

Caroline Water Resources and Flooding Overlay

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Overview

The Water Resources and Flooding Overlay map alerts owners and developers that critical water resources and areas prone to flooding are on a parcel and will need to be considered when planning to build on or develop that property. Development is not prohibited throughout the Overlay; the requirements and restrictions for building and development within the Overlay differ depending on what type of water resource occurs on the property. For example, proposed development near wetland areas within the Overlay has different restrictions than what is required for new construction in areas near streams. See the section on [Overlay Components](#) for a summary of what would be prohibited in various portions of the Water Resources and Flooding Overlay and the section [Proposed Regulations for Riparian \(Streamside\) Areas](#) for details of the proposed regulations for riparian areas.

The Overlay map is not exact; in some locations (for example, along some types of wetlands) the boundaries of the Overlay are intentionally drawn outside the specific areas in which development restrictions would apply in order to prompt the developer to ground-truth the actual water resource boundaries. This ensures that everyone involved will understand exactly where the water resource boundaries are when building is proposed. See [Data Sources and Example Map](#) below for sample maps and [County GIS Mapping Tool](#) for an explanation of how to use the county's interactive mapping tool.

The Water Resources and Flooding Overlay has three main components: flood zones, wetlands, and riparian (streamside) areas (see [Overlay Components](#) for more information on each of these). **The draft zoning law does not change existing Town regulations regarding flood zones nor add to existing state or federal regulations regarding wetlands. The draft law would add Town regulation of riparian areas.** There are no existing regulations protecting riparian areas at the local, state or federal level so everything proposed in the draft zoning law for riparian areas would be new. See below [Why Protect Riparian \(Streamside\) Areas](#) regarding the benefits of riparian area protection and [Proposed Regulations for Riparian \(Streamside\) Areas](#) for details about the regulations proposed in the draft zoning law.

Some Town residents have suggested the Town consider financial incentives of some type to encourage landowners to protect riparian areas. Such issues are beyond the purview of the Zoning Commission and questions regarding them should be directed to the Town Board. However, the Zoning Commission has provided some “food for thought” on these issues in the [Landowner Compensation](#) and [Grants and Incentives](#) sections below.

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Why Protect Riparian (Streamside) Areas

By law, the draft zoning plan must align with the town's Comprehensive Plan. Residents of Caroline have consistently ranked environmental protection as a top priority for the town. The current Comprehensive Plan (passed in January, 2021) includes the goals of "Prevent environmental degradation: preserve air quality, water quality and quantity, and the best soils and farmland" and "Promote agricultural and construction practices that protect the quality of land, streams, and wildlife." In addition, one of the action items in the Plan is to "Require review of a significant project to consider its impact on the natural resources of the town (at a minimum but not restricted to the natural resources enumerated in the Caroline Natural Resources Inventory). Specific areas of concern are open space, visual resources, air, water, noise, light, and climate change impacts." Because of the importance placed on water quality by the community as reflected in the Comprehensive Plan, implementing riparian zone protections is a high priority for the Zoning Commission.

Riparian zones are extremely important to water quality. As the Tompkins County Department of Planning and Sustainability has explained, "Though riparian areas and stream buffers generally comprise a small proportion of the landscape, they provide a disproportionately high amount of habitat and ecosystem benefits, including protecting water quality, stabilizing streams, minimizing flood damages, and enhancing ecological diversity." ("Benefits of Riparian Areas and Stream Buffers," <https://tompkinscountyny.gov/files2/planning/water-resources/EnhancingWaterResources.pdf>) Riparian zone protection provides:

- **Stream Stability.** Buffers decrease flooding by slowing the rate of runoff; plant roots stabilize stream banks and prevent erosion of streambanks and streambeds which protects not just water quality but reduces the amount of property lost due to being washed downstream.
- **Water Quality.** Buffers protect water quality by removing pollutants, reducing the amount of soil eroded into streams, and moderating temperatures.
- **Financial Savings.** Buffers prevent property damage and reduce public investment needed to repair flood and erosion damage. Due to the enhanced resiliency against storm and flood damage riparian buffers enhance property values.
- **Habitat and Biodiversity.** Stream buffers provide terrestrial wildlife habitat and travel corridors; fallen branches, leaves, fruits and seeds provide food and shelter in aquatic ecosystems; and shading of streams decreases the water temperature, which leads to higher oxygen content and a greater ability to sustain fish and other aquatic life.

