Steep Slopes and Land Use Decisions

Guidance for planning boards to consider steep slopes in land use decisions

The Susquehanna-Chemung region of New York is characterized by rolling hills. While these hills provide a scenic backdrop they also present development challenges that should be addressed as part of municipal land use considerations.

When steep slopes are disturbed by removing vegetation and developing the hillside, significant issues can arise. This can often cause more problems than the benefits provided. It is important that municipal planning boards consider the consequences of building on a slope above 10% grade before allowing development there. Potential consequences can include increased erosion, landslides, and sedimentation. It is also more difficult to control fires on sloped land, and is difficult for emergency vehicles to access development on steep hillsides.

Why consider steep slopes?
All planning boards should consider the slope of the land when approving development, even if they have no regulatory restrictions. Many municipal zoning laws prohibit development on land steeper than 10% and some municipalities allow up to 15%. So why do these laws exist?

Disturbing steep slopes can:

- **Create hazards**: Increased potential for roads and driveways to wash out. Lack of emergency vehicle access. Increased car accidents on icy sloped roads.
- **Damage property**: Erosion or landslide damage to homes and property. Increased runoff and sediment can damage downhill property and contribute to stream instability, resulting in streambank erosion damage.
- **Cause water pollution**: Increased potential for erosion. Increased transport of polluted runoff due to fewer opportunities for pollutants to settle or be filtered by vegetation. Increased potential for septic system failure.

How do we define a steep slope?

- 0-10% grade = Gradual
- 10% - 15% = Moderate
- 15%+ grade = Steep


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These consequences result in increased costs for residents and increased costs for taxpayers. The costs that local governments may incur as a result of steep slope development include:

- Need for additional emergency vehicles capable to climbing steep slopes.
- Road repair costs when runoff issues cause roads to wash out.
- Additional maintenance of roadside culverts and ditches due to runoff issues.
- Increased stream maintenance costs.
- High costs for extending infrastructure. Sewer and water systems are especially difficult and expensive to engineer on steep slopes.
- Protecting steep slopes preserves the natural scenic beauty, which protects property values. Once the viewshed of hillsides has been deteriorated, property values may not increase or may even decline.

Tools and strategies to preserving hillsides and steep slopes

When evaluating how your municipality deals with steep slope issues, ask yourself the following questions.

FIRST: Does your municipality have a comprehensive plan? Comprehensive plans provide guidance for future growth of a municipality. Municipal governments should use their comprehensive plan to state preferences for preserving hillsides, viewsheds, and other natural resources and for limiting development on steep slopes.

Stating preferences for limited slope and hillside development in your comprehensive plan gives guidance to planners, the planning board, and elected officials for implementing the community’s vision and goals. Further, the comprehensive plan can help direct where growth will occur by specifying future capital improvements for the municipality, such as where infrastructure will be expanded to. Limiting infrastructure expansion on steep slopes is one way to discourage development in these areas.

SECOND: What land use regulations does your municipality have? Through zoning and subdivision regulations, local government can reduce the impact of development on steep slopes. Some tools for municipalities to consider are:

- Restricting or excluding residential and commercial development and incompatible land uses and actives.
- Restricting the density of residential development.
- Requiring conditional use permits for development on steep slopes.
- Utilizing an overlay zone to establish additional specialized land use regulations.
- Requiring cluster subdivision or planned unit developments that cluster residential lots outside areas of concern.
- Establishing subdivision regulations that require sufficient flat land for building construction or restrict the construction of streets or utility lines on steep slopes.
- Establish design guidelines including screening to minimize the visual impact of development.¹

¹ Indiana State Department of Agriculture Division of Soil Resources. “Hillside / Steep Slope Protection” retrieved from www.in.gov/indot/div/.../Hillside_Steep%20Slope%20Protection.pdf on February 1, 2012

THIRD: Does your municipality enforce the slope development laws? Enforcement of the codes is vital. A municipality should make sure that all building permits issued meet the slope requirements of the municipality. Further, evaluate area variances on steep slopes that the Zoning Board of Appeals have permitted. Are they reasonable? Limiting area variances on slopes will protect those sloped lands.

FOURTH: Does your municipal planning board know and understand how to identify steep slopes and review development proposals in these areas? Educating your municipal planning board, zoning boards of appeals and elected officials on the consequences of developing steep slopes will provide the background needed to make educated decisions that benefit the residents of the municipality and save the municipality money. Seek training opportunities from NYS Department of State or your Regional Board.

Using the Data Atlas to Evaluate Steep Slopes
A new tool for evaluating slopes is the online Data Atlas for the Susquehanna and Chemung River Basins. Use this tool to review information about a site, including the slope, when considering a site plan approval, conditional use permit, subdivision, or area variance.

- Access the data atlas at: [www.stcgis.org/SCAtlas/](http://www.stcgis.org/SCAtlas/)
- “Agree” to the welcome screen
- Use the navigation buttons and zoom in buttons to the left of the screen to navigate to your municipality, zoom in the area of interest.
- At the top of the screen change the view to “Aerial” to better help you navigate.

![Aerial view of a map with different layers]

- Use the pull down “Map Legend” menu located on the top menu bar.

![Map Legend menu with various options]

- Click on the world icon to the left of “Data Atlas Layers.” This expands all of the available layers. Scroll though these layers and turn on any layers you would like to view by clicking on the check box. Make sure to also check the box next to “Data Atlas Layers.”

![Expanded Data Atlas Layers]

- Scroll to “Slope Percentage” layer. Turn this layer on. Expand the classification of the layer by clicking on the world icon to the left of “Slope Percentage”.

- Evaluate the parcel of land by finding the parcel (turn on the parcel’s layer), zooming in, and evaluating if there is a slope more than 10% or more than 15%? To best evaluate the parcel, switch between “Street” view, “Aerial” view and “Topo” view.

If the proposed project is in a steep slope area, you may want to ask the applicant to provide more detailed information in the site plan. Ask for contoured maps and slope data for all proposed development, driveways, roads, buildings, parking, etc. Consult with the municipal code enforcement officer concerning the site and the slope. Review your local land use laws to see if this development is permitted. Work with the applicant to reduce impacts by recommending limited disturbance of land and additional plantings of native vegetation where land is disturbed. Consult your county Soil and Water Conservation District about how to reduce adverse impacts on the sloped land.