

NATURAL RESOURCES

4

Overview

Conserving natural resource helps preserve environmental functions, enhance community character, and enhance the overall quality of life.

Conserving natural resource helps preserve environmental functions, enhance community character, and enhance the overall quality of life ...

**Land Resources
(Wetland Soils)**



**Water Resources
(Watercourses)**



**Biologic Resources
(Plant Habitat)**



**Biologic Resources
(Wildlife Habitat)**



Protect Important Natural Resources

Protection of natural resources is important to Orange residents. Orange will continue efforts to protect important natural resources:

- Watercourses and waterbodies, wetlands, and floodplains,
- Steep slopes,
- Sensitive habitats and natural diversity / unique resource areas, and
- Coastal resource areas.

Protect Important Natural Resources		See inside back cover for legend	
Policies	Leader	Partners	
1. Continue to protect watercourses, wetlands, floodplains, and other important water resources.	IWC	CC, TPZ, PW	
2. Continue to discourage development on steep slopes and other sensitive landforms.	TPZ	CC	
3. Continue to protect sensitive habitats and other natural diversity areas.	TPZ	CC	
4. Continue to protect important coastal resources and manage activities within the coastal boundary in accordance with the adopted Coastal Area Plan.	TPZ	CC	
5. Continue having the Conservation Commission monitor overall conservation issues in Orange.	CC	BOS	
6. Seek to coordinate resource protection activities with adjacent communities and regional organizations.	CC	BOS, SCRCOG	

Natural Resources Map

Orange, CT

DERBY

WOODBIDGE

NEW HAVEN

SHELTON

SB

AA

A

B

WEST HAVEN

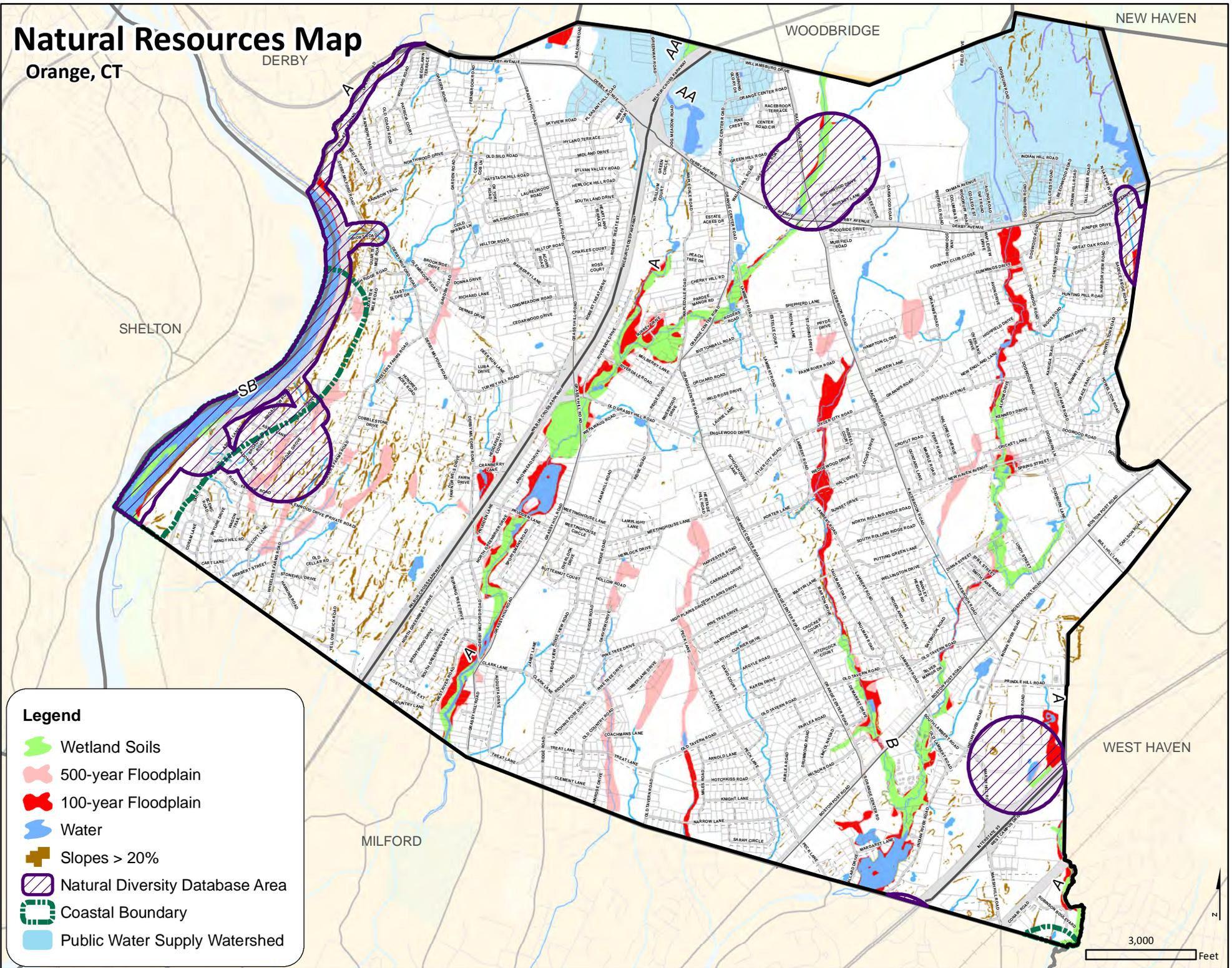
MILFORD

Legend

-  Wetland Soils
-  500-year Floodplain
-  100-year Floodplain
-  Water
-  Slopes > 20%
-  Natural Diversity Database Area
-  Coastal Boundary
-  Public Water Supply Watershed

3,000

Feet



Sensitive Water Resources

The South Central Regional Water Authority manages several high-quality water bodies located in the northern portion of the Town of Orange:

- Wepawaug Reservoir and upstream segment of the Wepawaug River,
- Maltby Lakes and upstream segments of Silver Brook and the Cove River.

Activities upstream of these resources are closely managed since they occur in areas which are designated for existing or potential public supply of water.

Impaired Water Resources

Some portions of the following water resources are considered impaired by the Connecticut Department of Energy and Environmental Protection (DEEP), generally due to urban runoff and similar types of pollutants:

- Housatonic River (both salt- and freshwater sections),
- Wepawaug River,
- Race Brook,
- Twomile Brook,
- Indian River, and
- Silver Brook

Protect Water Resources

Protection of water *quality* is the most important natural resource protection issue in Orange. Many Orange residents obtain their drinking water from wells and there are several public water supply sources which serve residents of Orange and other communities served by the South Central Regional Water Authority. The management of water runoff *quantity* is also an important consideration for overall environmental health.

Development can adversely affect water resources since impervious surfaces:

- reduce groundwater infiltration and flow (reducing the water supply to wetlands and aquifers),
- accelerate runoff (leading to channel scouring and siltation of watercourses and waterbodies), and
- transmit pollutants more directly to watercourses and waterbodies.

The majority of development in the Town of Orange occurred prior to the adoption of modern-day stormwater management standards. Most of the existing drainage infrastructure consists of traditional storm drains and catch basins that discharge directly to surface waters without treatment, other than detention to maintain peak rates of discharge. Urban stormwater runoff from developed land uses (i.e., impervious cover such as roads and parking lots) is a significant contributor to water quality impairments in the Town's major water bodies.

