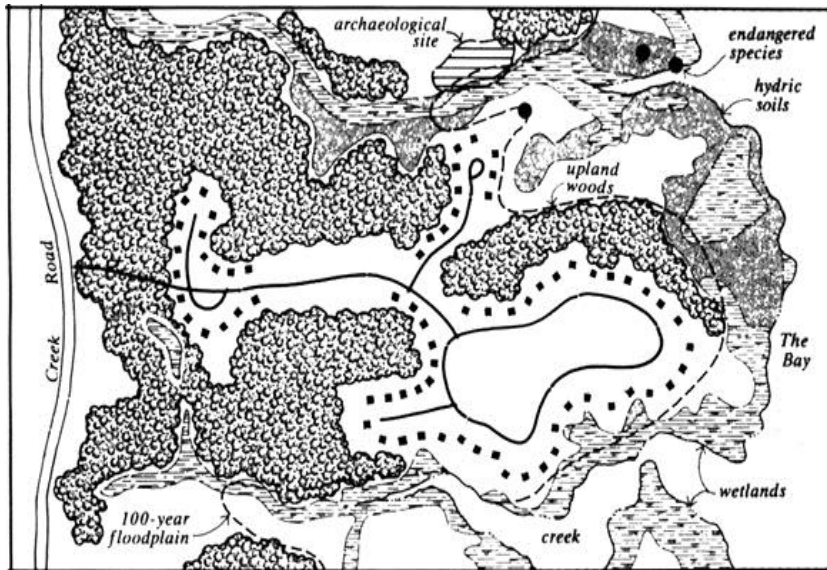


2) Place houses in the remaining area in a way that would maximize residents enjoyment of these areas by providing access to open space and preserving views.

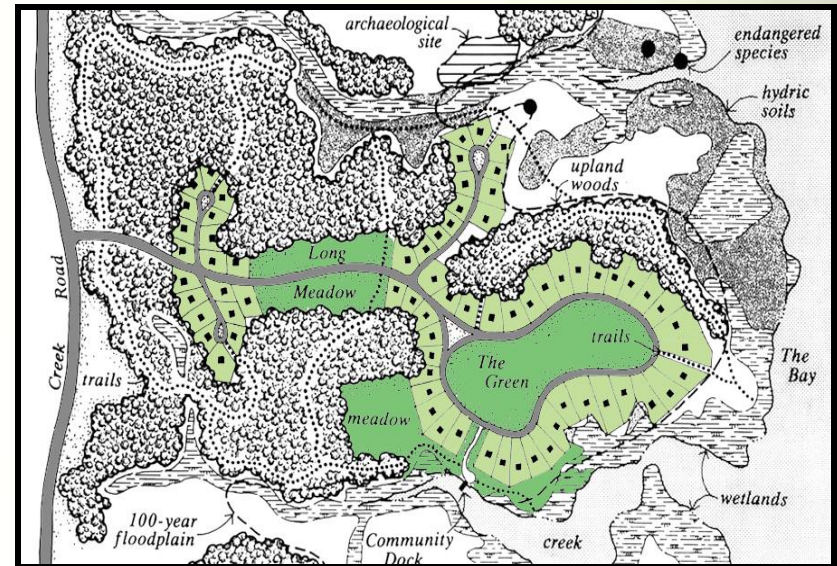


OSRD – Development/Planning Process (continued)

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



4) Draw lot lines around the homes.