The Tompkins County Department of Planning and Sustainability (see <https://tompkinscountyny.gov/planning/water-resources-stream-buffers>) and the New York State Department of Environmental Conservation (see <https://www.dec.ny.gov/chemical/106345.html>) both encourage the protection of riparian areas.

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Proposed Regulations for Riparian (Streamside) Areas

Details of proposed regulations for riparian areas are found in the draft zoning law in Section 5.3 "Specific Standards for the Water Resources and Flooding Overlay District". The Zoning Commission has been actively revising this and other sections of the draft zoning law and many

of these revisions have not yet been posted to the Commission's website. Because of the great interest in the Water Resources and Flooding Overlay District there is a link to the updated (current as of November 1, 2022) Section 5.3 on the Zoning Commission webpage (<http://www.townofcaroline.org/zoning-commission1.html>). Updated versions of other recently revised sections of the draft zoning law will soon (likely by mid-November 2022) also be posted. Once the revisions have been posted to the website paper copies will also be available at the Town Clerk's office. Language quoted below is from the revised draft.

Because water features and resources change over time, it is possible that the specific location of a water resource is no longer accurately represented in the Water Resources and Flooding Overlay. If an applicant believes that his or her proposed building site is actually not in the overlay because the location of water resources on the parcel have shifted, the applicant can present a survey by a New York State licensed professional to demonstrate that. If the Review Board agrees with the applicant, it may waive the requirements of the Overlay district.

As is true with all provisions of the draft zoning law, existing buildings and land uses within the Water Resources and Flooding Overlay District are allowed to continue (are "grandfathered") even if they are in conflict with the provisions of the draft zoning law. All of the following, therefore, apply only to future changes in land use and new construction in the Riparian Buffer Area and Buffer Setback Area.

(1) The Riparian Buffer Area is defined as the 50 feet closest to the stream. For intermittent streams, that is it. For perennial streams, however, if there is a steep slope or a wetland in that area the width of the buffer area is increased by the width of the steep slope or wetland. In the event that there is a steep slope that extends a long way, the width of the Riparian Buffer Area for a perennial stream is capped at 200 feet.

5.3.G.1 The Riparian Buffer Area will begin at the top of the stream bank and extend a minimum of 50 feet horizontally measured in a direction directly perpendicular to the stream bank in a horizontal plane. For an intermittent stream, this shall be the entire Riparian Buffer Area. For a perennial stream, should a steep slope or wetland also exist within this Riparian Buffer Area, the horizontal extent of that slope or wetland will be added to the measurement of the Riparian Buffer Area, but in no case shall the Riparian Buffer Area be required to extend more than 200 feet from the stream bank.

(2) The Buffer Setback Area is defined as the 50 feet outside of the Riparian Buffer Area. Intermittent streams do not have a Buffer Setback Area. As with the Riparian Buffer Area, for perennial streams the Buffer Setback Area is extended if a wetland or steep slope exists within that area. The extension is capped at 100 feet.

5.3.H.1 The Buffer Setback Area will begin at the outward edge of the Riparian Buffer Area and extend a minimum of 50 feet horizontally measured in a direction perpendicular to the Riparian Buffer Area. Should a steep slope or wetland exist within the Buffer Setback Area, the entirety of that area will be added to the measurement of the Buffer Setback Area, but in no case shall the Riparian Setback Area be required to extend more than 100 feet.

(3) Perennial streams have a two-part protected area made up of a Riparian Buffer Area and a Buffer Setback Area. Intermittent streams have a one-part protected area made up of a Riparian Buffer Area.