Water Resources



Water Quality



Water Quantity



Water Quality Protection

Protecting water *quality* can be furthered by the following types of strategies:

- Managing land use activities, especially in public water supply watersheds, to reduce and minimize pollutants,
- Implementing “low impact development” (LID) practices which use vegetation and infiltration to better manage stormwater quality,
- Reducing the amount of effective impervious coverage (road widths, parking requirements, etc.) to reduce pollutants and allow for the use of some areas for implementing LID practices,
- Allowing for the use of permeable surfaces on roadways and in parking areas (e.g., porous asphalt, pavers, etc.),
- Conserving vegetated buffers along streams and rivers, and/or
- Eliminating curbing along roadways and in parking areas, where appropriate, to allow runoff to discharge and infiltrate into the surrounding natural ground surface or into an LID practice such as a roadside swale.

Improperly operating septic systems are a potential threat to water quality and public health. While there has been no indication of widespread septic failures or problems in Orange, Orange may wish to consider adopting a septic management program to help identify possible septic problems and avoid potential pollution. Communities with such programs typically:

- require that all properties be walked over at least once every three years to inspect for system failures,
- require that information on septic tank pumping be reported to the Town, and/or
- sponsor programs to educate property owners about septic operation and maintenance.

Two additional programs which can be effective in protecting water quality include:

- Educating residents about threats to water quality (lawn fertilizer, herbicide, pesticide, etc.), and
- Ensuring appropriate erosion and sediment controls.

No Curbing / Rain Garden



Permeable Pavers



Water Quality Protection

For many years, water quality protection focused on eliminating “point” sources of pollution (such as industrial discharges).

With the progress that has been made in reducing or eliminating pollution from these sources, attention has now turned to “non-point” sources. This includes storm drainage discharges, lawn fertilizer, septic systems, agricultural runoff, and similar sources.

Water Quantity Management

Managing water *quantity* (maintaining base flow and reducing peak flow) can be furthered by the following types of strategies:

- Minimizing the impact of impervious surfaces which accelerate runoff and pollutants,
- Reducing the amount of runoff discharged directly to watercourses,
- Replicating runoff characteristics of the natural environment instead of accelerating and concentrating the flow,
- Replenishing groundwater flows to wetland and watercourse areas, and/or
- Implementing “low impact development” practices which use vegetation and infiltration to better manage stormwater runoff and quantity.

The map on the facing page shows the Hydrologic Soil Group classifications for Orange from the Natural Resource Conservation Service.

This information, which is based on historical soil surveys, suggests there are a number of areas in eastern part of the community with soils which have slower infiltration rates and are less conducive to infiltration. It is these areas which have reported drainage issues, especially after major storm events.

This is significant because it coincides with areas which have historically experienced localized flooding (Wepawaug River, Indian River, and several smaller tributaries). Soils in these areas of Orange do not allow rainfall to infiltrate quickly and the resulting runoff can result in flooding.

Some other flooding issues in the community are the result of undersized drainage culverts or other issues:

- Wrights Pond / Old Grassy Hill (undersized culvert)
- Coachmans Lane / Old Country Road (undersized culvert)
- Margaret Drive / Mallard Drive (lake flooding due to outlet structure)
- Surrey Drive (flooding from the Wepawaug River)
- Prudden Lane (flooding from the Wepawaug River)

If the frequency and severity of large storms increases in the future (as is expected), flooding is expected to become more severe as well.

Hydrologic Soils Groups

Orange, CT

DERBY

WOODBRIDGE

NEW HAVEN

SHELTON

Housatonic River Watershed

Wepawaug River Watershed

Indian River Watershed

South Central Shoreline Watershed

WEST HAVEN

MILFORD

Legend

-  A - High Infiltration Rates
-  B - Moderate Infiltration Rates
-  C - Slow Infiltration Rates
-  D - Very Slow Infiltration Rates
-  N/A (Water or Urban Land)
-  Water

3,000 Feet



Section 382-26 of the Subdivision Regulations (Stormwater Management) provides standards to address water quantity issues:

- no increase in the rate of runoff for up to the 100-year storm event (at the discretion of the Town Engineer/Director of Public Works),
- detention systems shall be designed to capture at least the first one inch of rainfall of any storm event,
- direct stormwater discharges to watercourses and wetlands are discouraged,
- if site conditions permit, post-development stormwater volumes should remain the same or be less than pre-development volumes,
- the Town has the authority to perform maintenance on stormwater facilities that are not being properly maintained at the expense of the owner.

Importance of LID

Although most of the Town of Orange is fully developed, the potential exists for new development on undeveloped land throughout the Town and infill / redevelopment of currently developed areas.

If Orange continues to manage stormwater the way it has, drainage issues may get more urgent in the future because we are already at or near the margin of what can be accommodated.

New approaches, such as Low Impact Development (LID), are necessary to mitigate water quality and quantity impacts of future development and to protect high-quality water resources in the Town of Orange.

Opportunities exist for the implementation of LID for new development and redevelopment projects throughout the Town.

Reportedly there is currently one green infrastructure best management practice (BMP) in the Town of Orange – a rain garden at the Old Tavern Road Recreation Area. This BMP was installed during a Town funded parking lot expansion project.

Still, implementation of “low impact development” (LID) approaches is recommended in order to be able to address the water resource issues of today and the future.

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Protect Water Resources	See inside back cover for legend	
Policies	Leader	Partners
1. Protect water quality by managing stormwater runoff and other sources of pollution.	TPZ	IWC, CC, PW
2. Manage water quantity by seeking to replicate the natural water cycle in terms of infiltration and runoff.	TPZ	IWC, CC, PW
3. Protect public water supply watersheds.	TPZ	IWC, CC, SCRWA
4. Implement “low impact development” practices to help manage water quality and water quantity issues.	TPZ	IWC, CC, PW
5. Seek to reduce the amount of effective impervious coverage to help reduce pollutants and runoff.	TPZ	IWC, CC, PW
6. Conserve vegetated buffers along streams and rivers through conservation easements and other means.	IWC	CC, TPZ
7. Maintain upland review areas adjacent to wetlands and watercourses in order to protect these resources.	IWC	CC, TPZ
8. Anticipate and address flooding issues in the community.	PW	EMAC
9. Consider managing water resource issues on a watershed basis.	CC	IWC, TPZ

(see recommended tasks on following page)

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(see recommended policies on preceding page)

Protect Water Resources	See inside back cover for legend	
Initial Tasks	Leader	Partners
10. Review existing land use regulations and policies to remove impediments to implementing LID in Orange (road widths, parking requirements, curbing requirements, etc.).	TPZ	IWC, CC
11. Incorporate LID stormwater management standards into existing town land use regulations.	TPZ	IWC, CC
12. Educate design professionals and homeowners about LID tools and techniques.	CC	TPZ
13. Consider establishing a septic management program to identify possible septic problems and avoid potential pollution.	BPH	BOS, WPCA
14. Conduct public education about protecting water quality (including reducing fertilizer, herbicide and pesticide use).	CC	SCRWA

Rain Barrels



Infiltration Island



Detention Basin



OPEN SPACE

5

Overview

Open space can help protect community character, enhance the quality of life for residents, conserve important natural resources, provide wildlife habitat, provide fiscal and economic benefits, shape development patterns, and preserve lands for recreational uses.

In recent years, Orange has been extremely active in acquiring land and preserving it as open space. This is a significant accomplishment and will provide substantial community benefits for years to come. Orange residents understand and support these efforts. In a workshop meeting conducted early in the planning process, residents identified preserving open space and enhancing community character as the top two issues of importance to them.

