

Town of Hunter

Recommended Model Development Principles for Conservation of Natural Resources *Results from the Local Site Planning Roundtable*



Mountaintop Better Site Design Roundtable

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Acronyms

AASHTO - American Association of State Highway Transportation Officials

ASCE - American Society of Civil Engineers

BSD - better site design

DEC - New York State Department of Environmental Conservation

DEP - New York City Department of Environmental Protection

EAF - Environmental Assessment Form

GCSWCD - Greene County Soil & Water Conservation District

GIS - Geographic Information System

LID - low impact development

NAHB - National Association of Home Builders

NRCS - Natural Resources Conservation Service

DOT - New York State Department of Transportation

SEQRA - New York State Environmental Quality Review Act

SWPPP - stormwater pollution prevention plan

TR- Technical Release

USGS - United States Geological Survey

WAP - GCSWCD Watershed Assistance Program

Acknowledgements

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We would also like to thank the Town of Jewett for hosting two of the Roundtables and all of the subcommittee meetings, the Kaatskill Mountain Club at Hunter Mountain for hosting the kick-off workshop, the New York State Department of Conservation, and the New York City of Environmental Protection for their partnership and assistance in the Roundtable.

Staff and consultants for the project included Jeff Flack, Executive Director and Michelle Yost, Watershed Program Coordinator of the Greene County Soil & Water Conservation District; Lillian Stewart and Emily Ramlow, interns with the Greene County Soil & Water Conservation District; Barbara Kendall of Kendall Stormwater Services and Liz Axelson of Morris Associates.

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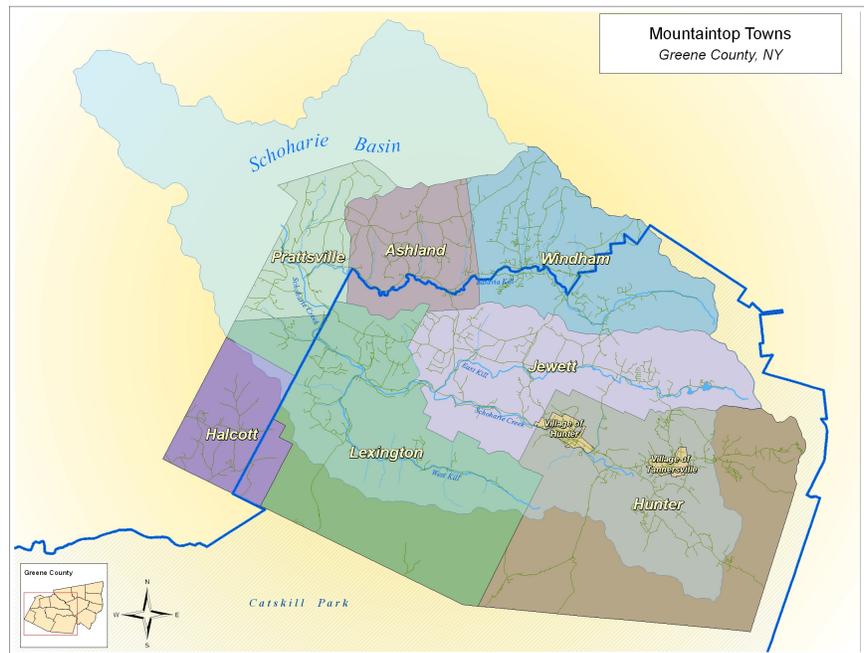
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Executive Summary and Highlights

Executive Summary

This document, a product of the Mountaintop Better Site Design Roundtable, is the result of a year- long consensus process initiated by the Greene County Watershed Assistance Program. The purpose of the project was to review existing development codes and identify regulatory barriers to Better Site Design (BSD) and Low Impact residential and commercial development at the site level in the Mountaintop communities. Revised stormwater

regulations issued by the New York State Department of Environmental Conservation (DEC) and the New York City Department of Environmental Protection (DEP) in 2010 require the use of BSD principles and LID practices when issuing permits, therefore building flexibility into local ordinances will allow more treatment options for applicants to meet regulatory controls.



A cross-section of local government, non-profit, environmental, business, and community professionals formed the membership of the Roundtable. Through a consensus process, members of the Roundtable selected and adapted various Better Site Design Principles to meet the needs and current conditions within their own community. Roundtable recommendations include proposed code and ordinance revisions or recommended planning procedures that would increase flexibility in site design standards and support the implementation of environmentally beneficial practices in accordance with zoning, site plan and subdivision laws.

The 19 Better Site Design Principles adapted by the Town of Hunter Roundtable members are designed to meet the following objectives, which are consistent with DEC and DEP rules and regulations:

- (1) reduce overall site impervious cover;
- (2) preserve and enhance existing natural areas;
- (3) integrate stormwater management; and
- (4) retain a marketable product.

Code modifications and other Roundtable recommendations for 19 of the Principles were crafted to provide flexibility, support, and guidance for developers implementing Better Site Design. The Roundtable process focused on model development principles that were deemed pertinent to local conditions.

Highlights

Source Control for Stormwater Management

- Encourages use of green infrastructure practices such as rain gardens, bioretention, stormwater planters, and vegetated swales to slow stormwater down, soak it in and spread it out.
- Recommends the Town adopt "Proposed Green Infrastructure and Runoff Reduction Amendments for Local Laws" as an amendment to the subdivision or zoning law (see Appendix 2).
- Promotes education on stormwater management by providing information at local town and village offices.
- Recommends long term maintenance of stormwater management practices and green infrastructure through maintenance agreements.

Preservation of Natural Features and Conservation Design

- Promotes using natural resource inventory information to identify appropriate areas for development as well as important natural resources.
- Recommends coordination of development applications across the mountaintop by providing the same checklists for all communities, providing consistency for project applicants.
- Considers amending the zoning/site plan/subdivision law to implement resource analysis review, or concept plan review, as an official procedural step.
- Supports guiding development away from sensitive areas such as floodplains, streams, wetlands, erodible soils and steep slopes to protect residents and the community from flood damage and severe erosion on steep slopes.

Reduction of Impervious Cover - Streets, Parking and Lot Development

- Encourages techniques to slow water down before it reaches streams and roadside ditches by installing improvements to handle runoff at the source.
- Supports a minimum road travel-way width of 18 feet and alternative cul-de-sac designs to minimize impervious surfaces and allow for flexible road designs in the challenging mountaintop terrain.
- Recommends shared parking, permeable pavements and green infrastructure in parking lots to reduce impervious surfaces and allow for infiltration of stormwater where feasible.