5.3.E Streams within the Town of Caroline Water Resources and Flooding Overlay District shall be protected by stream setbacks as follows: perennial streams shall have a setback made up of a Riparian Buffer Area and an additional Riparian Buffer Setback Area; intermittent streams shall have a setback made up of a Riparian Buffer Area only.

(4) There is a general prohibition on new building in the Riparian Buffer Area or Buffer Setback Area except for any agricultural uses and some minor types of development described in the draft zoning law (see (6) and (7) below).

5.3.F Except where allowed by this Zoning Law and for agriculture, no building shall be allowed within the Riparian Buffer Area or the Buffer Setback Area.

(5) Any development or activity in the Riparian Buffer Area can disturb at most 10% of the Riparian Buffer Area with some exceptions for health and safety.

5.3.G.2 No development or disturbance in the Riparian Buffer Area shall modify or interrupt more than 10% of the acreage within the Riparian Buffer Area on that parcel unless necessary for the protection of human health, utility usage, public infrastructure, or the betterment of the riparian corridor.

(6) The following uses and activities are allowed in the Riparian Buffer Area:

5.3.G.2

- *Activities part of any agricultural operation;*
- *Any lawful use of land if the use is in existence at the time of the adoption of this Zoning Law;*
- *Benches or seating;*
- *Implementation of educational and scientific research that does not negatively impact the native vegetation;*
- *Flood control, stormwater management structures, and stream bank stabilization measures approved by the Tompkins County Soil and Water Conservation District, Natural Resource Conservation Service, Army Corps of Engineering, or NYS Department of Environmental Conservation;*
- *Maintenance of roadways or impervious surfaces existing at the time of the adoption of this provision;*
- *Stream crossings necessary to access the property by driveway, transportation route, or utility line which are designed to minimize negative impacts to the stream and Riparian Buffer;*
- *Public water supply intake or public wastewater outfall structures;*
- *Public access and public recreational facilities that must be on the water including boat ramps, docks, foot trails leading directly to the stream, fishing platforms and overlooks;*
- *Public sewer lines and/or other utility easements;*
- *Techniques to remove invasive species;*

- *Non-paved recreational trails no wider than 10 feet that either provide access to the stream or are part of a continuous trail system running roughly parallel to the stream;*
- *Temporary use of erosion control measures such as silt fencing;*
- *Within the Riparian Buffer Area, limited tree cutting, forestry or vegetation management shall be done in accordance with a Forest Stewardship Plan prepared by the Department of Environmental Conservation, a forester who is certified by the Society of American Foresters or such successor organization as is later created, or a Cooperating Consulting Forester identified by the New York State Department of Environmental Conservation. Any harvest must furthermore be done in accordance with the New York State Forestry Best Management Practices for Water Quality – BMP Field Guide. Tree cutting may not compromise the integrity of the stream bank or negatively impact the function of the Riparian Buffer. Tree cutting within 25 feet of the top of stream bank is prohibited. Any such activity must retain at a minimum 50% of the tree canopy in the Riparian Buffer Area at all times.*

(7) The Buffer Setback Area allows all of the uses and activities allowed in the Riparian Buffer Area (see above) plus the following:

5.3.H.2

- *Minor recreational structures and surfaces to allow passive recreation in the Buffer Setback Area such as decks, picnic tables, playground equipment, and small concrete slabs, the total area of which is not to exceed 200 square feet each and in aggregate occupy no more than 10% of the Buffer Setback Area;*
- *Fences, provided such structures do not impede floodwaters;*
- *Landscaping, mowing, decorative planting or improvements that do not encroach upon or impact the integrity of the Riparian Buffer Area.*

(8) The following activities are not allowed in either the Riparian Buffer Area or the Buffer Setback Area:

5.3.I

- 1. Storage or placement of any hazardous material.*
- 2. Installation of sewage systems, both drain fields and raised systems and replacement of existing septic drywells or seepage pits.*
- 3. Mining or removal of soil, sand and gravel and quarrying of raw materials unless in connection with a farm operation.*

(9) In addition, the following is not allowed in the Riparian Buffer Area:

5.3.J

- 1. Parking or parking lots, except in connection with a farm operation.*

(10) Any land use activity proposed for the Riparian Buffer Area or Buffer Setback area that requires a building permit or special use permit or must undergo site plan review or subdivision

review must present documentation showing that the stream will be protected from negative impacts.