As a result, the focus of this chapter is to suggest ways for the community to integrate and extend these efforts into a geographically specific open space action plan for Orange.

Preserving open space supports a number of community goals ...

Turkey Hill Preserve



Turkey Hill Preserve



Terminology

In the Plan, "dedicated open space" is used to describe land that is typically owned by a public or non-profit entity and is expected to remain as open space in perpetuity. It typically allows for public use of the land.

The term "managed open space" includes land that is used for another purpose but provides the community with some open space benefits (such as land owned or used by private schools, golf courses, cemeteries, and excess land at municipal facilities). Since such land may not allow public use of the land or may be sold or developed in the future, it is not considered dedicated open space.

Finally, "perceived open space" is private land that is presently vacant or partially developed. While this land may appear to be "open space", nothing prevents this land from being sold or developed at some time in the future. This includes land presently assessed under the Public Act 490 program as farm or forest land.

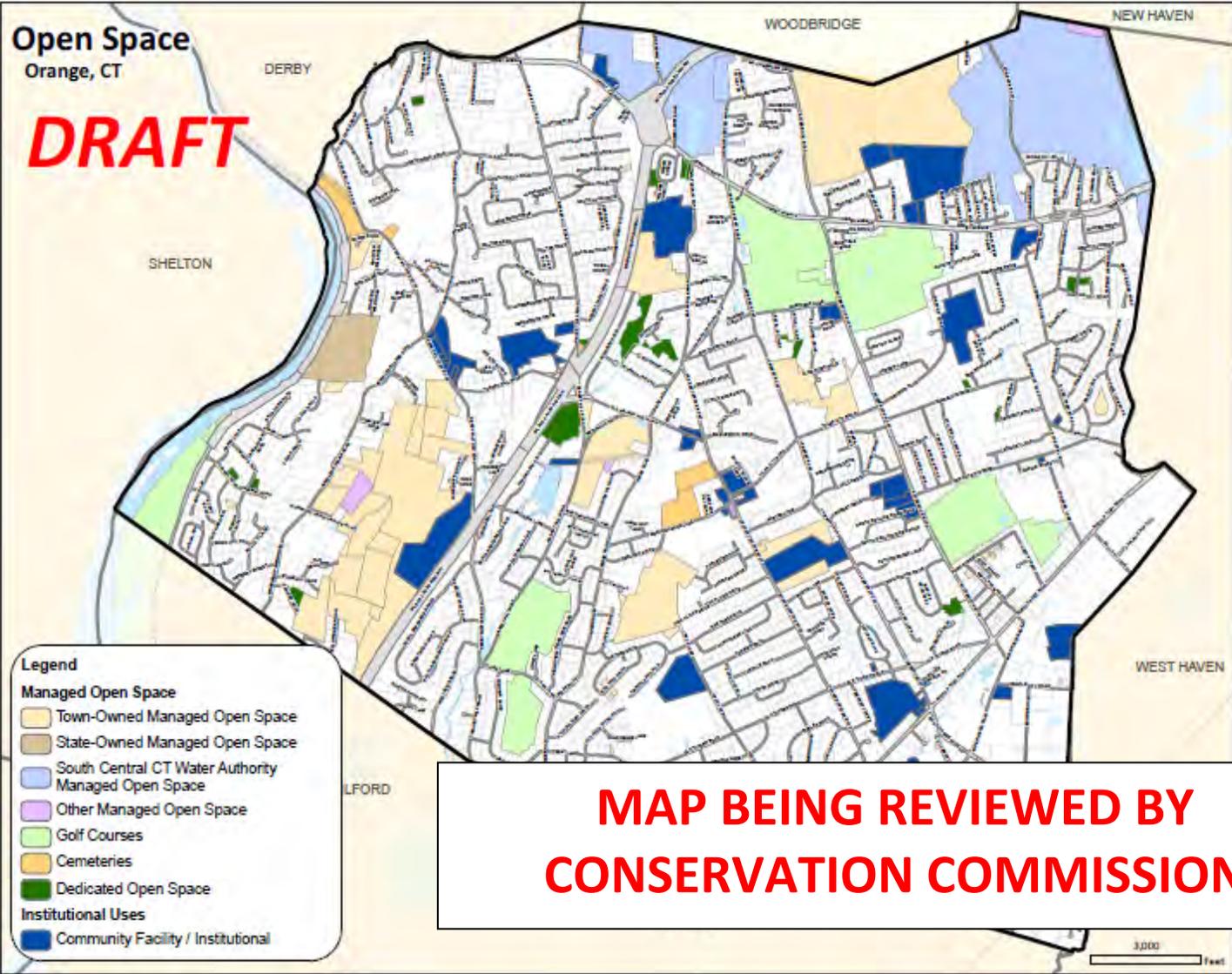
Continue Open Space Preservation Efforts

Approximately 21 percent of Orange (2,375 acres) can be categorized as open space. This includes land owned by the Town of Orange, the Orange Land Trust, the State of Connecticut, the South Central Regional Water Authority, and similar organizations. It also includes land owned by local golf courses and philanthropic organizations.

However, another 17 percent of Orange (1,898 acres) can be characterized as "perceived open space" since it is privately owned and is undeveloped at present. In other words, a large part of what residents perceive today as open space is actually undeveloped land that may be developed in the future.

For this reason, Orange will continue efforts aimed at preserving open space in the future.

Continue Open Space Preservation Efforts		See inside back cover for legend	
Policies	Leader	Partners	
1. Continue to preserve open space as opportunities present themselves.	CC	TPZ, BOS, OLT	
2. As appropriate, strive to convert managed open space and perceived open space into dedicated open space owned by the Town or the land trust.	CC	TPZ, BOS, OLT	
3. Continue to coordinate open space preservation efforts with the Orange Land Trust and similar organizations such as The Nature Conservancy and The Trust For Public Land.	CC	TPZ, BOS, OLT	
Initial Tasks			
4. Update the open space inventory in Orange and categorize parcels as appropriate.	CC		
5. Consider clarifying "allowed uses" of Town parcels in order to determine which parcels can be categorized as "dedicated" open space.	CC	BOS	
6. If open space is to be preserved as part of the development process, develop a sequence for which organizations will be considered for ownership of the open space (Town, land trust, State, other conservation organization, homeowner association, private conservation easement, etc.)	TPZ	CC, BOS, OLT	



Priority Open Space Areas

The parcels listed below consist of parcels that were identified either by the Conservation Commission, the Land Trust, the Town Plan and Zoning Commission, or in previous Plans of Conservation of Development. These parcels are identified for a variety of reasons including their proximity to existing preserved open space (potential greenways), their location to watercourses (buffers) and/or the existence of significant natural resources or features.

The priority open space areas listed below are not necessarily areas to be municipally acquired; however purchase is one means of conservation. Development of these areas is possible consistent with their general location, but they are identified to alert land owners, developers and town officials that special care should be paid to development density and design to be sure the valuable natural characteristics of the sites are not compromised. It should be noted that the **priority open space designations shown on the Open Space Plan map** are intended to show general locations.

However, since an entire parcel has been used for mapping purposes, entire parcels are included in such designations. It is not intended to imply that the entire parcel contains significant open space features.