Introduction

Purpose

This document presents specific recommendations on how to integrate innovative best management practices into local site design within the Town of Hunter in order to improve development projects, control stormwater at the source on both small and large projects, and support applicants facing regulatory stormwater requirements. The recommendations were crafted in conjunction with community residents representing a variety of local interests, both public and private, that participated in the Better Site Design Roundtable initiated by the Greene County Watershed Assistance Program (GCWAP).

Background

Protecting water resources and landscape character while encouraging economic development requires local governments, developers, and site designers to consider changing the way that land is developed. Deciding where to allow or encourage development, promote redevelopment, and protect natural resources are difficult issues that jurisdictions have to balance.

Furthermore, the Town of Hunter is located in the northern Catskills in the New York City Watershed. In addition to state and federal law, municipalities in the Watershed must follow New York City Department of Environmental Protection (DEP) regulations to protect the drinking water supply. Land development is regulated by the New York City Watershed Rules and Regulations and the New York State Department of Environmental Conservation (DEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Sites (GP-0-10-001). See Appendix 1 for graphics from the Mountaintop Low Impact Development (LID) Guide depicting the overlap between New York City and New York State stormwater regulations.

While effective site plan and subdivision review, zoning (where applicable) and comprehensive planning are critical, communities should also explore measures to minimize the impact of impervious cover, maintain natural hydrology, and integrate stormwater treatment within development projects. These recommendations, which are consistent with Stream Management Plans adopted by the local communities, are land planning techniques that reduce the potential impact of development on water quality and flood hazards.

Toward this end, the Greene County Watershed Assistance Program (GCWAP) assisted six municipalities in the Catskill mountains of New York State with a better site design (BSD) roundtable planning process. The purpose of a local site planning roundtable is to examine, choose and adapt 28 Better Site Design principles for local application by identifying how

local codes and ordinances can be modified to meet three basic objectives:

1. Reduce overall site imperviousness.
2. Preserve and enhance existing natural areas.
3. Integrate stormwater management.

Through the Roundtable process, the participating municipalities examined their local codes and planning procedures to determine if they encourage or discourage various low impact site design principles. Low impact design using green infrastructure is now required by DEC and DEP for projects that must prepare a full Stormwater Pollution Prevention Plan (SWPPP). Use of LID with green infrastructure practices also provides benefits for smaller projects that may not require a SWPPP by slowing down and soaking in stormwater, doubling as landscaping, and enhancing the aesthetics of development projects, village centers and hamlets. Using grant funds from the Catskill Watershed Corporation, the GCWAP commissioned Kendall Stormwater Services, LLC, assisted by Morris Associates, PC, (the consultants) to guide the communities through the code review and consensus process for proposing local code changes and planning procedures.

The Town of Hunter was one of six communities involved in the Mountaintop Better Site Design Roundtable. This document provides the results and recommendations of the Local Site Planning Roundtable for the Town of Hunter.

The 28 Better Site Design Principles act as benchmarks upon which more specific code and ordinance recommendations were adapted for the Town of Hunter. The benefits of applying these principles are summarized below:

Benefits of Applying the Model Development Principles

Local Government:

- Assist with stormwater regulations compliance
- Streamline the planning process
- Address localized flooding and stormwater runoff problems
- Enhance community character

Homeowners:

- Increase property values
- Create more pedestrian-friendly hamlet areas
- Less cost for stormwater treatment
- Result in a more attractive landscape
- Reduce car speed on residential streets
- Promote neighborhood designs with a sense of community

Developers:

- Provide flexibility in design options
- Reduce development costs

- Streamline the planning process
- Allow for more options in locating stormwater facilities

Environment:

- Protect stream corridors
- Protect local stream and lake quality
- Generate less stormwater pollution
- Reduce soil erosion during construction
- Protect forests, wetlands, and habitats

Mountaintop Better Site Design Roundtable Process

Mountaintop Better Site Design Roundtable members convened over a twelve-month period to become familiar with the Better Site Design Principles, to review existing codes and ordinances, to work in subcommittees, and to reach consensus on a final set of recommendations. The Roundtable consisted of 30 members representing a wide range of volunteer and professional backgrounds and experience related to local development issues. The process included the following steps:

Universal Low Impact Development Manual for Mountaintop Communities - April - June 2011

The consultants worked with GCWAP to prepare a Low Impact Development Manual that identifies structural and non-structural design options to promote on-site stormwater management where possible, taking into account mountaintop topography, soils and rural settlement patterns. The manual is available at:
<http://www.gcsxcd.com/swp/wap/mbsd.html>

Better Site Design Roundtable Kickoff Meeting - June 22, 2011

About 35 interested people from across the mountaintop participated in the kick-off Better Site Design workshop. Those attending included local government representatives, developers, engineers, county agencies, and regulatory agencies. The kickoff meeting introduced attendees to the Better Site Design Principles, put into context the aims of the roundtable process within the mountaintop area, and presented for comment an outline of a new Low Impact Development Manual for the Mountaintop Better Site Design Roundtable.

Review of Local Codes – July 2011 – September 2011

Supported by a grant from the Catskill Watershed Corporation to the Greene County Soil & Water Conservation District and assisted by interviews with community members, the consultants used the "Code and Ordinance Worksheet for the Mountaintop Better Site Design Roundtable" to analyze the local codes, laws and ordinances of the six municipalities in relation to 28 Better Site Design Principles.

Roundtable #1 – October 26, 2011

Roundtable participants met and heard a presentation of the Code Review results from the six municipalities. Roundtable members then discussed the results and reviewed the goals and objectives of the project. Members then divided into two subcommittees according to expertise and interest:

- Residential Streets & Lots
- Conservation of Natural Areas

The subcommittees discussed which Principles they would accept or decline to work on and identified possible code changes or improved planning processes to discuss in subsequent meetings.

Subcommittee Meetings and Consensus Building – November 2011 - February 2012

Both subcommittees met in November 2011 and January 2012 to discuss a subset of the 28 Better Site Design Principles and develop preliminary recommendations.

Roundtable #2 – March 23, 2012

The Roundtable participants met together to review and comment on the work of the subcommittees so far. Members included a wide range of community participants (elected and appointed officials), engineers and designers, developers, and government officials representing NYSDEC and NYCDEP Stormwater Programs.

Subcommittee Meetings and Consensus Building – April 2012 - May 2012

Both subcommittees met in April and May 2012 to complete work on the Better Site Design Principles they had selected and to develop final recommendations.

Draft Recommendations Documents - May - June 2012

The consultants worked with the GCWAP to organize code change and planning procedure recommendations for each participating community into a final document for that community to consider for adoption. Some of the recommendations were the same for all six municipalities, however for some of the better site design principles each municipality developed their own recommendations to reflect community needs.

Roundtable #3 - June 27, 2012

The Roundtable participants shared the final recommendations with community members at the final Roundtable.