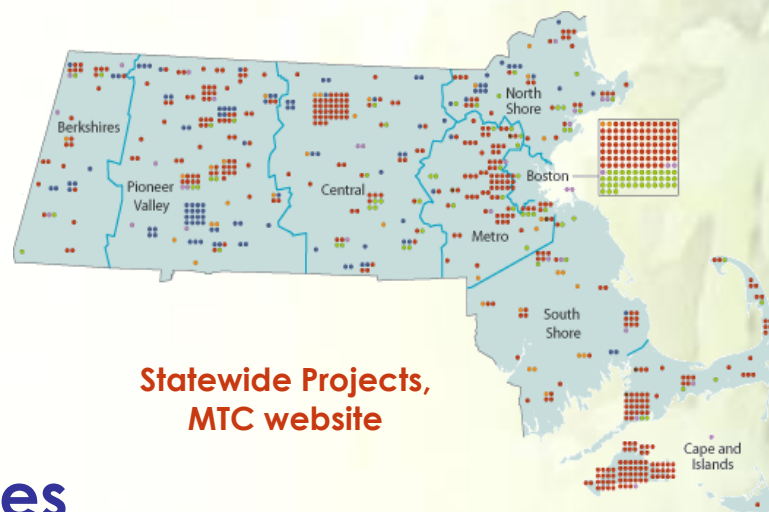


Outreach and Education

Smart Growth/Smart Energy Outreach and Education refers to the public process that is necessary to adopt smart growth/smart energy techniques at the local level. Education efforts include, but are not limited to, outreach to a community's general population, to specific interest groups in a city or town, and to individual agents in local government.

Smart Energy

- **Planning:** Opportunities to promote smart energy through planning
- **Energy Efficiency:** Attainment of smart energy goals through reduced consumption, ecological design, and high efficiency technologies
- **Renewable Energy:** Information on solar, wind, biomass and other technologies



Smart Energy



- **Green Building:** Design and technologies to reduce the environmental impacts of the built environment
- **Transportation:** Energy implications of, and smart energy solutions for, transportation
- **Resources:** Web links for more information as well as financial and technical assistance

Smart Parking

Parking standards and strategies play an important role in determining the quality of the built environment in cities and towns of all scales. Currently, many municipalities rely on antiquated parking standards that result in an overabundance of parking at the costs of community character and vitality, an increased "urban heat island effect", loss of recharge to drinking water supplies, and more polluted runoff. Smart parking approaches can address these issues through a variety of techniques including: tailoring standards, managing demand, and improving parking facility design.

Traditional Neighborhood Development (TND)

- Also called New Urbanism, village-style development, or neo-traditional planning;
- Mixes residential, commercial and civic uses in a compact area;
- Balances public and private space to enhance identity and value;
- Builds community, promotes walkability, and increases affordability;
- Use traditional cities, towns, and villages as a model for the future.



Transfer of Development Rights (TDR)

TDR is a regulatory strategy that harnesses private market forces to accomplish two objectives:

- **First, open space is permanently protected for water supply, agricultural, habitat, recreational, or other purposes via the transfer of some or all of the development that would otherwise have occurred in these sensitive places to more suitable locations.**
- **Second, other locations, such as city and town centers or vacant and underutilized properties, become more vibrant and successful as the development potential from the protected resource areas is transferred to them.**

TDR: The Concept

Owner of “sending” parcel sells development rights in exchange for permanent conservation easement.

preservation area



growth area



Owner of “receiving” parcel buys development rights to build at densities higher than allowed under base zoning.

Transit-Oriented Development (TOD)

TOD creates mixed-use, higher density communities that encourage people to live, work, and shop near transit services and decrease their dependence on driving.