Owner	Parcel Number	Acres	Location
Bespuda, Walter M.	86-1-1-15A	41.39	Garden Road
Bespuda, Walter & Maryellen	77-3-1"	56.58	Derby-Milford Rd
Clark, Eloise P.	40-5-3	20.22	Meetinghouse Lane
Daddario, [unclear]	46-1-1	3.85	[unclear] st
Ewen Jr., [unclear]	63-2-1	79.40	Lambert Road
Hine, Walter S.	105-1	19.8	Derby Avenue
Hine, Walter S.	96-7	37.33	Grassy Hill Road
Hine, Walter S. & Dorothy	96	20.64	Grassy Hill Road
Hine, Walter S. & Dorothy	9	12.88	Grassy Hill Road
Racebrook Realty Corporation	8 [unclear] A	6.33	Racebrook Road
Rogers, [unclear], Thomas	-10	6.48	Grassy Hill Road
Rogers, Jonathan et al	60-6-1	19.70	Grassy Hill Road
So. Central CT Reg. Water Auth.	93-3-33	264.22	Derby Avenue
So. Central CT Reg. Water Auth.	93-4-1	8.51	Derby Avenue

(continued)

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Priority Open Space Areas (continued)

Owner	Parcel Number	Acres	Location
So. Central CT Reg. Water Auth.	97-3-2	54.46	Greenway Road
So. Central CT Reg. Water Auth.	97-4-2	74.36	Derby Avenue
So. Central CT Reg. Water Auth.	106-2-1	19.87	Greenway Road
So. Central CT Reg. Water Auth.	107-2-1	11 .10	Orange Center Road
Treat, Addie B., Wilson, Susan	11-3-2	85.03	Old Tavern Road
Homestead Farm LLC ET AL	61-1-1	7.64	Old Grassy Hill Road
Homestead Farm LLC ET AL	61-3-8	21.66	Old Grassy Hill Road
Pepe Ann S Trustee	6-4-11	19.01	S. Orange Center Road
BJ Realty	13-7-5	6.59	S. Orange Center Road
Grassy Hill Country Club	18-1-10	38.10	Clark Lane
Grassy Hill Country Club	27-6-1	76.66	Clark Lane
Herb	35-0	1	Clark Lane
Russo Hannah Clark	40-1	1	Meetinghouse Lane
Russo Hannah Clark	40-11	2	Meetinghouse Lane
Clark Grant & Patricia ET AL	4-1	3	Orange Center Road
Walter H. Smith Realty Corp	4-1	8	Racebrook Road
Walter H. Smith Realty Corp	4-1	1	Racebrook Road
Walter H. Smith Realty Corp	4-2-4	0	Racebrook Road
Walter H. Smith Realty Corp	44-2-22	1.62	Racebrook Road
Walter H. Smith Realty Corp	44-2-25	21.79	Racebrook Road
Clark, Eloise P	52-4-1	8.16	Tyler City Road
Clark, Benjamin & Donald F	52-4-1A	11 .02	Behind Municipal Complex
Clark, George E	52-4-14	4.08	Lambert Road
Walter H. Smith Realty Corp	54-6-2	3.14	Racebrook Road
Walter H. Smith Realty Corp	55-1-1	35.58	Dogburn lane
Russo Partners, Richard M, ET Al	58-1-10	60.29	Along Railroad Bed
Sperry, Wm Curtis EST ET AL	64-6-1	35.37	Russell Avenue
LaSalle, Suzanne Warner ET Al	72-1-1*	29.57	Racebrook Road
Loman, Wallace Jr. ET Al	76-4-7	16.19	Derby--Milford Road
Racebrook Realty Corp	80-4-1	138.37	Derby Avenue
Racebrook Realty Corp	82-7-5	135.04	Derby Avenue

Greenbelts and Greenways

A greenway is a corridor of open space that:

- may protect natural resources, preserve scenic landscapes and historical resources or offer opportunities for recreation or non-motorized transportation,
- may connect existing protected areas and provide access to the outdoors,
- may be located along a defining natural feature, such as a waterway, along a man-made corridor, including an unused right-of-way, traditional trail routes or historic barge canals, or
- may be a green space along a highway or around a village.

CGS 23-100

Strive To Create An Open Space System

While the amount of open space is important, the value of open space to residents may be more important in the long term. Some people feel that all open space should be preserved in its natural state. Others feel that all open space should be put to active recreational uses such as ball fields. Most will agree that passive uses of open space are appropriate. If open spaces can be interconnected into a cohesive overall system, the value of open space to residents and the impact on community grow exponentially through:

- increased accessibility for all residents,
- enhanced quality of life for residents,
- improved wildlife corridors, and
- more opportunities for active or passive use.

Thus, one way to enhance the value of an open space system may be to establish a system of greenways and trails. Trails and greenways add to the character of the Town and provide safe and relaxing recreation.

Efforts to create a system of trails in Orange should continue. Some communities have obtained easements over private property to create trail connections or have used former rail/streetcar corridors or electrical or sewer rights of way to create greenways and trails.

Strive To Create An Open Space System		See inside back cover for legend	
Policies	Leader	Partners	
1. Strive to establish an open space system in Orange by interconnecting open space areas into a comprehensive greenbelt system with trails.	CC	BOS, TPZ, OLT, SCRWA	
2. Promote public use of, and access to, open space.	CC	BOS, TPZ, OLT, SCRWA	
3. Continue to create a trail system within and between open spaces.	CC	BOS, TPZ, OLT, SCRWA	

Use All Available Tools To Preserve Open Space

Since open space preservation is so important to residents, the Town will continue to use all available tools to help preserve open space and establish greenways.

This chapter of the Plan of Conservation and Development will be used to help coordinate and guide local open space preservation activities by providing:

- a unifying action strategy to guide open space preservation efforts,
- policies and recommendations for identifying, funding and acquiring land for open space, and
- a basis for obtaining state and/or federal grants for open space acquisition.

Fiscal Strategies

In the past, the Town has supported open space acquisition through the annual operating and capital budgets and special appropriations. Some communities have bonded open space funds in advance of a specific purchase in order to have funds available when opportunities arise and the Town may consider this approach.

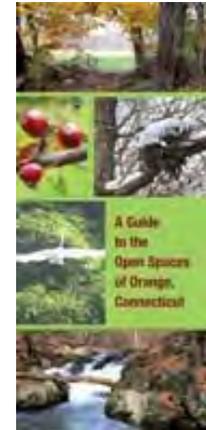
In the future, the Town will continue to seek opportunities to take advantage of state and federal grant programs for open space acquisition.

Regulatory Strategies

State statutes allow communities to preserve open space at the time a property is subdivided. As a key recommendation of this POCD, the Commission will encourage “conservation subdivisions” which are also known as “open space developments”. Information explaining this approach is presented in the following pages.

Open Space Guide

A guide to local open spaces with locations, brief descriptions, trail maps, facilities, and hours is available.



It was produced by the Senior Leadership Class of 2012, a project of Orange Community Services.

CASE STUDY – Conservation Development

Conservation development is an approach that allows development to occur while protecting a site's important features. Such features may include sensitive natural resources, wildlife habitat, farmland, scenic views, or areas which contribute to the overall character of the community. It may also include open space connectivity and the establishment of greenways. The sensitive areas are typically preserved as "open space" owned by conservation organizations or by local government.

A key element of conservation development is that areas to be protected are typically identified first and then development occurs around the protected areas. This contrasts with a conventional approach where development is often laid out first and conservation areas are defined by what is left over.