Roundtable Membership

This document of recommended development principles was created by a cross-section of professionals and volunteers representing local government, engineering and design firms, development, village and town residents who participated in the Mountaintop Better Site Design Roundtable.

Members of the Roundtable provided volunteer and technical expertise to tailor the model development principles for each of the six municipalities. These recommendations reflect the members' professional and personal experience and do not necessarily carry the endorsement of the organizations and agencies represented by their members.

We thank the following members of the Mountaintop Better Site Design Roundtable for their time, expertise and dedication to this project:

Gene Beers Town of Jewett Planning Board	Christopher Hack Village of Tannersville Village Board of Trustees	Kathie Tatara Delaware Engineering Engineer
Lynn Byrne Town of Lexington Councilwoman	Paul Hennessy Town of Windham Planning Board	Richard Volpi Village of Hunter Planning Board
Roy Carlson Town of Ashland Planning Board	Robert Hermance Town of Lexington Planning Board Chair	Stephan Walker Town of Windham Supervisor
Sondra Clark Town of Ashland Planning Board Chair	William Maley Village of Hunter Mayor	Dave Weiman Town of Windham Planning Board
Beverly Dezan Town of Lexington Planning Board	Leigh McGunnigle Village of Tannersville Village Board of Trustees	Jeff Flack Greene County Soil & Water Conservation District
Doug Van Deusen Lamont Engineers. P.C. Engineer	Carol Muth Town of Jewett Supervisor	Michelle Yost Greene County Soil & Water Conservation District
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Jesse Fraine Engineer Delaware Engineering	Robert Pelham Town of Windham Councilman	Liz Axelson Facilitator Morris Associates
Harold Goldberg Village of Hunter Planning Board	Tom Poelker Town of Windham Planning Board	Emily Ramlow Student Conservation Association
Karl Gonzalez Town of Windham Councilman	Paul Slutzky Village of Hunter Planning Board Chair	Lillian Stewart Student Conservation Association

Recommended Model Development Principles

Through a consensus process, members of the Town of Hunter participating in the Mountaintop Better Site Roundtable adapted 19 out of 28 Better Site Design Principles to meet the needs and current conditions within the Town of Hunter. Roundtable recommendations include specific code and ordinance revisions for 19 of the Principles that would increase flexibility in site design standards, promote awareness of the tools that are available to landowners, and support the implementation of environmentally beneficial practices in accordance with the Town's current subdivision & site plan laws and road specifications, where applicable. The Principles are divided into three categories:

1. Source Control for Stormwater Management
2. Preservation of Natural Features and Conservation Design, and
3. Reduction of Impervious Surfaces (Driveways, Streets and Parking Lots)

Source Control for Stormwater Management

Principle #1: Runoff Reduction

Use non-structural stormwater control practices and engineered green infrastructure techniques to slow down and infiltrate stormwater close to development and impervious surfaces.

Recommendations

The Roundtable supports this principle and endorses the following recommendations:

1. Provide more tools in municipal codes for the applicant and stormwater pollution prevention plan (SWPPP) designer to meet state and city regulations for runoff reduction and stormwater management. For this purpose, the Roundtable participants recommend that the Town of Hunter adopt the "Proposed Green Infrastructure and Runoff Reduction Amendments for Local Laws" as an amendment to local laws (see Appendix 2).
2. Local boards and developers should look for creative means to meet water quality reductions the regulators are looking for, e.g., non-structural stormwater practices and green infrastructure.
3. Incorporate maintenance requirements and responsibility for stormwater practice maintenance in local codes and procedures. For projects that the local boards have determined need a legal mechanism between the municipality and the property owner, Roundtable members recommend that the Planning Board use the "Sample Maintenance Agreement" included as Schedule B of the "Proposed Green Infrastructure and Runoff Reduction Amendments for Local Laws." (see Appendix 2).
4. Consider maintenance of LID practices as part of normal landscaping and upkeep. Some practices can be designed to be self-maintained since there is a strong second home

market and people may not be available for clean up. For guidance on stormwater practice maintenance local staff and boards should refer developers and property owners to the Mountaintop LID Manual at:
<http://www.gcswwcd.com/swp/wap/mbsd.html> (hard copy available at the town hall) The LID Manual summarizes maintenance requirements from the New York State Stormwater Management Design Manual, Appendix G at:
http://www.dec.ny.gov/docs/water_pdf/swdmappendixg.pdf.

5. Consider charging the facility or landowner for back maintenance when the municipality bears the cost, such as the mechanism used by the Town of Jewett where the Town levies maintenance costs through property taxes.
6. Develop and distribute to local applicants a packet of information on state, city, and local (where applicable), stormwater requirements including information about green infrastructure and erosion and sediment control practices (see Principle #16). The packet should cover the design, construction, monitoring, and maintenance phases of a development project and include relevant websites and resources. Distribute as fact sheets Figures 2, 3 and 4 from the Mountaintop LID Manual to illustrate the thresholds that trigger a stormwater permit (Appendix 1). All information should be available in both paper and electronic (PDF) form.
7. For small building lots that fall under the threshold for New York State (one acre) and New York City (two acres) stormwater regulations, provide education to building permit applicants including the benefits of infiltration using green infrastructure and information on construction of rain gardens, stormwater planters, vegetated swales, etc. Also provide information on what is regulated under other laws (such as New York State Protection of Waters and Protection of Wetlands, Articles 15 and 24) that may be applicable to their project.

Rationale

Overall benefits: By treating and infiltrating stormwater at the source using better site design (BSD) and LID, the volume and rate of stormwater runoff will be reduced, pollution will be treated on site through plants and soil, and the need for end-of-pipe treatment options will be reduced. BSD and LID are integrated management approaches to landscape design and stormwater treatment that focus on how the developed site is planned and designed to minimize hydrological impacts. BSD/LID techniques incorporate stormwater management requirements by utilizing natural stormwater treatment through conservation design and riparian buffers as well as engineered practices such as rain-gardens and swales to reduce impervious area and increase infiltration.

Streamlining the development process: Incorporating green infrastructure solutions at the beginning of the design phase can potentially make the permitting process easier, lowering overall costs and benefitting the applicant, the designer and the community.

Code amendments: The proposed green infrastructure amendments (Appendix 2) provide a simple mechanism for local boards to ask for LID and BSD practices to achieve runoff reduction goals. The amendments consist of four short paragraphs that clarify the purpose,

definitions, and SWPPP requirements for city and state regulations. The amendments reference the New York State Stormwater Management Design Manual (SWDM), bringing consistency to the local codes and awareness to project applicants who might not otherwise be familiar with green infrastructure principles. DEP refers applicants and municipal boards to the SWDM as the technical standard for vegetation treatments that should be applied in stormwater management practices.

