

Natural Features

The Natural and Environmental Features Map indicates watercourses, 100-year floodplains, possibly hydric soils and steep slopes (15-25% and 25% or greater) in the Region. Watershed boundaries are also shown.

Floodplains

A 100-year floodplain is shown along the Mill Creek in Yoe.

Floodplains are areas adjacent to watercourses which are covered by water during times of flooding. A 100-year floodplain is the area adjacent to a river or stream which has a 1% chance of being flooded during any one year, and is typically used for regulatory purposes. Floodplains should not be developed, due to the potential for damage to persons and property. If development occurs within the floodplain, it may limit the floodway, resulting in increased damage downstream because of resulting increased velocities of the floodwater downstream. Outdoor storage of materials within floodplains is not desirable because of the possibility of the materials being swept into the stream when flooding of the banks occurs. One hundred-year floodplains are shown from Federal Emergency Management Agency (FEMA) Maps.

Care must be taken in disturbing areas along watercourses because increased sedimentation within the stream (increased depositing of soil within the stream) can occur. Increased impervious cover along watercourses typically increases the volume of storm water runoff into the streams. This additional runoff can erode stream banks and channels. If sedimentation increases, streambeds may fill, causing floodwaters to affect a larger area.

Wet (or "hydric") soils and floodplains along watercourses should be preserved from development in the interest of environmental preservation. These areas act like a sponge when floodwaters rise; when coupled with established wetlands they filter out nutrients and other pollutants, thereby protecting the quality of the storm flow into local surface water. Impervious surfaces should be restricted from stream bank areas in order to facilitate absorption of storm runoff into the ground. Such increased absorption can help to replenish groundwater and to decrease flood peaks, as less runoff will flow directly into the stream. Inadequate supply of groundwater may result in reduced flows of water in a stream during dry months, and the inability to sustain stream flow can mean a greater concentration of pollutants at periods of low flow.

Steep Slopes

There are limited areas of undeveloped steep slopes in the Boroughs. The greatest concentration of steep slopes is found in the "Slope Area" in south central Dallastown, at the headwaters of a tributary to the Barshinger Creek. In Yoe, areas of steep slope are located in the northwest corner of the Borough (next to the ballfield) and around the perimeter of portions of the Borough Park. In Red Lion, steep slopes are found in the area adjoining Route 624 near Fishing Creek, at the detention pond area near the Mazie Gabel School, in and near Fairmount Park and in the area between the Red Lion Mile and multi-family development to the north.

Slope is measured by the change in vertical elevation (the “rise”) over some horizontal distance (the “run”). This measurement is then expressed as a percentage. For example, if the ground rises two feet over a distance of twenty feet, then the slope is 2/20, or 10%. Areas that have slopes greater than 15% have limitations to development. In general, development of such land can result in hazardous winter road conditions, costly excavation, erosion and sedimentation issues, and accelerated velocity of stormwater runoff. In steep areas, development should be controlled such that natural vegetative cover is maintained to the greatest extent possible, and erosion controls instituted. Without such cover, stormwater runoff can rapidly erode the slopes.

Hydric Soils

Possibly hydric soils are found in the vicinity of the Mill Creek in Yoe and along the tributary to the Barshinger Creek near the southern boundary of Dallastown.