Conservation development can help protect important natural resources and community character. Greenway systems and wildlife corridors can be established. Stormwater management systems can be used to promote natural flow patterns and infiltration. Studies have shown that development in close proximity to preserved open space is considered more valuable and appreciates more rapidly than other development patterns.

The graphics on these pages illustrate how "conservation design" subdivisions are related better to the natural attributes of the land and characteristics of the community than "conventional design" development patterns:

The information on the following pages suggests how a site analysis might be conducted as part of a conservation design process.

Additional information is contained in the Housing and Residential Development chapter of the POCD.

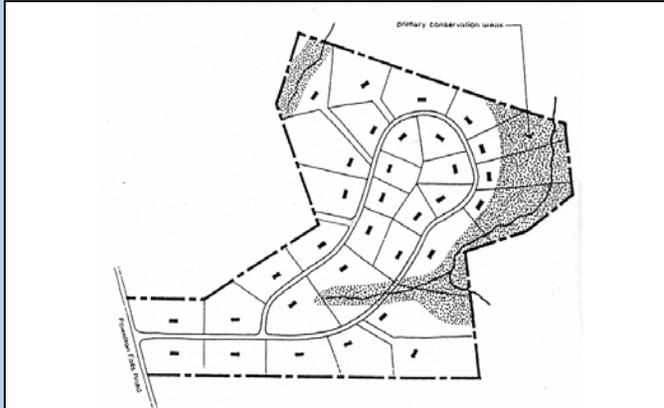
Parcel Prior To Development



Graphics by Randall Arendt

CASE STUDY (continued)

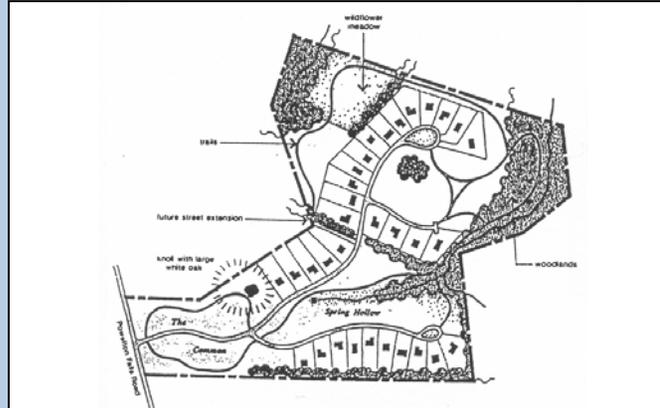
Conventional Subdivision Development



- 32 lots on 82 acre parcel
- Average lot size = 2.5 acres
- No open space preserved
- Scenic features converted into lots



Conservation Subdivision Development



- 32 lots on 82 acre parcel
- 32 acres in lot areas / average lot size = 1.0 acre
- 50 acres preserved as open space (60% of parcel area)
- 50 acres of publicly accessible open space
- Scenic features preserved



Site Analysis

Unfortunately, many subdivisions are laid out as a “geometric resolution of dimensional constraints” and are then placed on the land almost regardless of environmental constraints.

Developments which are laid out in response to the character of the land are usually better visually and environmentally.

To help promote this approach, one Connecticut town adopted the regulation shown in the case study as a way to guide the site planning process. Rather than lay out lots first and then mitigate environmental impacts, it requires that important resources be identified first and then lots laid out.

CASE STUDY - Site Analysis Approach

1. Unless waived by the Town Planner, any application for a residential subdivision ... shall include the following materials prepared by a landscape architect, civil engineer, or surveyor licensed to practice in Connecticut:
 - a. a site inventory / analysis map as described below, and
 - b. an overall ... layout plan which responds to the site inventory / analysis map.
2. A pre-application meeting with Town Staff and the Commission is strongly encouraged.
3. If the Commission is not satisfied with the quality of the analysis submitted with the application, it may hire another landscape architect, civil engineer, or surveyor licensed to practice in Connecticut to prepare such analysis and charge the applicant for the cost of such services.
4. The site inventory / analysis map shall identify:
 - a. Primary Conservation Areas:
 - Wetlands, watercourses, and vernal pools,
 - steep slopes (15 percent or more), and
 - 100-year floodplain.
 - b. Secondary Conservation Areas ...:
 - areas within 50 feet of a wetland,
 - areas within 100 feet of a watercourse or a vernal pool,
 - 500-year floodplain,
 - Natural Diversity Database sites,
 - wildlife corridors, mature woodlands, notable individual trees (>18" DBH),
 - ridgelines, scenic views and vistas,
 - stone walls and /or farm hedgerows,
 - key resources identified in the Plan of Conservation and Development ...,
 - proposed open space areas, and
 - soils with moderate to high infiltrative capacities.
5. Areas of the site which are considered Primary Conservation Areas or Secondary Conservation Areas shall be considered for permanent protection which may include preservation as open space deeded to the Town, the ... Land Trust, or another conservation organization acceptable to the Commission.
6. Areas of the site which are not considered Primary Conservation Areas or Secondary Conservation Areas shall be considered potential development areas and lots, streets, trails, and other improvements may be sited in these areas.

CASE STUDY - Environmentally-Friendly Site Planning

An appendix in another Connecticut community's Subdivision Regulations encourages applicants to use the following site design process:

1. Obtain appropriate background information (topography, wetlands, etc.).
2. Create a base map of Primary and Secondary Conservation Areas.
3. Prepare plans for development of the site utilizing the following guidelines:
 - **Avoiding impacts** by protecting natural drainage systems, minimizing the extent of land clearing and disturbance of natural soils, preventing the compaction of natural soils, and preserving soils with infiltrative capacity.
 - **Reducing impacts** by maximizing the extent of pervious areas on the site, increasing the "time of concentration" of drainage systems, and utilizing low maintenance landscapes.
 - **Managing impacts** by using vegetated stormwater systems as close as possible to the source of the runoff, reducing the use of fertilizers and pesticides, and utilizing stormwater treatment systems to reduce pollutant loads and infiltrate runoff.
4. Utilize the following guidelines for site layout:
 - Have road and driveway alignments follow the existing contours to the maximum extent practical to minimize excessive cuts and fills,
 - Use vegetated road shoulders to accept and treat stormwater runoff as close to the paved surface as possible and reduce the size of drainage pipes
 - Layout site improvements (houses, driveways, etc.) in such a manner as to minimize site clearing, soil disturbance, and grading.
 - Preserve the infiltrative capacity of native soils by avoiding disturbing areas of the site where it is not necessary.

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Use All Available Tools To Preserve Open Space	See inside back cover for legend	
Policies	Leader	Partners
1. Use all available tools to help preserve open space.	CC	TPZ, BOS, OLT, SCRWA
2. Maintain an open space action plan and/or a list of priority open space parcels a unifying strategy to guide open space preservation efforts.	CC	
3. Continue to support open space acquisition through the annual operating and capital budgets.	BOS	BOF, CC
4. Consider bonding open space funds in advance of a specific purchase in order to have funds available when opportunities arise	BOS	BOF, CC
5. Take advantage of state and federal grant programs for open space acquisition	CC	BOS, BOF
Initial Tasks		
6. Adopt regulations allowing for more flexible residential development patterns (such as “conservation development”) which will help preserve open space.	TPZ	

Open Space



Woodland Trail



Paved Greenway Trail



COMMUNITY CHARACTER

6

Overview

While the term “community character” might mean different things to different people, this phrase is used in the Plan of Conservation and Development to refer to those features that contribute to the overall quality of life for residents by enhancing the quality of the overall physical environment. Community character essentially consists of physical resources that make Orange special to its residents.