Maintenance: While DEC has regulatory authority to ensure proper installation and maintenance of practices in a SWPPP, and the responsible party for O & M of stormwater facilities should be identified in the SWPPP, enforcement is an issue. Long-term maintenance can be reduced if stormwater management using green infrastructure is installed with low-maintenance native plants and is treated as part of a regular landscaping upkeep.

Principle #2: Vegetated Open Channels

The Roundtable members combined discussion of vegetated swales with the runoff reduction discussion (Principle #1), rather than as a separate principle.

Principle #3: Rain Gardens and Bioretention Areas

Use bioretention and rain gardens for slowing down and treating stormwater in commercial and residential development and redevelopment, using criteria in the NYS Stormwater Management Design Manual to design these practices.

Recommendations

The Roundtable supports this principle and endorses the following recommendations:

1. Add language to local codes that encourages use of bioretention (Fig. 1) and rain gardens where appropriate. For this purpose, the Roundtable participants recommend that the Town of Hunter adopt the "Proposed Green Infrastructure and Runoff Reduction Amendments for Local Laws" as an amendment to the zoning law (see Appendix 2), since these amendments include bioretention and rain gardens in the definition of green infrastructure.
2. Provide information to applicants and contractors on how to apply bioretention and rain gardens as well as other LID practices in the mountaintop area. For this purpose, distribute Tables 6, 7 and 8 from the Mountaintop LID Manual, which describes the land use and site characteristics appropriate for different practices. Also, distribute or make applicants and contractors aware of the GCSWCD website references for native plants in Appendix 6 of the Mountaintop LID Guide, "Plants and Ground Covers for Various Site Conditions" at: <http://www.gcswcd.com/swp/wap/mbsd.html>. Link local municipal websites to the GCSWCD website for easy reference.

Rationale

Bioretention areas and “rain gardens” (a type of bioretention area) installed on individual lots can result in a 50% annual reduction in runoff volume from residential development projects and can reduce the amount of pollutants entering local water resources (Pitt, 1987), while providing landscaping and visual enhancement. By adding the green infrastructure amendments to local codes and providing information on bioretention and rain gardens to applicants, people will become more aware of the types of practices that complement landscaping for development projects. By providing information to local applicants about DEC and DEP green infrastructure requirements at the beginning of the planning process, application processes will be streamlined, potentially saving costs for developers.

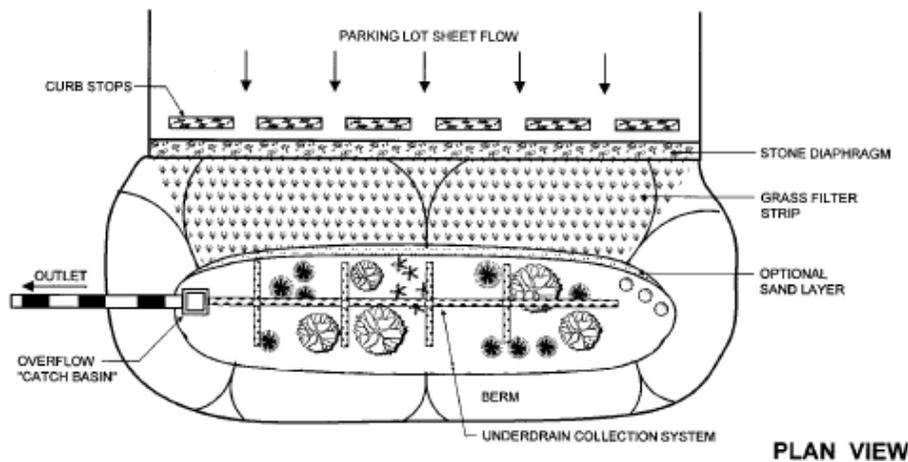


Figure 1. Bioretention Area (NYSDEC, 2001)

Principle #4: Rooftop Runoff

Allow rooftop runoff to be discharged to yard areas, and allow temporary ponding of stormwater on front yards where local flooding is not a concern. Capture rooftop runoff with control techniques such as cisterns, rain barrels, rain gardens, stormwater planters and green roofs designed using NYS Stormwater Management Design Manual criteria or equivalent.

Recommendations

The Roundtable supports this principle and endorses the following recommendations:

1. Encourage strategies for use of on-lot LID practices to handle rooftop runoff from new development. For this purpose, the Roundtable participants recommend that the Village of Hunter use language adapted from the NYS Stormwater Management Design Manual to amend the zoning code as follows, “*Encourage development designs that reduce runoff volumes and rates by directing runoff from residential rooftop areas and upland overland runoff flow to designated pervious areas where feasible using practices such as stormwater planters, green roofs, and rain gardens. Include grading considerations for proper movement of water in the design of such practices.*”

2. Provide education to applicants on the types of practices available for handling on-lot stormwater and rooftop runoff, under what conditions each practice is suitable, and resources to assist with their implementation. To meet this goal, provide applicants with the copies and/or web links to the Mountaintop LID Manual Tables 6, 7 and 8 as well as Appendices 5 and 6.

Rationale

Where topography, soils and land uses are suitable, infiltration of stormwater on or near the development site reduces flooding and contributes to recharge of groundwater supplies. LID practices such as stormwater planters, rain gardens, green roofs, and rain barrels installed on individual lots can result in a 50% annual reduction in runoff volume from residential development projects and can reduce the amount of pollutants entering local water resources (Pitt, 1987).

Principle #5: Infiltration

The Roundtable members addressed stormwater infiltration practices in the Runoff Reduction and Rooftop Runoff discussions (Principles #1 and 4), rather than as a separate principle.

Principle #6: Stormwater Ponds and Stormwater Wetlands

The Roundtable members addressed stormwater ponds and wetlands in the runoff reduction discussion (Principle #1), especially as that discussion relates to maintenance. Ponds and wetlands were not discussed as a separate principle.

Principle #7: Hydrodynamic Separators

Discourage hydrodynamic separators as a stormwater management practice in suburban and rural areas to prevent trapping of amphibians and other small animals.

Roundtable members determined that this principle is not applicable to the mountaintop communities since hydrodynamic separators are used on a limited basis, primarily in downtown village and hamlet areas where tight retrofits are needed because of land constraints.

Preservation of Natural Features and Conservation Design

Principle #8: Community Planning for Natural Resources

Consider natural resource protection in land use decisions by compiling and maintaining a municipal natural resource inventory (NRI) or open space inventory (OSI) that is used by the

local boards in plan review.