5.3.K Each application for a building permit, special use permit, subdivision, or site plan within a stream buffer shall furnish sufficient data to demonstrate that the proposed activity will not result in any of the following within the Riparian Buffer Area or Buffer Setback Area. Further, applicants for new construction projects disturbing one or more shall employ site specific stormwater management strategies to prevent adverse impacts upon such streams.

- 1. Alteration of aquifer capacities.*
- 2. Reduction of flood-carrying capacities of watercourses or increased hazards associated with flooding.*
- 3. Deterioration of water quality or impairment of best usage of waters.*
- 4. Alteration of water retention capabilities; increase in siltation of surface water bodies and adjacent areas.*
- 5. Significant disturbance to fish and wildlife populations and natural plant communities.*
- 6. Impairment of any natural function of a wetland or its adjacent buffer area.*
- 7. Alteration of the flow pattern of a watercourse area.*
- 8. Increase in the velocity of surface water runoff.*

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Overlay Components

The Water Resources and Flooding Overlay District is the combination of flood zones, wetlands, and riparian buffers and setbacks around streams. In other words, any area that is a flood zone or a wetland or is within a certain distance of a stream would be part of the Overlay District. The map of the Overlay District does not separately show these individual components, but they can be viewed using the county GIS mapping tool (see [County GIS Mapping Tool](#) below for how to do this).

Flood Zones

Flood zones are the “100 year flood” areas as mapped by the Federal Emergency Management Agency (FEMA). The flood zones used to create the draft Water Resources and Flooding Overlay are the new 2022 maps currently being created by FEMA. These maps have not yet been officially released but Tompkins County obtained an advance copy and those maps were made available to the consultants working with the Zoning Commission. Flood zones can change over time: some areas currently classified as flood zones on older FEMA maps will not be classified as flood zones under the new maps and some areas not currently classified as flood zones will be flood zones under the new maps.

FEMA does not regulate flood zones. The Town has had a Flood Damage and Prevention law for some time; the current version was passed in 2021. The Town law allows building in a flood zone; the proposed zoning law would not change that nor would it add any new regulations for flood zones. The current Town law sets standards to reduce the potential damage done to structures by floods and to prevent new construction from making flooding worse. The Town local law is available at http://www.townofcaroline.org/uploads/6/2/7/8/62781479/jan_13_2021_flood_damage_prevention_law.pdf.

Wetlands

Wetlands are areas that are covered by water or have saturated soils for extended periods during the growing season. Wetlands are not always obvious, particularly ones that are dry for portions of the year. Indicators of whether or not something is a wetland are plants (plants growing in wetlands have special adaptations for living in saturated soil conditions) and soil type.

The New York State Department of Environmental Conservation (DEC) regulates wetlands that are 12.4 acres or larger; smaller wetlands are regulated by federal agencies, most commonly the US Army Corps of Engineers. If an activity is taking place on or near a possible wetland, it is important to determine if it is indeed a wetland and, if it is, which agency has jurisdiction. The next step is to do a careful mapping (called a “wetland delineation”) to determine the precise boundaries of the wetland.

DEC regulations protect the wetland area itself plus a 100-foot buffer around the wetland. Federal regulations protect just the wetland area. While in principle it is possible to obtain a permit to build in a wetland area or the DEC buffer, in practice these permits are extremely difficult to obtain. Because of this, wetlands are generally considered a “no-build” zone.

The proposed Water Resources and Flooding Overlay boundary for wetland areas includes the 100-foot buffer around DEC-regulated wetlands and also a 50-foot buffer around other wetlands. Note, therefore, that while there are State (DEC) restrictions in the 100-foot buffer there are no restrictions in the 50-foot buffer around non-DEC-regulated wetlands because federal agencies do not regulate that area.

Currently, there is no local law concerning wetlands. The draft zoning law does not propose any additional wetland regulations to what is already required by the state or federal governments.

