

**New Villages:
Planning and Design of Compact Growth Centers
Shaped by Natural, Cultural and Recreational Greenways**

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Introduction

The last several decades have seen the emergence of numerous planning strategies and implementation techniques to preserve open space and promote Smart Growth and Sustainable Development at the local level:

- Greenway networks that preserve intact ecosystems.
- Green Infrastructure systems that protect floodplains, water supplies and other assets.
- Recreational greenways that link key locations with hiking, biking and other trail networks.
- Agricultural preserves that protect local food supplies.
- Cultural landscape protection that preserves visual and historic character.
- Revitalization of Main Streets and suburban commercial strips.
- Open Space Subdivisions/ Conservation Development.
- Masterplanned Growth Centers implemented with Form-Based Codes

While many cities and towns have adopted these strategies as part of their community plans, implementation is often haphazard and uncoordinated. Usually the Conservation Commission or local land trust pursues conservation of farmland and wildlife habitat – sometimes with reference to a town or regional plan, but often simply in response to the opportunities (or threats) of the moment. The local economic development office, meanwhile, is busy trying to fill up the local industrial park and support existing businesses. The Planning Board is reacting to whatever development proposals happen to come before it. The story continues with transportation improvements, provision of affordable housing, and planning for schools and other public facilities.

In recent years, however, as creative conservation and development strategies become more widely adopted, cities and towns are starting to explore how they can be combined into a more comprehensive and coordinated approach. The goal of this study is to explore an emerging Village Planning Paradigm that forges a direct link between greenway planning and the creation of compact growth centers. Its objectives include:

- Identifying case study precedents that show how creative development and conservation can go together at the scale of an entire community.
- Understanding how greenway planning can be used to identify natural, cultural and recreational systems that can be used to shape future growth and conservation
- Proposing a community and regional scale planning method for using greenways to shape growth centers.

Background and Literature Review

A new approach to greenway planning in Rhode Island began in 2002 with the initiation of the **Rhode Island Greenspace Program** (Flinker, 2008). Where most previous plans focused on protection of natural resources at the local level, the Greenspace Program uses the power of GIS, supported by extensive public participation, to give equal attention to cultural landscapes and recreational networks. Based on an understanding of landscape systems, the program provides a flexible strategy for guiding future growth and conservation at scales that range from a single site to the entire region.

Accomplished through a series of local meetings and volunteer efforts, the process revolves around creating separate inventories of natural, cultural and recreational resources. Selection of priorities centers on landscape systems that must be protected intact if the essential services provided by those systems are to be preserved. For all the towns, promoting tourism, enhancing the sense of place and protecting the quality of life were fundamental goals of the process. Implementation strategies developed during the project are focused on the local level, including changes to local comprehensive plans and zoning ordinances, and projects to enhance recreation and tourism. To date, Greenspace plans have been completed for the nine towns of the Pawcatuck Watershed, for the six towns of the Woonasquatucket Watershed, and for five towns that make up the watershed of the Scituate Reservoir, the water supply for greater Providence.

The program is specifically designed to go beyond open space planning focused on ecosystems to incorporate cultural resources and recreational networks (Flinker, 2003). Through a series of four workshops with each community, volunteers develop a separate inventory and priority conservation plan for natural, cultural and recreational resources. Priorities are established for preserving and enhancing each of these three elements as a sustainable, functioning system – whether that represents a river corridor with its associated wetland and upland habitat, a recreational greenway linking village centers to regional parks, or an historic agricultural landscape with a complex mix of farmland, forest, homesteads and hamlets. After each town sets separate priorities for these landscape systems, they are overlaid with each other to identify areas that are critical to protecting each community’s environmental health, sense of place and quality of life. Finally, regional workshops for each major watershed bring communities together to identify shared priorities and develop joint conservation strategies.

The project methodology was rooted in an understanding that cultural resources – often absent from local and regional open space planning – are critical to protecting visual character and quality of life. If we protect natural areas, while allowing development to sprawl across our historic and archaeological sites, scenic resources and working landscapes, we will lose an irreplaceable heritage. The Greenspace method is thus purposely designed to bring new people to the planning process: involving local historians, farmers, artists, and others in mapping and evaluating “heritage landscapes” critical to the region’s quality of life and sense of place. The results confirm what many local planners know intuitively but previously lacked the tools to demonstrate – that cultural resources and working landscapes form complex, interconnected systems that, like natural systems, need to be protected as a functional whole if their full value is to be preserved (Flinker, 2004).

While Rhode Island is at the forefront in greenway planning, there are few examples of integrating development projects with conservation of open space resources that go beyond individual sites. Several examples in the literature were identified that serve as a model for implementing regional conservation and growth center development across the state.