Recommendations

The Roundtable supports this principle and endorses the following recommendations:

1. Use existing inventory and map resources created for the Town to identify what resources would be impacted by development. For example, streams and their corridors; wetlands and adjacent buffer areas; floodplains; wooded and steeply-sloped areas are sensitive areas and important habitats. Specific town-wide inventory, mapping and assessments have been done by GCSWCD (resource maps) and Delaware Engineering (Mountaintop Regional Watershed GIS Mapping Project) to guide applicants and the planning board in site plan reviews. Map and data resources and related internet links are available on the GCWCD website at: <http://www.gcswcd.com/maps-data.html>.
2. Local boards should refer to community wide mapping completed as a result of comprehensive planning or other resource inventories when considering subdivision or site plan applications. For example, Lexington's Stream Corridor Overlay (SCO) mapping is an important resource for development site resource analysis and locating development in less sensitive areas.
3. The Planning Board should consider requiring a resource analysis map that would be submitted prior to a submission of a concept or sketch subdivision or site plan. The resource analysis map should show the relationship of a property within its neighborhood context, including natural and built features. Initially, the use of resource analysis maps could be done as an informal practice as it relates to basic planning and environmental review. Encourage applicants and Planning Board members to use the GCWCD GIS web maps and data resources including aerial photography and other features (floodplains, streams, wetlands, soils, steep slopes and other sensitive areas).
4. Consider amending the zoning law to implement resource analysis review as an official procedural step. A resource analysis map would generally show *"an identification of the site's natural and man-made features which may present assets and liabilities for layout of the proposed buildings and improvements."* Revise checklists for site plan and subdivision applications by repeating the local law changes in the checklists.

Recommended local law language is provided below:

Town of _____ Local Law Section [_____] Resource analysis map.

- *Prior to a submission of a sketch plat for a subdivision / site plan, or when otherwise required by the Planning Board, an applicant must submit a resource analysis map and participate in a discussion with the Planning Board to determine a conceptual plan for the proposed site plan. The submission shall include an identification of the site's natural and man-made features which may present assets and liabilities for layout of the proposed buildings and improvements. This will provide an opportunity for the applicant and the Planning Board to discuss the development, areas planned to remain undeveloped, and general access alignment. This pre-application process is required to assure that the Village development goals are recognized as they may apply to the site in question.*

- *An aerial map at an appropriate scale, showing the relationship of the subject property within its neighborhood context, including natural and built features existing within 2,000 feet of the site should be submitted. This information may be acquired through various readily available sources. This is an initial step to identify natural features such as streams, watercourses, waterbodies and wetlands; steep slopes, erodible soils, areas that are wooded and other sensitive areas.*

Original source: Town of Red Hook (Dutchess County, NY) Code Chapter 120, Subdivision of Land, section 120-23.

5. As an alternative to #4, the Planning Board may consider implementing concept plan review including a resource analysis map. Recommended local law language is provided below:

Town of _____ Local Law Section [_____] Concept Plan review.

(1) This part of review permits an applicant to submit his concept for a subdivision / site plan without incurring the significant costs of detailed planning for discussion with the Planning/Town Board. The Board will review the concept plan as early as possible in the project review to discuss whether the proposal generally complies with the pertinent supplemental regulations herein and the Comprehensive Plan for the Town of _____.

(2) The submittal for concept plan shall contain the following information:

(a) A vicinity map sketched to a scale of 2,000 feet to the inch, showing land owned by the applicant; and indicating the relationship of the site to existing community facilities which serve it, such as roads, shopping, schools, etc.

(b) Resource analysis map(s) of the site showing:

[1] Soil types and boundaries; and bedrock outcrops.

[2] Topography; and steep slopes (over 25%).

[3] Wetlands plus buffer areas; wet areas; water bodies; and watercourses.

[4] One-hundred-year floodplains.

[5] Vistas and viewsheds into or out of the property.

[6] Areas of contiguous forest lands and wooded areas.

[7] Nearby significant topographic features and historical structures.

[8] Existing parklands, recreational and/or public open space.

(c) A conceptual drawing of the entire proposed development showing:

[1] The outer perimeters of the site, including the use of abutting lands and connections to community roads, pedestrian pathways and transportation, water supply and sewage disposal.

[2] Location and identification of proposed uses, structures, including landscaped and open spaces and associated amenities.

[3] An outline of the interior roadway system, parking areas and the connection to existing roadways.

[4] Any other information which would assist in the review of the applicant's concept.

(3) Within 30 days of the submittal of the above materials, the concept plan shall be discussed at a Planning /Town Board meeting. The applicant shall be permitted to present the concept. The Planning /Town Board will provide comments and recommendations about the site, its resources, the concept plan and compatibility with the Comprehensive Plan.

Original source: Town of Pawling (Dutchess County, NY) proposed amendment to Code Chapter 215, Zoning, section 215-31.2.

6. With proper permission, the Planning Board should do an on-site visit of properties that are proposed for land development. The site visit should occur after examination of resource analysis maps and concept or sketch plans. Notification under open meetings law should be done in instances where a quorum of the Planning Board may be present.
7. Coordinate development application checklists so that all of the mountaintop communities have the same checklists. There should be consistency between Towns and Villages for the Applicants' Representatives (Engineers and Surveyors) and for decision-makers.

Rationale

Identifying and retaining natural resources and sensitive areas in their natural state prevents increases in stormwater runoff and related erosion and sedimentation by preserving existing stormwater infiltration areas. The creation of a community-wide inventory and assessment of natural resources and habitats provides a record of resources that are known and are of concern to the community. It fosters awareness of the location of natural areas worthy of preservation that contribute to quality of life and add economic value to nearby properties.

The use of community-wide assessments and resource analysis maps during Planning/Town Board reviews allows a site-by-site assessment to identify the parts of properties that are more appropriate for location of buildings, access and parking areas. For example, the identification of flood prone areas; stream buffers; and wetlands can result in the preservation of natural features that can reduce stormwater runoff and attenuate flood waters. The location of buildings and improvements in areas that are higher and dryer protects both business and community assets from flooding and erosion.

The recommended local law amendments provide best management principles that give the Applicants' engineers and designers more options to meet regulatory controls, making the local regulations strong but flexible. The conceptual plan review process provides the Planning / Town Board with a clear statement of the natural resource and other information that should be requested from the applicant prior to the first meeting. The ability for an applicant or design professional to meet with the Planning/ Town Board early in the process can save the applicant time and expense in the design and review processes. A site's environmental constraints can be identified; and recommendations can be given on site layout and what constitutes a complete application.

A site visit provides information to Planning/ Town Board members that may not be obvious from maps and plans. Mapping resources may not show smaller wetland areas and intermittent streams, which are important aspects of a site's drainage patterns and capacity to retain runoff.