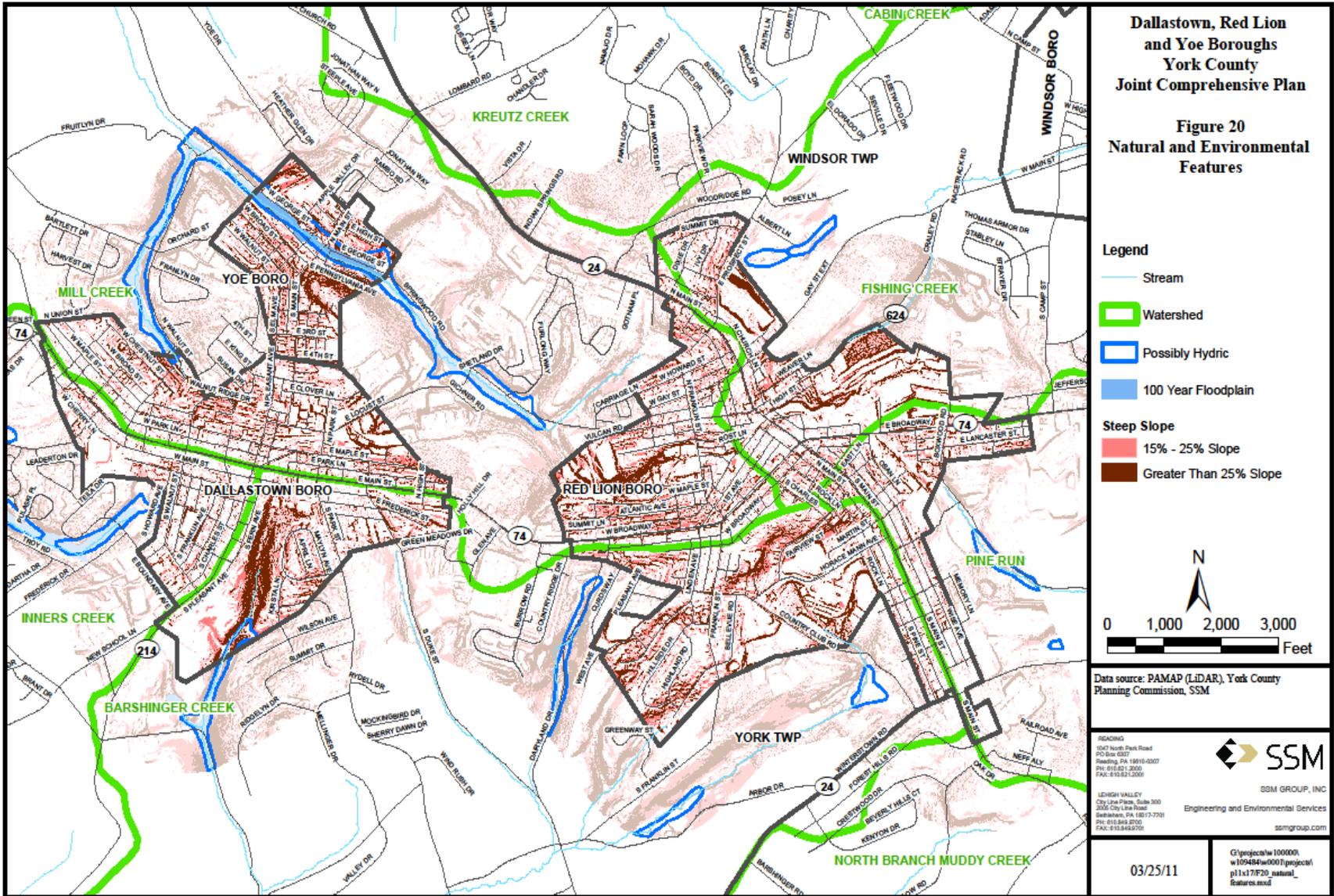
Hydric soils are soils that are flooded, ponded or saturated long enough during the growing season to develop anaerobic (without oxygen) conditions. They are typically poorly drained and have a shallow water table. Lack of oxygen in the soil leads to certain characteristics of wetlands soil such as: non-decomposed plant material, oxidized root channels, and concentrations and depletions of iron and other elements. These soils, if undrained, may exhibit wetland vegetation and be an indicator of wetlands.

Wooded Areas

Given the developed nature of the Boroughs, the extent of wooded areas is not great. Review of aerial photography shows wooded areas at the northwest and northeast corners of Yoe, at the Yoe Park, and east end of King Street in Dallastown. The largest areas of wooded land is found in south-central Dallastown, along the tributary to Barshinger Creek.

In Red Lion, wooded areas are found along Country Club Road on School District property, in Fairmount Park, along Boxwood Road at the eastern Borough boundary, along Route 624 near Fishing Creek, and in the western portion of the Borough between the Red Lion mile and multi-family development to the north.

Wooded areas provide shade, reduce pollution, act as noise barriers, prevent erosion, provide recreational and scenic enjoyment, produce oxygen and provide a habitat for birds and animals.



Steep Slopes	Steep Slopes of 15-25% have 15-25 feet of vertical change in elevation over 100 feet or horizontal distance. Very steep slopes of greater than 25% have a vertical change greater than 25 feet over 100 feet of horizontal distance.	
<p>Protection Importance:</p> <p>Preserving natural vegetation on steep slopes not only protects the natural habitat along the slope but also helps protect adjacent areas from stormwater runoff related damage.</p> <p>Woodlands are important scenic resources and protecting these areas from development preserves the vistas for all citizens and visitors to enjoy.</p> <p>Wooded steep slopes provide important wildlife and plant habitats.</p>	<p>Development Implications:</p> <p>These areas are prone to erosion if disturbed by development or timbering practices. In addition, changes in vegetation on steep slopes will effect the concentration time of stormwater runoff, potentially increasing flood, and storm damage to developments downslope.</p> <p>Once disturbed these areas are difficult to mitigate.</p> <p>These slopes present increased costs in development engineering and severe limitations with general road maintenance.</p> <p>Roadways and drives along steep slopes present many driving hazards, especially during the winter months.</p> <p>Increased building costs due to excavating and storm water and erosion controls.</p>	
<p>Protection Strategies:</p> <p>Protect wooded steep slopes as conservation areas.</p> <p>Limit development on slopes greater than 25%.</p> <p>Require detailed engineering plans for any developments proposed on steep slopes.</p> <p>Require stormwater managements for individual building lots.</p> <p>Require deduction of steep slopes from minimum lot size.</p>		