The first is **Chesterfield Township, New Jersey**, which created a masterplan for a new village and has successfully induced developers to use TDR to purchase development rights on farmland and use them to build at higher density in the designated village zone. Chesterfield, which had just 924 units on 21 square miles of farmland and forest, has been a leader in protection of its agricultural land. Increasing development pressure in the 1990s, however, led the town to look at Transfer of Development Rights (TDR) as a way to preserve more land without public funds. In 1997 and 1998 the township adopted a master plan that established a 560 acre receiving area, and changed the zoning to create a neo-traditional village center to be known as Old York Village (Chesterfield Township, 2013).

The village will allow for over 1,200 housing units, as well as a new elementary school, a mixed-use village center, and networks of parks, trails, and protected stream corridors. Design standards were established to guide the character of the streets, architecture and open spaces, using the township's existing historic villages as a model. So far, over 1100 homes, representing over 66% of the township's total development capacity, have been approved, and more than 500 homes have been completed. Through the TDR process, meanwhile, more than 2,750 acres of farmland have been permanently protected.

Another interesting project that combined conservation with a new village is **The Middle Green Valley Specific Plan** in Solano County, California, which created a masterplan for villages within a context of preserved farmland, and implemented it through California's specific plan legislation (Solano County, 2013). The Middle Green Valley includes some 1,905 acres of grazing land, forest and vineyards, interspersed with 55 scattered homes. Sandwiched between existing suburban residential areas, it is cherished by residents and neighbors for its rural character.

To protect the valley, Solano County sponsored the creation of a masterplan that designated about 1,490 acres of the area as permanent open space, of which 440 acres would be working farmland. Transfer of Development Rights would be used to shift up to 400 potential homes off of the open space areas into four new village areas totally 337 acres. Other areas would be set aside for community services, a small commercial area, and roads, trails and other infrastructure necessary to serve the new neighborhoods. To support the farmers and enhance tourism, there would be allowed up to 50,000 s.f. of agricultural commodity processing, 10,000 s.f. of agricultural tourism-related retail, and an inn with up to 25 rooms. The plan was created by a consulting team through an extensive process of public meetings and discussion. Helping to implement it is a New Urbanist design code and hundreds of pages of supporting materials describing financing, infrastructure and administration.

Planning for Sustainable Growth Centers at the Community Scale: Exeter, Rhode Island

While the Greenspace project is helping to understand and preserve Rhode Island's functioning landscape systems, a local effort called "A Vision for Exeter" demonstrates how towns can use a

GIS-based development suitability model to identify the best areas for village growth. When combined with a Transfer of Development Rights program, this approach will allow Exeter to build the kind of compact, walkable villages that residents desire while preserving thousands of acres of farmland and other resources (Flinker, 2012).

Like many small New England towns, Exeter is struggling to preserve its rural identity and quality of life in the face of sprawling residential development. Located within driving distance of Providence and the University of Rhode Island, most of the town's undeveloped land is zoned for three- and four-acre house lots. Even with these relatively large lots, under current zoning today's population of 6,590 could grow to more than 15,000, with some 3,000 house lots replacing the farms and forests that embody the town's rural character.

The gradual erosion of Exeter's rural landscape led the town to pursue a town-wide visioning effort in 2008. In Phase 1, the consulting team helped the town develop a "Game Plan for our Future," founded on an extensive public participation process that included creative use of Community Viz, game playing workshops, keypad polling, small-group interviews and on-line polling. This allowed residents to explore the implications of their current large lot zoning and test ideas for village development in an objective, non-confrontational atmosphere. The result was a strong consensus that village development is a better way to preserve working farm and forest landscapes while developing residential and commercial uses that would be a good fit for Exeter's future needs.

In Phase Two the town has been "Implementing the Game Plan" – looking in detail at potential village locations and developing a design template for what a village can and should be in the 21st Century. Through a detailed analysis of the economic, environmental, and social costs and benefits of village development, the project created a shared understanding of likely future growth under existing large-lot zoning, and compared that with a more sustainable village alternative. The consultants identified four village sites with significant growth potential, and used one of them as a model for more detailed design studies. The result is a Village Design Manual that will act as a guide for developers, designers, and town boards as they go through the process of village design and permitting.

To bring the effort from vision to reality, the consulting team drew up a Village Zoning Ordinance – essentially a hybrid form-based code – to guide the village planning and design process. Perhaps most significantly, a 32-fold increase in density (from the current minimum of four acres per home to eight units per acre in the village) would be achieved through a Transfer of Development Rights process that would directly link village development to preservation of farmland and other open space resources.