Principles #9 and 18: Locating Sites in Less Sensitive Areas, Habitat Protection and Conservation Overlays

Leave floodplains for flood control by preventing new building and filling in the 100-year

floodplain. Protect steep slopes and highly erodible soils by promoting proper grading techniques and erosion and sediment controls. Provide incentives for development on previously altered sites or in designated priority growth areas. Obtain information about rare or unusual habitats rare species and make the information available to the Planning and Zoning Boards, where applicable. Use habitat protection guidelines or a conservation overlay district to encourage protecting large, contiguous and unaltered tracts of forests, meadow and shrubland complexes, wetlands, stream and river corridors, and areas with high habitat diversity.

Recommendations

The Roundtable supports these principles and endorses the following recommendations:

1. Incorporate language in local laws that prevents development in floodplains. The Planning Board should have the discretion to say “no building in the floodplain area”. Consider using language from the Town of Jewett and Lexington subdivision regulations as follows, *“Land subject to flooding or land deemed by the Planning Board to be uninhabitable shall not be platted for residential occupancy, nor for such other uses as may increase danger to health, life or property or aggravate the flood hazard”*. Such language should be incorporated into regulations governing the review of subdivisions, special permits and site plans.
2. Consider adopting flexible language in local laws that gives the Planning Board the discretion to guide development away from sensitive areas (floodplains, streams, wetlands, wet areas, erodible or wet soils, steep slopes and other sensitive areas). Adopting these local law changes supports best management practices that protect against flooding and erosion. Suggested language for subdivision and site plan regulations is provided below:
 - *“Location in less sensitive areas. The Planning Board may require in the subdivision / site plan design that structures and improvements be located in less sensitive areas. Sensitive areas consist of streams, watercourses, waterbodies and wetlands and adjacent buffer (100-foot) areas; steep slopes, erodible soils, areas that are wooded or have large trees and other sensitive areas. These natural features, which add value to residential developments and to the community should be preserved.”*

Original source: Sections of the Town of Red Hook (Dutchess County) Code Chapter 120, Subdivision of Land, from Article VI. Design Standards

- *Where possible, natural or existing topographic patterns which contribute to the beauty and character of development may be preserved.*
- *The proposal shall result in minimal degradation of natural features; and may be required to conform with geological and topographic features to the extent practicable.*

Original source: Town of Red Hook, Chapter 143, Zoning, section 143-116 Site plan design criteria

3. Define natural features in local law provisions that are intended to protect them. A suggested simple, clear definition of wetland is provided below:

WETLANDS

New York State Department of Environmental Conservation designated wetlands and those adjacent lands areas within 100 feet of the delineated wetlands; and federal wetlands regulate by the United States Army Corps of Engineers.

Original source: Sections of the Town of Red Hook (Dutchess County) Code Chapter 120, Subdivision of Land, section 120-5

4. Site design should incorporate areas of vegetation that may be preserved as part of landscaping or require tree or other plantings as in the suggested language below:

- *Street Trees. Trees shall be planted along proposed streets at intervals approved by the Planning Board except where unnecessary due to the presence of significant, preservable existing vegetation. Trees and other vegetation to be preserved shall be specifically identified on the subdivision plan.*

Original source: Sections of the Town of Red Hook (Dutchess County) Code Chapter 120, Subdivision of Land, section 120-20

- *Plants that are indigenous to the area and others that will be hardy and harmonious to the design and exhibit a good appearance shall be used.*

Original source: Town of Red Hook, Chapter 143, Zoning, section 143-116 Site plan design criteria

Rationale

The proposed local law changes correct deficiencies in existing laws and emphasize flexible standards that can be considered on a case-by-case basis by the Planning Board during review of subdivisions and site plans. The proposed amendments further protect the community against flooding and prevent erosion by guiding development away from sensitive areas such as waterways, wetlands and floodplains; steep slopes; and significant wooded areas. The proposed provisions also improve the community, local water resources and development projects by encouraging tree planting, landscaping and preservation of vegetation; providing areas for infiltration; preventing erosion; and removing sediment from runoff.

Principle #10: Preservation of Undisturbed Areas

Roundtable members opted not to address this specific principle as it is addressed in relation to principle # 9 above, and principles #16 and #17 below.

Principles #11, 12 and 13: Stream Buffers, Wetland Protection and Wetland Buffers; Stream and Wetland Buffer Uses and Enforcement

Maintain and restore vegetated stream buffers and provide flexibility in buffer design to protect natural resources such as freshwater wetlands, steep slopes and the 100-year floodplain. Protect local wetlands to provide flood control, wildlife habitat, recreation areas, and natural water quality treatment. Encourage low impact uses in stream and

wetland buffers such as passive recreation to be compatible with conservation. Encourage planting of native vegetation in buffers and provide enforcement and education mechanisms.

Recommendation

The Roundtable supports these principles and endorses the following recommendation:

1. Consider creating a subdivision overlay district to protect streams, floodplains, wetlands and other environmentally sensitive features. Instead of requiring that a specific permit be required for development in overlay districts, provide supplemental standards for development that can be addressed during site plan or subdivision review. Any proposed legislation should address the potential expenses involved in extensive surveying of natural features. Suggested language is provided below, which could be adapted for this purpose:

“E. Within the Stream Corridor Overlay District, the Planning Board may grant Site Plan approval only if it finds that, with appropriate conditions attached, the proposed activity:

- 1. Will not result in degradation of scenic character and will be aesthetically compatible with its surroundings.*
- 2. Will not result in erosion or stream pollution from surface or subsurface runoff. In making such determination, the Planning Board shall consider slopes, drainage patterns, water entry points, soil erosivity, depth to bedrock and high water table, and other relevant factors.*
- 3. Will comply with other applicable provisions of this local law.”*

Source: Town of Lexington Zoning Law, Section 4.08. Stream Corridor Overlay District

2. The Town should continue circulating applications for lead agency as part of the New York State Environmental Quality Review Act (SEQRA) review process including a notice with a description of a project, plans and an EAF (Environmental Assessment Form) to “involved” and “interested” agencies including the DEP. This step is separate from the required referrals to county agencies that are regularly made under General Municipal Law 239-l and 239-m.

Rationale

Riparian buffers restore and maintain the chemical, physical and biological integrity of water resources such as streams, lakes, wetlands or vernal pools. The streamside vegetation in a forested buffer system shades the stream and keeps the water cool; and the tree roots help stabilize the stream banks. Trees use excess nutrients before they reach the stream, soil particles trap pollutants, and the organic soils remove nitrogen. Porous grass-covered land within the buffer can increase infiltration and water storage, absorb nutrients, control concentrated runoff, and evenly spread surface flow. The benefits of riparian buffers can be summarized as follows:

Benefits of Riparian Buffer Protection

1. Filter sediments, nutrients (phosphorus and nitrogen), pesticides, and other pollutants in runoff.

2. Stabilize stream banks and bed, and reduce erosion.
3. Increase community-wide property values.
4. Provide shade, which helps keep summer water temperatures cool. This is of critical importance for native brook trout as well as the introduced brown trout.
5. Provide food and habitat for terrestrial and aquatic life.
6. Reduce flood damage and flood damage claims.
7. Protect quality of drinking water supplies.
8. Help maintain stream flows in summer.
9. Provide for infiltration of storm water runoff.
10. Support recreation and tourism industries by providing pleasant areas to fish and enjoy the streams.