Riparian Areas

Riparian areas are lands bordering streams. In the draft zoning law, streams are protected differently depending on whether they are permanent or intermittent streams. Permanent streams have a two-part protection zone: a Riparian Buffer Area (the part closest to the stream) and the Buffer Setback Area (the part next farthest out). Intermittent streams have only a single-part protection zone made up the Riparian Buffer Area. The nominal widths of the Riparian Buffer Area and Buffer Setback Area are 50 feet each but for a perennial stream either would be wider than that if there are steep slopes or wetlands in the buffer or setback area. For intermittent streams the Riparian Buffer Area is 50 feet. See [Proposed Regulations for Riparian \(Streamside\) Areas](#) above for details. In the Six Mile Creek watershed, the proposed Water Resources and Flooding Overlay District includes all areas within 125 feet of the centerlines of perennial streams and within 125 feet of the edge of Six Mile Creek. This is larger than the nominal 100 foot width of the Riparian Buffer Area and the Buffer Setback Area for perennial streams. The extra distance is there to ensure that the developer and the Review Board carefully examine (“ground-truth”) where streams and the associated buffer and setback areas on a specific parcel occur in this important watershed. The building restrictions only apply in the actual Riparian Buffer Area and Buffer Setback Area determined by that careful examination.

The draft zoning plan proposes to prohibit new building in the Riparian Buffer Area; minor building (such as decks, gazebos or playgrounds) would be allowed in the Buffer Setback Area (see [Proposed Regulations for Riparian \(Streamside\) Areas](#) above for details). All of these regulations would be new. There are no current federal, state or local regulations protecting riparian areas.

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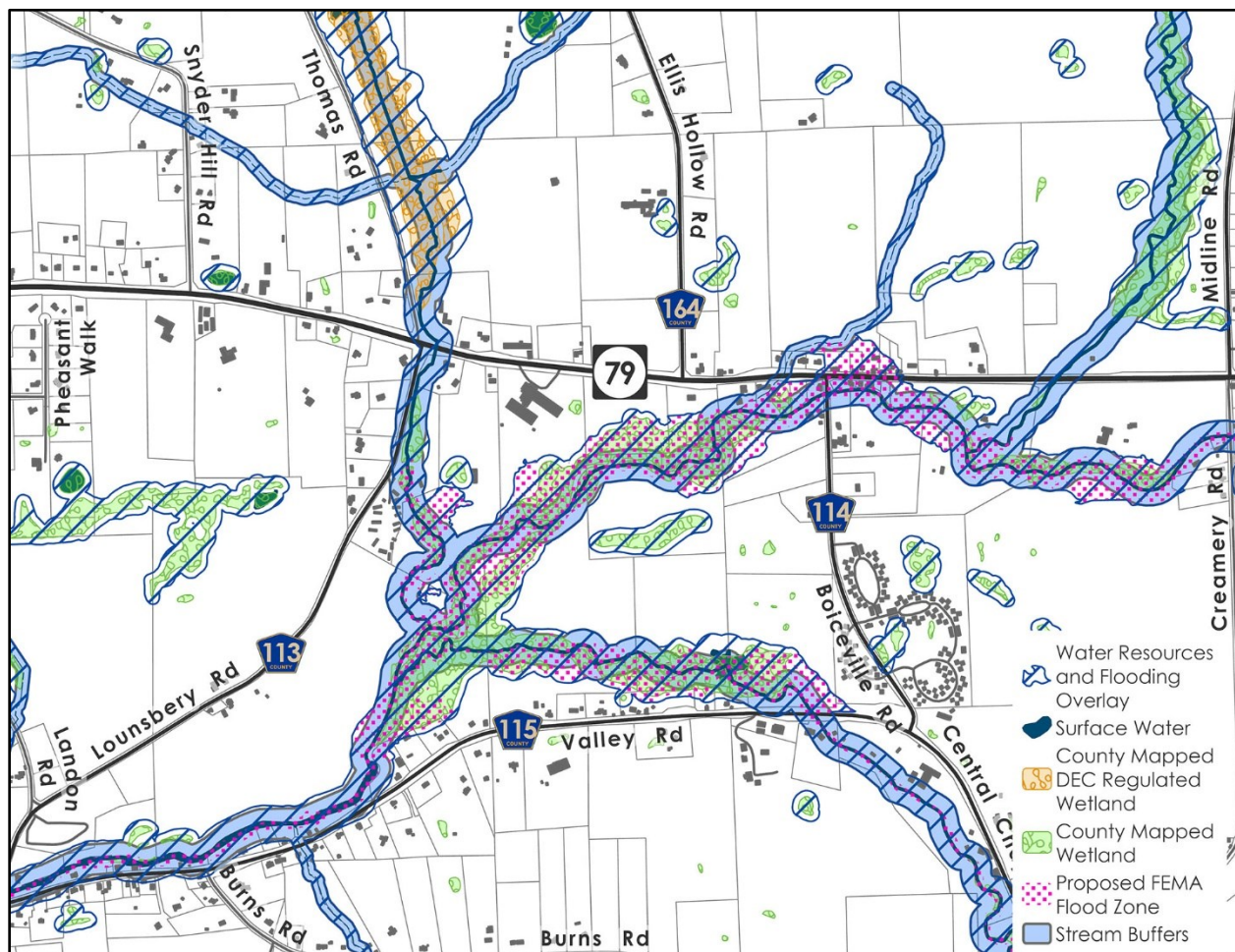
Data Sources and Example Map