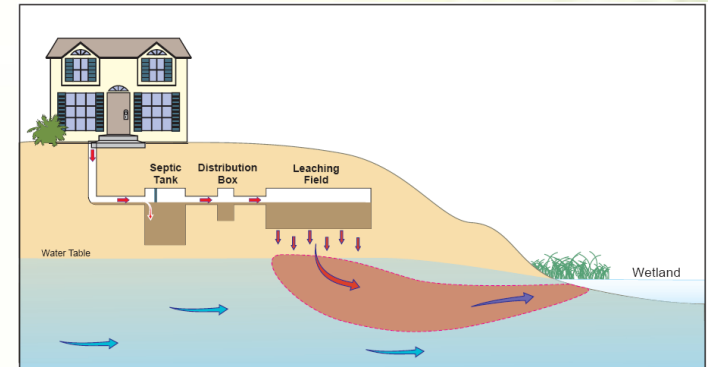


Characteristics of TOD

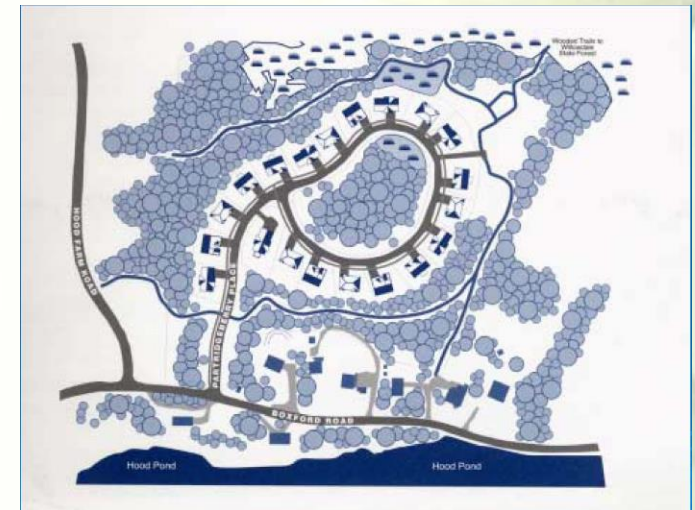
- Compact, higher density land development
- Mixed uses
- Good pedestrian environment
- Public amenities
- Parking management
- Good transit service
- Strong connectivity between transit and development

Wastewater Alternatives

Achieving higher density development in areas without public water or sewer service presents unique challenges. However, there are a number of technological and regulatory opportunities to address these challenges including shared systems (multiple homes on one septic system), innovative and alternative septic systems, and small sewage treatment plants.



Typical Title 5 Septic System



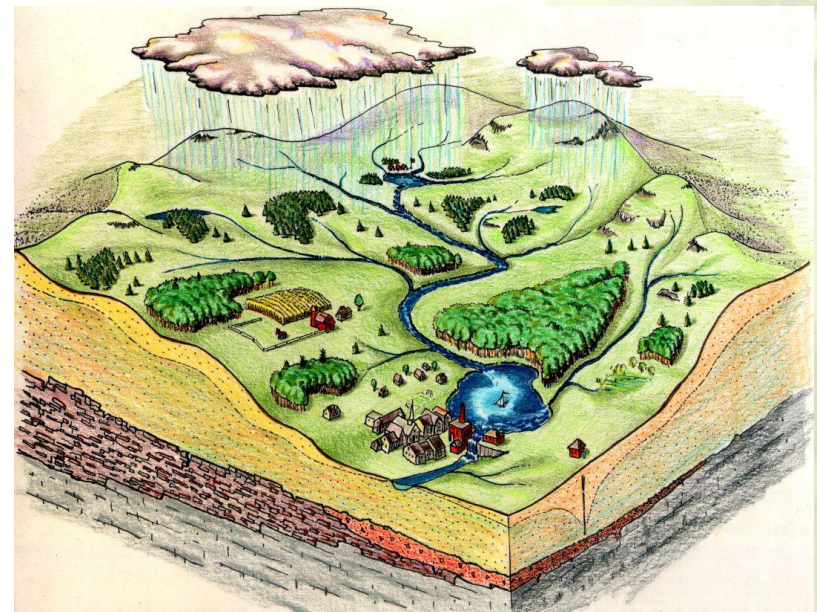
Shared Wastewater System

Water Resource Management

Water is a finite resource that needs to be managed to meet human needs as well as those of the natural environment. Approaches to water management must ensure continued and sufficient quantity and quality of water for current and future uses while maintaining ecological integrity of watershed systems.

This module of the Toolkit includes:

- Water resource problems
- Recommendations for community approaches to water resources
- Relevant state water policies