The proposed amendments provide a simple way to integrate natural resource standards with existing site plan and subdivision review procedures. Using this model, the Town of Lexington has implemented floodplain and stream corridor overlay districts, which include requirements that come into play during review of site plan, special permit, subdivision or building permit applications. Since the requirements are addressed under existing local laws, there is no need for a separate set of regulations. This approach avoids the potential additional costs and time involved with permitting, administration and enforcement under separate floodplain, wetland or stream corridor local laws.

By circulating SEQR documents to DEP early in the process, DEP will be informed of environmental constraints related to the project and can provide a response regarding DEP regulations for streams, wetlands and riparian buffers early in the project review.

Principle #12: Wetland Protection and Wetland Buffers

The Roundtable members combined discussion of stream buffers; and wetlands and buffers (Principles #11; #12; and #13) together because they are so closely related. Please refer to the section above.

Principle #13: Stream and Wetland Buffer Uses and Enforcement

The Roundtable members combined discussion of stream buffers; and wetlands and buffers (Principles #11; #12; and #13) together because they are so closely related. Please refer to the section above.

Principle #14: Open Space and Flexible Design

Protect natural resources, steep slopes and floodplains and reduce impervious surfaces through local land use techniques such as open space design, conservation subdivision or cluster development.

Roundtable members opted not to address this principle separately since the Town of

Lexington and Town of Jewett already have open space or cluster provisions in their local laws. Recommendations for other communities were considered under Conservation Incentives (see Principle #19).

Principle #15: Open Space Management

Roundtable members opted not to address this principle as it was not considered to be applicable to the mountaintop communities.

Principles #16 and 17: Clearing and Grading, Tree and Forest Conservation

Protect natural resources and water quality by reducing erosion and control sediment at development sites, designing control practices using, “New York Standards and Specifications for Erosion and Sediment Control” (Blue Book). Encourage preservation of forests at residential development sites. Show limits of disturbance on construction plans to prevent clearing of trees and natural vegetative cover during construction. Use forestry best management practices for timber harvesting and tree cutting.

Recommendations

The Roundtable supports these principles and endorses the following recommendations:

1. Provide the Code Enforcement Officer (CEO) with a copy of the Blue Book describing accepted erosion/sediment control practices. The CEO should be familiar with the full Blue Book available at: <http://www.dec.ny.gov/chemical/8694.html> or the “lite” version of the book that can be found at http://www.dec.ny.gov/docs/water_pdf/bluebklite.pdf.
2. Consider regulating grading and clearing in subdivision regulations for small parcels (1/3 to ½ acre or more) or for disturbances over a certain percentage of the lot, referencing NY Standards and Specifications for Erosion and Sediment Control (Blue Book) and the NYS Stormwater Design Manual for acceptable practices. After implementation, ensure effective enforcement of local clearing and grading regulations.
3. Add basic language to existing subdivision/ site plan regulations to prevent clearing and grading of land without obtaining prior permission. Suggested language is provided below:

“No clearing, grading or tree removal may be undertaken in excess of ____ acre of land [fill in threshold based on your community’s needs] without site plan approval from the Planning Board with the exception of the harvesting of Christmas trees; the clearing of land for rights-of-way for utilities; reasonable site clearing preparatory to construction for which a building permit has been issued; the clearing and maintenance of land for agricultural purposes; and the harvesting of trees and firewood for the personal use of the property owner.”

Original source: Town of Lloyd, Chapter 100, Zoning, section 100-53 Site plan review

4. The Town should consider including timber harvesting (logging) as supplementary regulations in the existing zoning law based on those provided in the Town of Jewett Zoning Law, Article IV, section F., with the exception of Article IV, section F.1.a, "Any timber harvesting of an area totaling less than ten (10) acres." Section F.1.a. was regarded as leaving too large an area of land open to disturbance without review. However, the Town should also discuss reasonable limits on how much clearing can occur without any subdivision or site plan approval or other permit. In addition to the Town of Jewett language, the Roundtable recommends that the Town add standards from the sample language below, which is adapted from the Code of the Town of Lloyd, Chapter 100, section 100-44, Commercial timber harvesting:

Commercial timber harvesting shall be allowed by special use permit in the __, __ and __ Zoning Districts, provided that:

- A. All parcels of two or more acres of forest vegetation, whether on one lot or on two or more contiguous lots to be harvested, shall be subject to a special use permit under these provisions.*
- B. A forest management plan shall be submitted prior to the beginning of any clearing or cutting. This plan shall include information pertaining to the following:*
- (1) Land area of parcel to be logged;*
 - (2) Location of land area on Tax Maps;*
 - (3) Approximate existing number of trees;*
 - (4) Approximate number of trees to be harvested;*
 - (5) Impact on all streams and waterways on the parcel;*
 - (6) Site-specific measures for the prevention of erosion and preservation of wildlife habitats;*
 - (7) Measures for the preservation of aesthetic values of the land;*
 - (8) Maintenance and/or repair of roads, loading areas and access paths;*
 - (9) Establishment of buffer zones to mitigate visual impact from roads, nearby elevations and neighboring parcels;*
 - (10) Cleanup and reclamation plans;*
 - (11) Locations of major skid roads and landing areas; and*
 - (12) A time schedule for all of the above activities.*
- C. The Planning Board shall receive and approve a signed contract between the logger and property owner or owners.*
- D. The Planning Board shall require a performance bond or equivalent security to ensure proper cleanup and implementation of the forest management plan. In the case of a bond, the Village of _____ shall be named as an additional beneficiary insured. In the case of a security, the Village of _____ shall be named as a holder of the security.*
- E. All New York State Department of Environmental Conservation (DEC) regulations shall be strictly adhered to by the special use permit holder, and all required stream bank disturbance permits shall be secured and in effect before the commencement of logging.*
- F. An appropriate buffer of trees shall be maintained contiguous to any neighboring lot line or road.*
- G. Reasonable days and hours of operations shall be set forth.*
- H. Excluded from the requirement for a special use permit shall be:*
- (1) The harvesting of Christmas trees; the clearing of land for rights-of-way for utilities; reasonable site clearing preparatory to construction of a building for which a building permit has been issued; the clearing and maintenance of land for agricultural purposes; and the harvesting of trees and firewood for the personal use of the property owner; and*

(2) A forest management and timber harvesting plan and operation to be conducted by a Cooperating Forester listed under the New York State Cooperating Forester Program. Appropriate documentation shall be filed with the Planning Board.