Community character is a core value of the community and an important element of the Plan ...

Farms



Scenic Resources



Community Spirit



Encourage Farmland Preservation

Over the course of its history, Orange has been a rural and farming community. However, agriculture uses in the Town are challenged due to farm economics, generational transfer issues, and other factors.

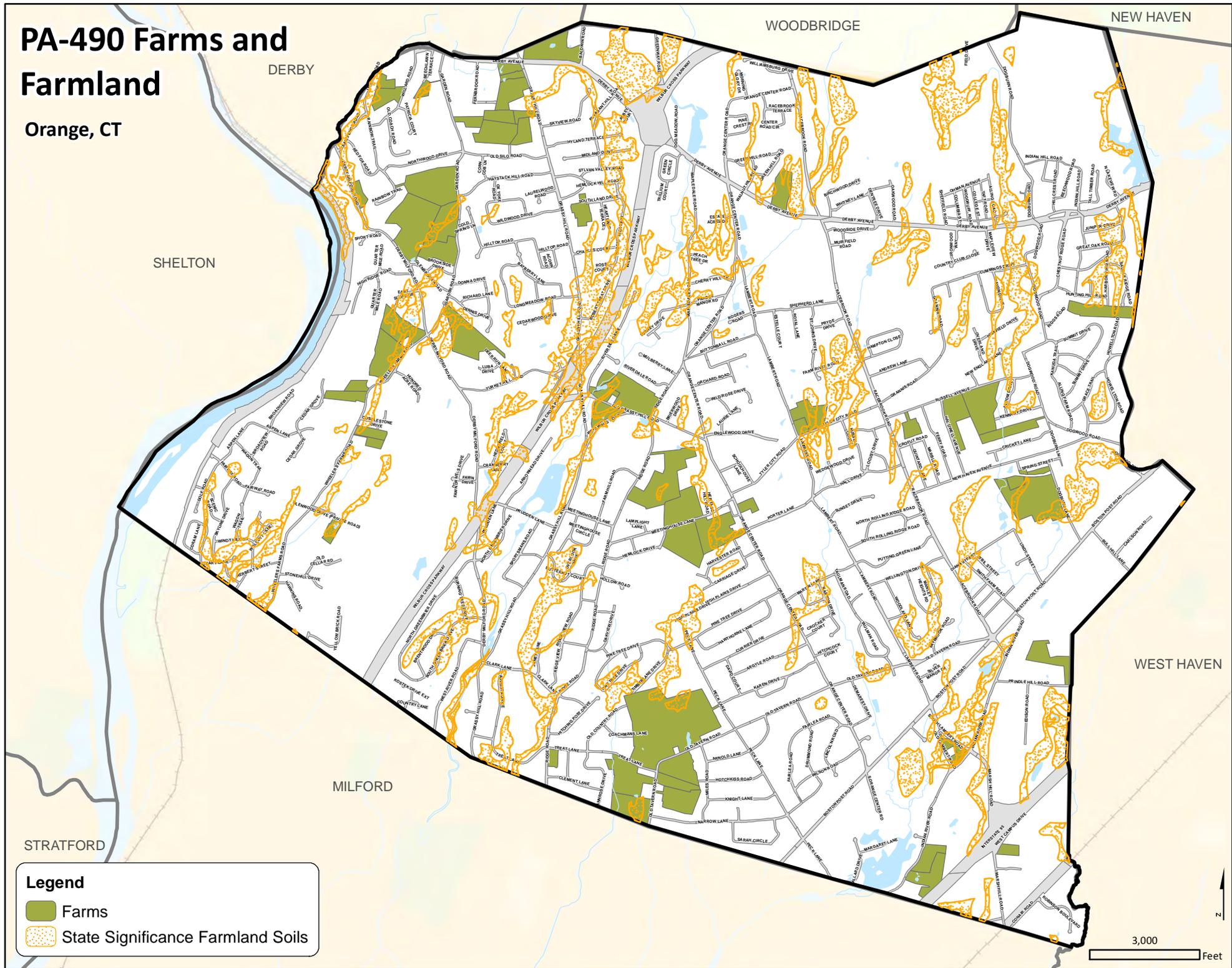
To enhance the rural character of the community, Orange will continue to seek ways to support agriculture locally:

- Continue support for reduced local tax assessment on agricultural lands (PA-490 farm assessment)
- Continue to lease Town land to farmers, as appropriate.

Encourage Farmland Preservation	See inside back cover for legend	
Policies	Leader	Partners
1. Seek to preserve existing agricultural lands and lands that have potential for agricultural use, including purchase of development rights.	CC	BOS, TPZ, OLT
2. Continue to seek ways to support local farms and farmers.	CC	BOS, TPZ, OLT
3. Continue with reduced local tax assessment on agricultural lands (PA-490 farm assessment).	Staff	
4. Continue to lease Town land to farmers.	BOS	CC
Initial Tasks		
5. Consider adopting a “right to farm” policy.	BOS	CC

PA-490 Farms and Farmland

Orange, CT



STRATFORD

Legend

-  Farms
-  State Significance Farmland Soils

3,000 Feet

Use Assessment (PA 490)

The use assessment program (PA 490) enhances the perception of open space in Orange since it helps land remain undeveloped longer and it reduces the pace of growth.

The program contains three major components:

- Farm land (designated by the assessor if an active farm),
- Forest (designated by the assessor or the state forester), and
- Open space (eligible land must be identified in the Plan of Conservation and Development and adopted by Town Meeting).

Preserve Undeveloped Land

Community character often comes down to the perception of the amount of undeveloped land in a community. As a result, Orange has programs in place that help retain undeveloped land as long as possible.

Section 12-107 of the Connecticut Statutes allows a community to assess land by its use value (farm, forest, or open space) rather than its market value. The use assessment reduces the tax burden on the properties and reduces the possibility that land will be put into development if people cannot afford the taxes. If land is sold or developed within 10 years of its enrollment in the program, there is a provision for partial recapture of the taxes foregone.

Properties in Orange are eligible for the “farm” assessment program and the “forest” assessment program based on criteria established in the statutes and state guidelines. In terms of the “open space” assessment program, the POCD recommends that Orange continue this program and consider extending eligibility to land which is residentially zoned and in excess of 5 acres (but only for that portion of the property in excess of the minimum lot area requirement. This can be accomplished by adopting the above policy at a Town Meeting.

The POCD also recommends that Orange consider setting the assessment values for PA-490 property as low as possible.

Preserve Undeveloped Land		See inside back cover for legend	
Policies	Leader	Partners	
1. Continue to encourage the retention of undeveloped land.	CC	BOS, TPZ, BOF	
2. Continue with the PA-490 “farm” assessment and “forest” assessment programs.	Staff		
3. Consider using the lowest possible land values for the PA-490 program (farm, forest, open space) in order to preserve undeveloped land.	Staff	BOS, BOF, CC	
Initial Tasks			
4. Consider adopting a revised PA-490 open space assessment policy at Town Meeting to offer a reduced local tax assessment for oversize residential parcels.	BOS	BOF, CC, TPZ	

Protect Scenic Resources

Orange has a number of scenic areas and resources that help define the character of the Town and enhance the overall quality of life. Efforts will be directed to preserving stone walls, barns, farm-type fences, and other “rural” features that contribute to community character where appropriate. Threats to scenic areas and resources include insensitive siting of development, installation of privacy fences, and indiscriminate tree cutting.