Slope area in Dallastown



Slope area near Fishing Creek, in Red Lion

Floodplains	Areas adjacent to a watercourse (stream) temporarily covered by water when the waterway exceeds its bankfull stage. The 100-year floodplain has been determined by the U.S. Army Corps of Engineers as to where water would be during the 100-year flood event. This flood event has a 1% chance of occurring every year, and is not a flood that 'occurs every 100 years'.
<p>Protection Importance:</p> <p>Prohibiting and limiting development within the floodplain provides for protection of people and property from flood damage and minimizes downstream flood heights.</p> <p>Retention of natural stream floodplain corridors increases groundwater recharge and decreases stormwater runoff.</p> <p>Vegetated riparian corridors serve as buffers to sustain and improve water quality via nutrient removal and erosion and sedimentation control.</p> <p>Floodplain wildlife and plant habitats often support wetlands and hydric soils.</p> <p>Floodplain habitats can provide important open space and recreation areas.</p>	<p>Development Implications:</p> <p>Residential development within the floodplain endangers both people and property in the event of a flood.</p> <p>Building, structures and filling within the floodplain increase downstream flood elevations and potential for flood damage.</p> <p>Compaction of soils and increasing impervious surfaces along a floodway reduces infiltration and increases the rate of runoff, resulting in increased flooding downstream and higher flow velocities that cause increased flood damage.</p> <p>Removal of the natural vegetated riparian buffer along streams and rivers increases potential for water contamination from surface runoff and erosion.</p> <p>Erosion and storm runoff from development can deteriorate stream banks and cause sedimentation of waterways. Sedimentation of streambeds decreases habitat for aquatic life.</p> <p>Development hinders aesthetic and recreational value of the waterway.</p> <p>Wildlife habitats can be harmed or destroyed by development.</p> <p>Outdoor storage can be washed downstream during flooding. This can have a multitude of problems ranging from polluting the water and surrounding areas with either chemical pollutants or debris.</p>
<p>Protection Strategies:</p> <p>Prohibit buildings, structures and large amounts of impervious surfaces within the 100-year floodplain to prevent damage to life and property.</p> <p>Limit impervious surfaces in developments adjacent to floodways.</p> <p>Prohibit mobile home developments from floodplain areas.</p> <p>Purchase conservation easements along streams to protect the floodplains and water quality.</p>	

Hydric Soils	These are soils that are wet frequently enough to produce anaerobic (without oxygen) conditions and support unique habitats and influence the biology of the soil. Hydric soils may be an indication of the presence of a wetland.	
<p>Protection Importance:</p> <p>Hydric soils provide natural groundwater recharge areas which can reduce flooding and manage stormwater runoff.</p> <p>The biologic organisms in hydric soils filter contaminants from water.</p>	<p>Development Implications:</p> <p>Hydric soils are associated with seasonally high water tables and may cause flooding in developed areas.</p> <p>These soils may be unsuitable for development.</p> <p>Hydric soils may provide poor foundation stability and flooded basements if built upon.</p>	
<p>Protection Strategies:</p> <p>Provide ordinance standards requiring wetland delineations by qualified professionals.</p> <p>Consider buffers for identified wetlands.</p>		

Wooded Areas	A wooded area is an area populated by trees and other woody plants.	
<p>Protection Importance:</p> <p>Large contiguous wooded tracts play an extremely important role in the protection of high quality watersheds and water resources.</p> <p>Wooded canopy along stream corridors provides shade to minimize the warming of stream temperatures and reduce impacts to fish and other aquatic species.</p> <p>Wooded riparian corridors help sustain stream water quality by acting as nutrient filters and by stabilizing soil against erosion.</p> <p>Wooded lands provide scenic relief and beauty.</p> <p>Undeveloped woodland allows for relatively high rates of infiltration or groundwater recharge and decrease of stormwater runoff.</p> <p>Buffer development.</p> <p>Purify air.</p> <p>Reduce noise pollution.</p>	<p>Development Implications:</p> <p>Development of wooded lands can fragment or remove habitat for plant and animal species.</p> <p>Removal of wooded riparian corridors has implications on water quality and clarity.</p> <p>Loss of these resources could have implications on quality of life.</p> <p>Improper development and management of wooded resources can allow invasive species to proliferate.</p>	
<p>Protection Strategies:</p> <p>Ordinance provisions and standards which require retention of woodland and protection of trees during development; landscaping standards which require native species establishment; limit of clearing until development plan approval; erosion/sedimentation plans, stormwater management; and retention of wooded canopy along watercourses.</p> <p>Provide for maximum lot coverage requirements and minimum open space areas in residential subdivisions.</p>		