1. Except for site clearing for the clearing of land for rights-of-way for utilities and reasonable site clearing preparatory to construction of a building, for which a building permit has been issued as provided in § 1 above, no clear-cutting shall be permitted on any lands within the Village.

Rationale

If there is no specific development proposed involving a site plan or subdivision application, land owners are not necessarily required to get approval from the Planning Board to clear land. This can lead to unregulated clearing that may be conducted without proper grading, drainage, erosion and sedimentation control practices. Clearing and grubbing of trees and other vegetation increases stormwater runoff on a site reduces the amount of runoff that recharges groundwater resources and increases the likelihood that erosion and sedimentation will occur. A simple amendment to local regulations will ensure implementation of effective erosion and sediment control practices for all projects. Reduction of clearing and grading also results in lower site preparation costs for the developer.

By addressing timber harvesting requirements under an existing local law (subdivision, site plan), there is no need for a separate set of regulations. This approach avoids the potential additional costs and time incurred by the municipality for permitting, administration and enforcement under a separate timber harvesting or tree removal local law. Providing an exemption for plans and operations to be conducted by foresters in the NYS Cooperative Forester Program provides an incentive for landowners to choose carefully who will be responsible for forest management on their property.

Principle #18: Habitat Protection and Conservation Overlays

The Roundtable members combined discussion of habitat protection and conservation overlays with the discussion of locating sites in less sensitive areas, stream buffers, wetland protection and wetland buffers, and stream and wetland buffer uses and enforcement because they are so closely related (See Principles #9, 11, 12 and 13).

Principle #19: Conservation Incentives

Encourage incentives and flexibility in the form of open space and cluster development to promote conservation of stream buffers, forests, meadows, wetlands and other areas of environmental value.

Recommendations

The Roundtable supports this principle and endorses the following recommendations:

1. The Town of Hunter should consider adopting open space design, conservation subdivision or cluster development provisions.

2. The Town should provide written materials to subdividers about the benefits of compact development and open space subdivision design. Shorter roads and utility pathways, which would reduce land disturbance, would cost less for the developer. Lots would be more marketable for prospective owners desiring to live near open, scenic lands. The cost of operation and maintenance of common facilities, whether publicly or privately owned, would also be less with shorter roads and utility systems.
3. The Town should consider the feasibility of creating a “Green” District. This would be an area in a municipality where a developer might get a tax break or other incentive for certain types of low-impact development. The developer would have to show a practical need or reason to request such an incentive from a municipality. This scenario would be more likely when the mountaintop area municipalities are under pressure from more development proposals.

Rationale

Open space design, conservation subdivision or cluster development permits the same density of lots and residences as would be permitted in a conventional lot layout but on a smaller area of a site. By allowing smaller size lots than normally permitted in a given zoning district substantial area of a site can remain as open space and used for LID treatments as site conditions allow. Using resource analysis and concept plan processes will locate development in less sensitive areas, leaving more sensitive areas in a natural, open state. Smaller lot sizes arranged in a more compact layout translate into shorter roads and driveways, less overall land disturbance, and less impervious cover, resulting in less stormwater and its associated impacts.

Open space subdivisions provide advantages for developers and future residents: lower cost construction and maintenance of improvements; built-in stormwater infiltration areas; homes located near permanent open space, etc. However, there are significant site limitations on development in the mountaintop region, making it difficult for the Town to provide incentives for compact design. Since density is generally reduced as a result of site development constraints, the option to add density for retaining more open space is usually not feasible.

Reduction of Impervious Cover

Principle #20: Street Width and Drainage

Design residential streets for the minimum required pavement width needed to support travel lanes; on-street parking; and emergency, maintenance and service vehicle access. These widths should be based on traffic volume. Design and repair streets and roads with adequate drainage to control stormwater and address local flooding.

Recommendations

The Roundtable supports this principle and endorses the following recommendations:

1. The existing highway specifications for the Town of Hunter specify a minimum width of 18 feet. The Roundtable recommends that this minimum width be retained in the code, as it provides the local boards with flexibility to minimize impervious surfaces where feasible.
2. Consider amending the road specifications for the Town of Hunter to specify design of storm sewers, ditches, culverts and stormwater management practices for new development (contributing watershed less than 2000 acres) using "Urban Hydrology for Small Watersheds", NRCS TR-55 and "Computer Program for Project Formulation Hydrology," NRCS TR-20 methodology.
3. Consider amending the highway specifications for the Town of Hunter to specify design of culverts and bridge openings on village roads using a 50-year design storm plus 2' of freeboard and free flow of the 100-year storm event. For design of peak flows for culverts and bridge openings in natural streams use regression equations developed by the New York State Department of Transportation (DOT) and the United States Geological Survey (USGS) described in, "Magnitude and Frequency of Floods in New York," as revised and updated in, "Bankfull Discharge and Channel Characteristics of Streams in New York State," and facilitated by the online calculator, "StreamStats" at: <http://water.usgs.gov/osw/streamstats/>
4. Encourage techniques to slow water down before it reaches streams and roadside ditches by installing improvements to handle runoff at the source, such as a series of impoundments with check dams, grade stabilization structures or other practices designed using NY Standards and Specifications for Erosion and Sediment Control.
5. Planning should emphasize minimal land clearing for new streets; with larger developments, avoid dead end streets.

Rationale

Residential streets are often unnecessarily wide and these excessive widths contribute to the largest single component of impervious cover in a subdivision (Center for Watershed Protection, 1998). Narrower street widths not only reduce impervious cover, but also promote lower vehicular speeds and increased safety and can reduce construction and maintenance costs.

American Association of State Highway and Transportation Officials (AASHTO) standards for Local Roads and Streets (Rural Roads) of less than 400 average daily trips (AASHTO, 2004) allow for a total minimum width of the traveled way of 18 feet when the design speed is 40 mph or less (Fig. 2).

Figure 2. Minimum width of traveled way (feet) for specified design volume (vehicles per day)				
Design speed (miles per hour)	Under 400	400 to 1500	1500 to 2000	Over 2000
15	18	20 ¹	20	22
20	18	20 ¹	22	24 ³
25	18	20 ¹	22	24 ³
30	18	20 ¹	22	24 ³
40	18	20 ¹	22	24 ³
45	20	22	22	24 ³
50	20	22	22	24 ³
55	22	22	24 ³	24 ³
60	22	22	24 ³	24 ³
	Width of graded shoulder on each side of road (feet)			
All speeds	2	5 ¹		