The boundary of the proposed Water Resources and Flooding Overlay is determined by the following:

- 125 feet from the edge of Six Mile Creek (creek data from United States Geological Survey National Hydrography Dataset (USGS NHD) 2020)
- In the Six Mile Creek watershed: 125 feet from the centerlines of perennial streams and edges of inline waterbodies (data from USGS NHD 2020)
- Outside the Six Mile Creek watershed: 100 feet from the centerlines of perennial streams and edges of inline waterbodies (data from USGS NHD 2020)
- 50 feet from the centerlines of intermittent streams (data from USGS NHD 2020)
- The edge of 100-year flood zones (data from FEMA proposed 2022 flood zones)
- DEC-regulated county-mapped wetlands with 100 foot buffer (data from Tompkins County wetlands 2012 mapping, keyed to New York State DEC wetlands 1994)
- 50 feet from the edge of other county-mapped wetlands (data from Tompkins County 2012 wetlands mapping)

Areas less than 1 acre are excluded from the Water Resources and Flooding Overlay.

The map on the next page illustrates how the three separate components (flood zones, wetlands, and riparian buffer areas) are combined to create the overlay district. In some areas components overlap while in others just a single component is present. The Water Resources and Flooding Overlay District (blue outline with diagonal blue lines) encircles all the underlying components. Note that as mentioned elsewhere, in some areas the boundary of the Overlay lies outside the mapped location of the water resource. This is intentional because the Overlay serves as an “early warning system” to alert developers that there are critical water resources nearby that need to be considered when planning a development. A proposed building envelope falling within the Overlay prompts a careful check of which resources are there and a determination of the precise boundaries of those resources. Landowners may already know which water resources are on their property. If there is any doubt which resources are there, landowners or developers may contact the Code Enforcement Officer to find out.



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County GIS Mapper

In addition to the electronic and printed maps that the Zoning Commission is having prepared, mapping is available from the Tompkins County GIS Division. The interactive mapping tool allows a user to turn on and off various features on the map (that is, one can choose to show only wetlands, or wetlands plus flood zones, or wetlands plus flood zones plus riparian buffers) and to zoom in on specific locations to examine areas in detail.