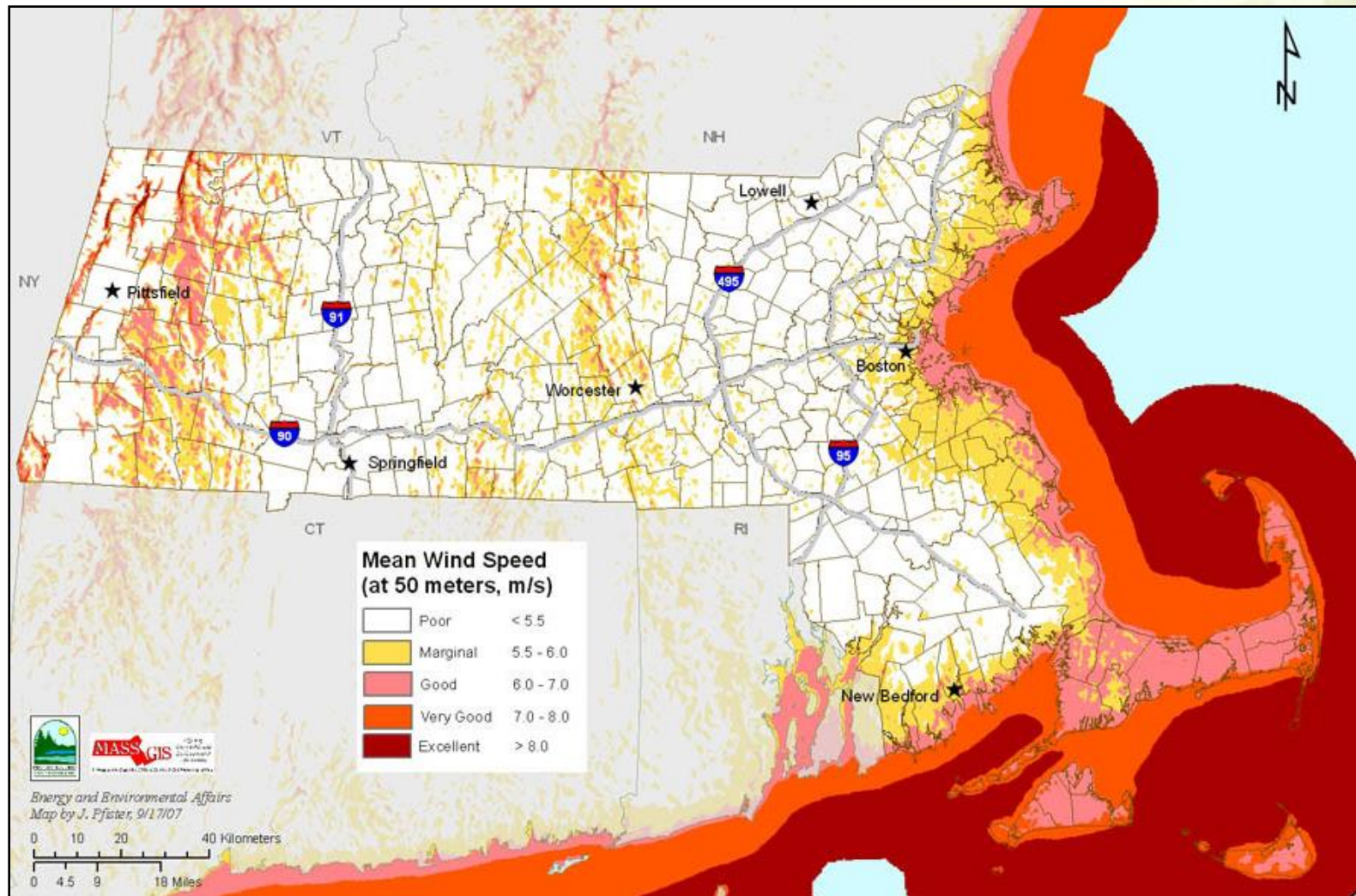
Wind Power



Wind Turbine in Hull, Massachusetts
Photo: www.hullwind.org

- Pollution-free, domestic, renewable resource
- Massachusetts has significant potential capacity
- Model bylaws for large- and small-scale turbines
- Vital clean energy resource to help address global warming and reduce greenhouse gas emissions

Wind Power



On and off-shore wind resources in Massachusetts

Zoning Decisions

Communities in Massachusetts that seek to implement various smart growth/smart energy measures must often consider changes to the local zoning bylaw (in a town or an ordinance in a city) to enable or require improved patterns of development. As highlighted in this module, the Massachusetts statutes and a lengthy body of land use case law provide for a variety of zoning approaches that have different advantages depending upon a community's goals, administrative capacity, and existing zoning framework.

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