Wooded area Along Red Lion Mile

Watercourses	Watercourses encompass bodies of water on the move, most commonly streams. These watercourses serve as habitat for aquatic plants and animals. In addition, streams are important recreational elements.	
<p>Protection Importance:</p> <p>Water resources can serve an important role in protecting and increasing land values and in the continued development of recreation facilities.</p> <p>Protection of surface water quality directly protects groundwater water quality.</p> <p>Provide important greenway linkages.</p>	<p>Development Implications:</p> <p>Removal of the natural vegetated riparian buffer along streams increases potential for water contamination from surface runoff and erosion.</p> <p>Erosion and storm runoff from development can deteriorate stream banks and cause sedimentation of waterways. Sedimentation of streambeds decreases habitat for aquatic life.</p> <p>Development can impact the aesthetic and recreational value of the waterways.</p>	
<p>Protection Strategies:</p> <p>Retain riparian wooded buffers along watercourses.</p> <p>To lessen the impact on scenic and environmental value, limit the types and density of development along streams.</p>		



Mill Creek in western Yoe

NATURAL AREAS INVENTORY SITES

The *Natural Areas Inventory of York County, Pennsylvania* identifies important natural areas for receiving protection. No sites are identified in the Boroughs.

PROTECTION OF NATURAL RESOURCES

Natural resources can be protected through ordinances and through administrative means. Provisions in zoning, subdivision and land development, floodplain management, storm water management and wellhead protection ordinances can protect areas of critical resources and minimize the impact of development on those resources. Administrative means, such as Official Maps provide guidance for ordinance provisions and other administrative conservation and acquisition programs. These maps identify conservation priorities, help identify key parcels to be preserved, and serve as a guide to developers as to what lands in their tracts should be retained as open space.

Administrative means include:

- Encourage landowners to grant easements or dedicate land to the Boroughs, non-profit groups, or conservation groups to protect resources. Where necessary, consider municipal acquisition of land. Key resources include the undeveloped portion of Mill Creek in Yoe, which can provide a recreational resource and setting for the Ma and Pa Greenway, and the wooded steep slope area in south-central Dallastown, which has been identified as a possible park.
- Show greenway land along the undeveloped portion of Mill Creek as greenway and the slope area in Dallastown as Park/Protected Area on a regional official map.

MUNICIPAL ORDINANCE ACTIONS

Dallastown

- Strengthen the Slope Zone regulations to further protect wooded areas, watercourses, and wet areas.

Steep Slope Protection Provisions can:

Control and limit development on steep slopes

- Require larger lot sizes and impose stricter impervious restriction for steep slopes 15-25%
- Prohibit or severely restrict development on slopes >25%

Tree and Woodland Protection, Management and Planting Provisions can:

- Limit clearance for development in both subdivisions and land developments
- Require tree protection and replacement during development
- Require use of native species in landscaping
- Establish limited clearance buffer zones around the perimeter of new developments

- Require wetland delineation in hydric soil areas.

Red Lion

- Consider steep slope protection standards.
- Consider tree and woodland protection, management and planting provisions.

Yoe

- Review the municipal floodplain management ordinances to determine whether development should be prohibited in areas which have not already experienced development.
- Enact provisions that will ensure any new development will be done with consideration of steep slope areas and wooded areas.

TREE VITALIZE PROGRAM

The TreeVitalize is a PADCNR-led program to enhance tree canopy cover in the state's more densely populated areas. Trees can be obtained for streets, parks and streamsides. Trees in the Boroughs can contribute to cooler temperatures, reduce storm water runoff and contribute to more attractive and utilized business districts. The Boroughs should consider participating in this program which can provide trees; training for community volunteers; mulch, soil and tree stakes; planting plan assistance; site preparation assistance; and planting assistance.

The Borough would be responsible for:

- Meeting with TreeVitalize field staff to discuss planting projects
- Registering for and completing Tree Tender® training before planting dates
- Collecting tree request forms and/or obtaining property owner permission to plant
- Developing an approved planting and maintenance plan
- Watering, mulching, and pruning trees for the first two years
- Keeping the community informed about the project