The county mapping tool is found at <https://mapping-tompkins-tompkinscounty.hub.arcgis.com/>. One can get there either by using the above link or go to the home page of the GIS Division (<https://www.tompkinscountyny.gov/gis>) and click on “Mapping Tompkins” on the left-hand side. Many types of maps are available; for natural resources scroll down and click on “NATURAL RESOURCES - View agricultural, sensitive areas and land use and land cover info.” Once you are on that page, the Home tab in the left pane gives some general information on using the map. Click on the “Layers” tab at the top of the left pane. This will pull up a menu where you can turn on (shown with a check mark) or turn off (open box) items to plot on the map. Relevant to the Water Resources and Flooding Overlay District, one can turn on or off 50 foot intermittent stream buffers, 100 foot perennial stream buffers, Tompkins County Water Resources Council Wetlands 2012, the National Wetlands Inventory, NYS DEC regulated wetlands, and flood zones. The National Wetlands Inventory (NWI) is a federal mapping of

wetlands created and maintained by the U.S. Fish and Wildlife Service. The Fish and Wildlife Service does not claim that the NWI is a complete catalogue of all wetlands; however, if something is in the NWI it is a wetland and most likely under the jurisdiction of the US Army Corps of Engineers (unless it is also greater than 12.4 acres, in which case it is under the jurisdiction of NYS DEC). As of now, the flood zones mapped on the county site are still the old (1985) FEMA flood maps not the updated 2022 maps that FEMA is in the process of releasing.

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Landowner Compensation

Some Town residents have asked about the possibility of landowners being compensated for the loss of the ability to develop part of their property. The issue of compensation is not within the purview of the Zoning Commission but the Zoning Commission shares the following thoughts.

A key question underlying the issue of potential compensation is considering to what extent the value of land is tied to the value of developing it. Land has many uses, some of them related to development and some of them not. The value of land is not tied one-to-one to specific development rights but is determined by market forces; that is, the value of land is determined by what folks “in general” are willing to pay for it. Until those market forces have time to play out, it is not possible to say now to what extent, or even if, the value of a parcel is reduced or increased due to the presence of a protected riparian buffer on that property. For example, market forces may lead to an increase in property values if the market puts a priority on scenic areas, water quality, or reduced likelihood of erosion. Or, market forces may lead to a decrease in property values if the market puts a priority on maximizing the potential buildable area of a parcel.

Assessing the likely value of a property is the job of assessment departments; in Tompkins County that is done by the Tompkins County Department of Assessment. In New York, assessors are certified professionals obligated by law to assess property at fair market value. In determining fair market value, the Department of Assessment must look at the current use of the land. For example, if the current use of the land is as a residence, the Department of Assessment must assess it for its fair market value as a residential property, not for possible commercial or other uses. If a landowner feels the assessed value of his or her property ought to be reduced because a regulation removes the ability to develop a portion of their property, the landowner may petition the Department of Assessment for a reduced assessment.

Some landowners have mentioned that other municipalities have given property tax credits in situations like this. In New York, state law severely limits a town board’s ability to grant tax breaks. There is good reason for this as it prevents town boards from arbitrarily favoring friends or associates in town, thereby shifting the tax burden on to others.

There are certain situations in which regulatory bodies must provide compensation to affected landowners. The legal conditions are well-established: for a regulatory action to be considered a “taking” and hence lead to landowners being compensated, the regulatory action must leave no viable use of the land and therefore reduce the land value to essentially zero.

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Grants and Incentives

Some Town residents have suggested the Town consider financial incentives of some type to encourage landowners to protect riparian areas. This is another issue that is not within the purview of the Zoning Commission but the Zoning Commission shares the following thoughts.

Incentive-based programs can be used to protect environmental resources. For example, the United States Department of Agriculture offers programs that pay farmers for conserving certain areas or protecting certain lands. Implementing such a program would require funds that would have to be obtained or raised by the Town in order to create a Town-based incentive program.

Some Town residents have asked about grants. If the Town undertakes any projects to restore areas of the riparian buffer, obtaining grants is certainly worthwhile to pursue. The Town Board has sought and received grants in the past for stream bank stabilization and other stream-related projects; these grants contribute to the cost of the project but are not a direct payment to landowners. If a landowner would like to revegetate the riparian buffer area on his or her property, there are grants available; see <https://www.dec.ny.gov/chemical/106345.html>. Note that one of these is a program administered by the Tompkins County legislature.

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