Planning for Growth Centers at the Regional Scale: Sustainable Rhode Island

Early in 2012 the State of Rhode Island was awarded a \$1.9 million Sustainable Communities Regional Planning Grant from the US Dept. of Housing and Urban Development (HUD). An outgrowth of a national collaboration known as the Sustainable Communities partnership, which includes HUD, the US Environmental Protection Agency and US Dept. of Transportation, the grant is designed to encourage regional planning that integrates land use, housing, economic

development, transportation and infrastructure into a single plan for sustainable growth and conservation. The outcome of the project will be a “Sustainable Rhode Island” plan. A key outcome of the plan will be the designation of growth centers in rural, suburban and urban communities. Included in statewide planning as a goal for more than a decade, growth centers have been identified previously, but never supported with dedicated funding for infrastructure or other needs.

The goal of the current effort is to create and implement a detailed planning method for planning growth centers across the state, supported by coordinated investment in transportation, infrastructure, housing and services from every state agency. The approach will essentially combine the methodology of the Rhode Island Greenspace program with a development suitability analysis similar to that used in the “Vision for Exeter” project, combined with other efforts to identify the social infrastructure of the state. Success in this endeavor will require an extraordinary level of coordination between state and local agencies, planners and government, as well as a robust public participation process at every level.

The Growth Centers planning process will begin with a **Green Infrastructure planning process** that will determine the key landscape systems within each community and region of the state that must be protected in order to sustain Rhode Island’s biodiversity, water supply, food security, recreational opportunity and cultural heritage. Each of these systems depends on a core network of areas and corridors which must be preserved intact if the whole is not to be gradually degraded and ultimately lost forever. The initial maps will include:

- Biodiversity – may include natural heritage sites, habitat types, ecological land units
- Water Resources – may include all land encompassed within a State designated surface or groundwater drinking water supply protection area, aquifer or aquifer recharge areas, plus wetlands, hydric soils, low order streams
- Agricultural Resources – may include farmland, prime and important farmland soils
- Forest Resources – may include forested wetlands, forested upland, core habitat areas, conservation lands, blocks of contiguous forest over specified size and shape
- Cultural and Historic Resources – may include historic sites, historic districts, archaeological sites, historic cemeteries
- Recreational Assets – may include parks, recreation sites, hiking, biking and water trails, public access at coastline

Each of these resource maps will be made available to the local communities for review through a simple interactive web mapping tool. Esri’s ArcGIS Online provides an easy-to-use online service that allows for uploading, downloading and streaming maps and geographic data on the web and can be embedded in the project website. Users will be able to turn on/off layers, pan and zoom, print a map, and interactively explore their local community’s or region’s assets. The initial maps for each resource value will be a simple grid-based cell in which each input layer is coded 0 or 1 for the absence/presence of the particular resource.

In addition to reviewing map content, each community will also be asked to establish the relative importance of each map theme for local conservation planning. The results will be used to create a weighting system that will allow for development of regional maps that highlight areas with

coincident resources and, to the extent possible, are cognizant of local priorities. Based on this local weighting process, the resource maps created for each community will be reorganized into maps that will emphasize the key landscape systems that make up the Green Infrastructure element. These may include:

- Natural Systems
- Cultural Systems
- Working Landscape Systems
- Recreational Systems

While the Green Infrastructure maps will define the landscape systems that need to be protected and enhanced, a separate mapping process will help to identify the best locations for Growth Centers. Like the Green Infrastructure mapping process, this will start with local maps, which will be reviewed, prioritized by each town, and ultimately merged into regional plans. This will include three maps for each community: **Economic Infrastructure, Social Infrastructure, and Development Suitability.**

The Economic Infrastructure Maps will include:

- Transportation
- Institutions
- Residential, Commercial and Industrial Land Uses
- Infrastructure
- Economic Development Assets

Social Infrastructure will include:

- Community Facilities, such as schools, libraries, parks, playgrounds.
- Social services
- Public Transportation
- Neighborhood Assets
- Equity populations and other demographic data

Development Suitability will include:

- Protected land
- Topography and Slopes
- Soils
- Drainage
- Environmental Constraints
- Water Supply
- Wastewater capacity

After local and state review of the separate map themes, the maps of Green Infrastructure systems will be overlaid with those for Economic and Social Infrastructure. This will illustrate areas of the state most appropriate for growth centers, which have the best economic and social infrastructure and manageable impacts on important natural and cultural assets. These will be discussed at a series of regional meetings to be held simultaneously in eight subregions of the

state. After an introductory meeting to explain the process and introduce the mapping process, each subsequent meeting will take on a particular theme, working up to a final meeting where it all comes together into a regional plan for Green Infrastructure and Growth Centers:

- **Regional Working Group Meeting #1 – Introduction:** Representatives from each town will meet together to learn about the project as a whole and will be introduced to the mapping process for Green Infrastructure, Economic Infrastructure and Social Infrastructure. This will provide an opportunity for questions and comments, and provide local representatives with enough background to conduct an effective review of the on-line maps for their community.
- **Regional Working Group Meeting #2 - Green Infrastructure:** Following local review, maps will be compiled for each of the eight regions, representing the weighted priorities of each community. At the second Working Group meeting, the consulting team will present the regional Green Infrastructure maps and facilitate a workshop on how best to balance the various elements and blend them into a regional Green Infrastructure Plan.
- **Regional Working Group Meeting #3 - Economic and Social Infrastructure:** Following local review, maps will be prepared for each of the eight regions that depict Economic and Social Infrastructure. Attendees will work to identify potential growth centers and discuss the range of growth center types that may be appropriate for each location. The project team will facilitate discussion to explore the relationship between economic, social and environmental assets, implications for growth center planning, and regional priorities for conservation and economic development.
- **Regional Working Group Meeting #4 - Review of Statewide Growth Center Plan:** Following meetings with the statewide Growth Center Committee, revised plans will be drafted showing recommended Green Infrastructure and potential growth centers for each region. At the meeting, local representatives will review the draft plans and provide feedback.

The size and make up of growth centers will necessarily change dependent on the context, market served, proposed mix of uses and other factors. To better define how each growth center most appropriately reflects its context, the project team will prepare a **typology of growth centers** that explores the full range of potential approaches from rural to urban sites. This will include:

Urban

- Downtown revitalization
- Neighborhood infill
- Urban Mixed-use Corridor

Suburban

- Town Center/Main Street Infill
- Strip Commercial Retrofit

- Transit-oriented Development

Rural

- Infill of a Historic Village
- New Village Surrounded by Open Space
- Small Hamlet

The results will be compiled into an illustrated guide to growth centers in urban, suburban, and rural contexts. This will include photographs and descriptive text showing existing examples from around Rhode Island and neighboring states. These examples will help to explore the range of uses, intensity of development and architectural style that is possible even within a single context type. Of particular importance will be showing a range of densities within similar contexts, so that users of the guide can get a sense of how the look, feel and functioning of a particular growth center type changes (or remains the same) as density rises or falls.

Conclusions

The last 30-40 years have seen the construction of many projects that combine conservation with compact development, guided by an overall masterplan. Ranging from small conservation subdivisions to New Urbanist communities with thousands of homes, these have, however, largely been limited to a single ownership or consortium of owners, usually with a short-term buildout. They often do little to further local goals for either conservation or development, especially in the more common planning context, where there are scores of owners and a development process that may take many decades. The examples described in this paper, however, point towards a new and very exciting approach, where the tools of conservation development are brought together with the local and regional greenway planning process to guide growth and conservation across entire towns and regions.

This approach is possible because of a convergence of planning theory, digital mapping tools, creative zoning approaches and political will that makes it possible for communities to plan for sustainable growth and conservation at an unprecedented level of complexity and detail. While many of the individual parts of this approach have been in existence for decades, this convergence of interests and opportunity has allowed for an integrated approach – rooted in specific, physical plans for real places – that combines smart growth with smart conservation. This process has also been made possible by a decades-long growth in available GIS data, allowing for detailed planning across scales from site to region. This wealth of information has also allowed for a deeper understanding of the landscape – not as a collection of isolated and static elements, but rather as a network of functioning, complex and adaptive landscape systems, each of which contributes to the success of the communities of plants, animals and humans that are supported by that landscape.

An understanding of these landscape systems – which can include ecology, culture, recreation, agriculture and others – allows for plans which reflect the complex relationships and organic growth patterns that allow these systems to adapt to changing circumstances and continue to flourish. This is the essence of sustainability. The Sustainable Rhode Island project, which unites green infrastructure, economic infrastructure and social infrastructure into an integrated

planning process, will be an important test of this approach. While this will initially focus on identifying the best locations for growth and the most important lands for conservation, it also holds the promise for villages that do not merely help preserve open space, but have an intimate functional relationship with the landscape which surrounds them.

At one time, of course, this relationship was a necessity, and villages by definition depended on the surrounding working landscape. It was only in the industrial age when villages began to be separated from that landscape, later devolving into mere nodes within suburbia, and eventually vanishing completely from the typology of development types. Today the lens of sustainability is revealing ancient truths about how people can live together in communities where the surrounding landscape provides a substantial amount of their food, water, recreational, spiritual and other needs. Greenway planning based on an understanding of functioning landscape systems is an essential ingredient in identifying the best locations for these sustainable growth centers and designing them to fit the needs of coming generations.

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