While roadways are only about 10 percent of Orange’s land area, they can have a disproportionate impact on the perception of community character. For this reason, Orange might consider:

- adopting a scenic road ordinance to preserve the character of existing scenic roads, and
- amending current road construction standards to ensure that new roads become the scenic roads of the future.

Protect Scenic Resources	See inside back cover for legend	
	Leader	Partners
Policies		
1. Seek to preserve and protect scenic areas and resources.	CC	TPZ, PW, TC
2. When development will affect scenic resources, seek to preserve or relocate scenic resources such as stone walls, barns, fences, and other scenic resources that are visible from public streets.	TPZ	CC
3. Maintain the low intensity nature of the Route 34 corridor.	TPZ	
Initial Tasks		
4. Adopt regulations to consider scenic areas and resources as part of any land use application.	TPZ	
5. Consider adopting a scenic road ordinance and/or designating scenic roads.	BOS	CC, TPZ
6. Review current road construction standards to ensure that roads in new subdivisions become the scenic roads of the future.	TPZ	PW
7. Consider establishing an “adopt-a-road” program with local organizations in order to promote litter control and enhance community character.	OEDC	CC

Route 34

The fact that Route 34 is a relatively undeveloped road corridor (compared to Derby and West Haven) is a point of local pride.

The community has indicated it would like to see the scenic nature of Route 34 maintained in order to maintain community character along this busy thoroughfare.

Scenic Roads

Some of the roads in Orange which are recognized as particularly scenic roads include:

- Meetinghouse Road
- Lambert Road

National Register of Historic Places

National Register Districts

- Orange Center Historic District

National Register Places

- Rising Sun Tavern
- William Andrew House
- Henry Miller House
- Co. Asa Platt House

State Register of Historic Places

Properties on the National Register are also automatically listed on the State Register of Historic Places.

Local Historic Districts

- Orange Center

Protect Historic Resources

Orange contains a number of historic resources and such resources contribute to the overall character of the community. Some of the main resources are listed in the sidebar. Overall, it appears there are appropriate provisions in place to protect historic resources.

The main organizations involved with historic preservation include the Orange Historical Society (a non-government organization), the Orange Center Historic District Commission, and the Municipal Historian.

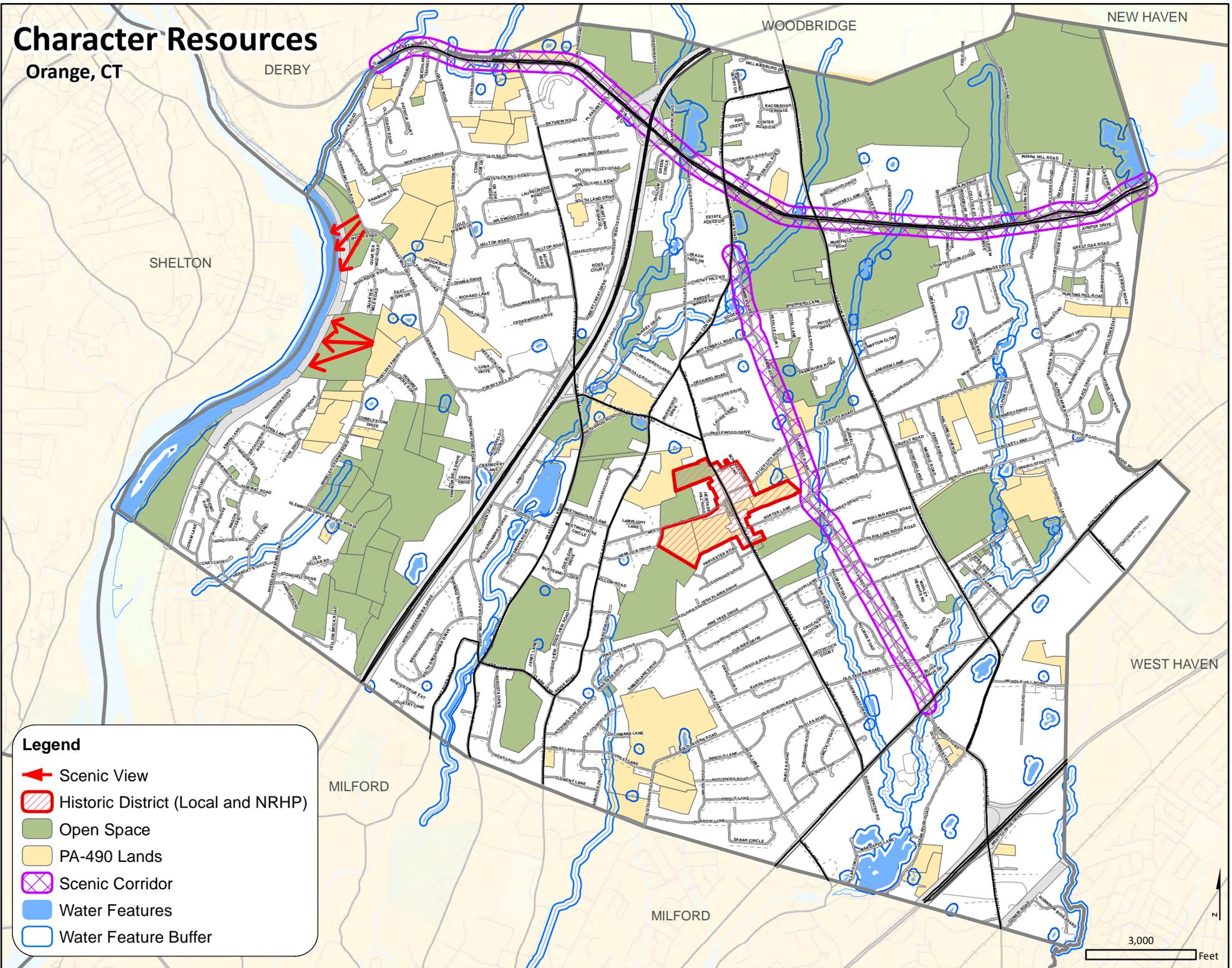
The most effective means of protecting historic resources include:

1. Responsible ownership or sensitive stewardship,
2. Local historic districts with regulatory boards,
3. Village districts overseen by a Town Plan and Zoning Commission,
4. Use of historic overlay zones and adaptive re-use provisions in zoning regulations.
5. Adoption of tax abatement programs.
6. Designation on the State or National Register of Historic Places.

Protect Historic Resources		See inside back cover for legend	
Policies	Leader	Partners	
1. Continue to identify historical and archeological resources.	OHS	MH	
2. Continue to protect historical and archeological resources.	HDC	TPZ	
3. Continue to promote and support sensitive ownership of historical and archeological resources.	OHS	HDC	
4. Promote educational programs about historic and archeological resources.	OHS	MH	
5. Increase awareness of historic / archeological resources through appropriate signage and displays.	OHS		
Initial Tasks			
6. If desired in the future, consider adopting a demolition delay ordinance that will provide time to explore and review alternatives to demolition (for structures of a certain age).	BOS		

Character Resources

Orange, CT



Legend

-  Scenic View
-  Historic District (Local and NRHP)
-  Open Space
-  PA-490 Lands
-  Scenic Corridor
-  Water Features
-  Water Feature Buffer

3,000 Feet

N

Design Review

Orange residents have indicated they want new development to enhance local architectural style and character rather than detract from or dilute from the overall character which makes Orange special.

Yet, regulating architectural design can be challenging because design can be a subjective issue. What may qualify as "good design" to some, others may see as visually incompatible or inappropriate.

On the other hand, a well-developed design review process can foster an improved and deeper understanding of community design and mitigate the subjective nature of reviewing architectural design.

The design review process would generally be utilized for development of:

- multi-family uses,
- business uses,
- institutional uses,
- special permit uses, and
- other uses that could have a significant overall impact on the community.

Promote Architectural Character

Architectural design also influences the character of a community. Buildings that complement each other and are consistent with local architectural styles will enhance community character. However, when buildings do not reflect the established scale and style of local architecture they negatively affect community character.

Some communities have established a formal design review process with accompanying standards to help ensure that new and existing architectural styles are compatible.

If Orange wanted to address architectural character, the Town Plan and Zoning Commission could move beyond the current informal design review process and establish a design review board with members appointed from the community at large. This board would review plans for commercial uses and special permits in residential zones submitted to it by the Commission. The design review board would then provide formal comments to the Commission about how to improve the design of buildings and sites.

Since the design review comments occur during the time period between receipt of an application and action by the Commission, it should not extend the decision timetable for an applicant. In addition, since the comments from the design review board are advisory to the Town Plan and Zoning Commission, the Commission could choose to not impose conditions that it considered impractical or unrealistic.

Promote Architectural Character		See inside back cover for legend	
Policies		Leader	Partners
1. Promote architectural character and community design as part of new development.		TPZ	DRB
Initial Tasks			
2. Consider formalizing the design review process for commercial uses and for special permit uses in residential zones, including establishing a separate design review board, if appropriate.		TPZ	
3. Encourage any design review board to establish and maintain design guidelines to advise applicants of desirable and undesirable architectural treatments of buildings and sites.		DRB	TPZ

Promote Community Spirit

Community spirit is another indefinable, but indispensable community element that contributes to the overall character of Orange. Spirit is the feeling residents have about their community and how it projects to the outside world. It is about community pride and positive impressions and fostering positive actions and results within the community. It is all about enhancing the overall quality of life in Orange.

Promote Community Spirit	See inside back cover for legend	
Policies	Leader	Partners
1. Continue to encourage community and civic activities that promote and enhance community spirit.	Town	
2. Continue to support local parades, Orange Country Fair, and other community events.	Town	
3. Maintain a community calendar to inform people of upcoming events.	Town	
4. Continue to use Orange Government Access Television (OGAT) to keep residents informed about community affairs.	Town	
5. Continue and enhance programs to recruit volunteers.	Town	
Initial Tasks		
6. Recognize local volunteers through a picnic, a “volunteer of the year designation” or other means.	BOS	

Memorial Day Parade



Orange Country Fair



Orange Country Fair



Community Concert



SUSTAINABILITY & RESILIENCY

7

Overview

For the purposes of this Plan, “sustainability” refers to the philosophy of encouraging activities that allow present generations to meet their needs without compromising the ability of future generations to meet their needs. The term “resiliency” refers to the community’s ability to readily recover from sudden changes or adversity.

Much of Orange was built during a time when it was assumed that resources to support growth and development patterns were unconstrained and that major changes were unlikely to occur and that the environment would support such growth. While this still may be the case, it seems prudent to evaluate alternative scenarios and the possible implications of those scenarios. If we are to enhance the character and quality of life for present and future generations, being a sustainable and resilient community – able to adapt to possible future changes – may be especially important.

Sustainability and resiliency are newer issues for Orange to consider as part of the Plan

...

Sustainability



Resiliency



Promote Sustainability

Promote Energy Conservation / Sustainability - Energy availability and cost are likely to be more significant issues in Orange in the future. This has financial implications for the Town and for all its residents and businesses.

To help be a leader in this effort, the Town will consider preparing and implementing a “sustainability plan”. This could be prepared by the Clean Energy Task Force or a similar organization which could evaluate alternative approaches (space heating, electrical consumption, electrical generation, vehicles) and make recommendations to reduce energy usage, increase reliability, and save money.

Some of the key issues to consider might include:

- Preparing an energy conservation action plan to reduce operating costs, reduce lifecycle costs, and lower the carbon footprint of the Town / school buildings.
- Reviewing municipal facilities for energy conservation opportunities (lighting, controls, equipment, building envelope, etc.).
- Investigating opportunities for energy generation (solar, wind, fuel cell, etc.) as a way to lower energy costs and enhance resiliency.
- Identifying ways to involve the community in implementing energy conservation practices.
- Initiating transition to renewable energy for town vehicles (natural gas, electric, biofuels, and hybrids).

Promote Water Conservation - The United States has one of the highest rates of personal water consumption in the world (100 gallons of water per person per day for domestic purposes). Simple changes to some everyday activities can reduce most people’s domestic water use by 10% or more. Orange will encourage water conservation especially since some areas of the community rely on groundwater for domestic use.

Promote Waste Reduction / Recycling - The overall waste stream and recycling is another potential area for investigation and education in Orange. Reducing the waste stream and promoting recycling will be promoted.

Educate Residents About Sustainability Concepts - Efforts will be devoted towards educating residents and school children about sustainability concepts.

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Promote Sustainability		See inside back cover for legend	
Policies	Leader	Partners	
1. Promote energy conservation / sustainability.	CETF	CC, BOS, BOF, PW	
2. Promote water conservation.	CETF	CC, BOS, BOF, PW	
3. Promote waste reduction / recycling.	CETF	CC, BOS, BOF, PW	
4. Educate residents about sustainability concepts.	CETF	CC, PW	

Residential Solar Installation



Rooftop Solar Installation



Water Conservation



Recycling



Recent Major Storms

- Hurricane Irene in 2011, an unusual October 2011 snowstorm
- Storm Sandy in 2012
- winter storm Charlotte in 2013

Promote Resiliency

One of the lessons for Orange from some recent major storms was the value of emergency response capability and emergency preparedness planning. In some of these situations, electrical power was lost to sections of the community and some residents were without heat or water. The Town of Orange activated its emergency response procedures and was able to have emergency shelters, bottled water, and other supplies and services for people that needed it.

Orange will continue to review and improve hazard mitigation plans for recurring events, such as flooding. For example, Orange will continue to assess the vulnerability of public and private infrastructure (e.g., utilities, transportation, structures) to climate change and increased frequency of extreme storms and develop adaptation strategies. This is a good example of a hazard mitigation approach which looks at how Orange might prepare for recurring events or respond to events when they occur.

Orange will also continue to review and improve emergency preparedness plans (single events) in order to be able to respond to these events in the future. Evaluating possible scenarios and preparing for unknown events before they occur is a useful exercise for a community. Such approaches help the community respond in a timely manner with the appropriate tools and resources.

This can also include protecting electrical lines by placing them underground as opportunities present themselves. This could also include establishing “smart grids” to identify the location of circuit interruptions and other problems as soon as possible.

Promote Resiliency	See inside back cover for legend	
	Leader	Partners
Policies		
1. Continue to review and improve hazard mitigation plans for recurring events, such as flooding.	EP	PW, PD, FD
2. Continue to review and improve emergency preparedness plans.	EMAC	PW, PD, FD
Initial Tasks		
3. Assess the vulnerability of infrastructure (e.g., utilities, transportation, structures) to climate change and increased frequency of extreme storms and develop adaptation strategies.	PW	PD, FD