

Brief Map Unit Description

Delaware County, New York

[Only those map units that have entries for the selected description categories are included in this report]

Map unit: Bc - Barbour loam

Description category: locally created

Bc Barbour loam

(NON-HEL) This is a dark reddish brown, very deep (greater than 60"), well drained, medium-over-coarse textured soil. It occupies nearly level areas of flood plains and low terraces where occasional flooding occurs. Unlimed, it is very strongly to moderately acid in the surface and subsoil. Permeability is moderate in the surface and rapid in the subsoil. Available water capacity is moderate to high. This soil is suited to most cultivated crops grown in the area, and hay or pasture. The main problems are occasional flooding and streambank erosion. It is prime farmland.

It is generally unsuitable for buildings with basements and on-site septic systems due to the flooding hazard. Roads should be built on raised fill material to avoid the flooding limitations.

Some areas of this soil are on slightly higher terraces and are only rarely subject to flooding. On-site septic systems may be acceptable in these soils if special precautions are taken to control excessive substratum permeability. Hydrologic group is B. Soil group 1 of NY State system. Capability class is I.

Map unit: Bg - Barbour-Trestle complex

Description category: locally created

Bg Barbour-Trestle complex

(NON-HEL) This map unit consists of reddish brown, very deep (greater than 60"), well drained, loamy soils underlain by gravel or gravelly sands. The unit occupies nearly level areas of floodplains and low terraces in smaller valleys and is subject to rare flooding. Unlimed the soils range from very strongly acid to moderately acid in the surface layer and from very strongly acid to slightly acid in the subsoil.

Permeability is moderate in the surface and moderate to moderately rapid in the subsoil. Available water capacity of the Barbour soil is moderate; available water capacity of the Trestle soil is low. The soils of this unit are well suited to most cultivated crops grown in the area and hay or pasture. The main problems are flooding and streambank erosion. It is prime farmland.

It is generally unsuitable for buildings with basements and on-site septic systems due to the flooding hazard. Roads should be built on raised fill material to avoid the flooding limitations.

Some areas of this soil are on slightly higher terraces and are only rarely subject to flooding. On-site septic systems may be acceptable in these soils if special precautions are taken to control excessive substratum permeability. Hydrologic group is B. Soil group 2 of NY State System. Capability class is I.

Map unit: Bs - Basher silt loam

Description category: locally created

Bs Basher silt loam

(P HYDRIC, NON-HEL) This is a dark reddish brown, very deep (greater than 60"), moderately well drained, medium textured soil. It occupies nearly level flood plains where occasional flooding occurs. Unlimed, it is very strongly to medium acid in the surface and subsoil. Permeability is moderate in the surface and upper subsoil and moderately slow in the lower subsoil and substratum. Available water capacity is moderate to high. This soil is well suited to all cultivated crops grown in the area and hay or pasture. The main problems are a slight seasonal wetness, occasional flooding and streambank erosion. It is prime farmland.

The high risk of flooding makes this soil unsuitable for on-site septic systems or buildings with basements. Severe frost action should be expected where road construction is planned. Constructing roads on raised fill and using a coarse grained sub-base will help overcome frost and flooding limitations. The hydrologic group is B/D. Soil group 2 of NY State system. Capability subclass is IIw.

Brief Map Unit Description

Delaware County, New York

Map unit: BtB - Bath channery silt loam, 3 to 8 percent slopes

Description category: locally created

BtB Bath channery silt loam, 3 to 8 percent slope

(PHEL) This is a very deep (greater than 60"), well drained, medium textured soil, which has a fragipan at 26 to 38 inches. It occupies gently sloping areas in the uplands. Unlimed, it is very strongly acid to medium acid. Permeability is moderate above the fragipan and slow or very slow in the fragipan. Available water capacity is moderate above the fragipan and very low in the fragipan. It is well suited to cropland, hay or pasture. The main problem is a slight erosion hazard when tilled. It is a fragile soil and is prime farmland.

It is generally suited for septic systems, although slow permeability in the fragipan layer may necessitate special leach field designs.

Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for moderate potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. Hydrologic group is C/D. Soil group 3 of NY State system. Capability subclass is IIe.

Map unit: BtC - Bath channery silt loam, 8 to 15 percent slopes

Description category: locally created

BtC Bath channery silt loam, 8 to 15 percent slopes

(HEL) This is a very deep (greater than 60"), well drained, medium textured soil, which has a fragipan at 26 to 38 inches. It occupies sloping areas in the uplands. Unlimed, it is very strongly acid to medium acid. Permeability is moderate above the fragipan but slow or very slow in the fragipan. Available water capacity is moderate above the fragipan but very slow in the fragipan. It is suited to cropland, hay or pasture. The main problem is a moderate to severe erosion hazard when tilled, due to slope.

It is generally suited for septic systems, although slow permeability in the fragipan layer may necessitate special leach field designs.

Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for moderate potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. 8 to 15% slopes require care during development. Hydrologic group is C/D. Soil group 5 of NY State system. Capability subclass is IIIe.

Map unit: BtD - Bath channery silt loam, 15 to 25 percent slopes

Description category: locally created

BtD Bath channery silt loam, 15 to 25 percent slopes

(HEL) This very deep (greater than 60"), well drained soil occupies moderately steep to hilly areas on uplands. A fragipan is present at a depth of 26 to 38 inches. Permeability is moderate in the surface and subsoil and slow in the substratum. Available water capacity is moderate. Runoff is rapid. In unlimed areas, reaction ranges from very strongly acid to medium acid in the surface and subsurface layers. This soil has a limited potential for cropping. With adequate water and fertility management, it is fairly well suited to long-term alfalfa and hay crops but is not well suited for cultivated crops. The moderately steep or hilly slopes, severe erosion hazard, and slow permeability in the subsoil are the principal problems.

It is marginally suited for septic systems due to steep slopes and dense fragipan layers. Land shaping, installing leach field lines on the contour or constructing the field on a flatter included area can help overcome slope limitations. Buildings with basements should have their foundations sealed and footer drains installed to reduce seasonal wetness problems. Roads should be constructed on the contour as much as possible. A severe erosion hazard exists whenever this soil is disturbed. Hydrologic group is C/D. Soil Group 6 of NY State system. Capability subclass is IVe.

Map unit: BtE - Bath channery silt loam, 25 to 35 percent slopes

Description category: locally created

BtE Bath channery silt loam, 25 to 35 percent slopes

(HEL) This is a very deep (greater than 60"), steeply sloping, well drained soil that has a fragipan at 26 to 38 inches. Permeability is moderate in the surface and slow or very slow in the subsoil or substratum. Most areas of this soil are wooded. The steep slopes severely limit its use. Woodland production on this soil is good. Care should be taken to control erosion when building logging roads. These areas furnish good woodland wildlife habitats.

Due to excessive slope, this soil is not suited for development uses. Any road construction should be on the contour. An extreme erosion hazard exists whenever this soil is disturbed. Hydrologic group is C/D. Soil Group 8 of NY State system. Capability subclass is VIe.

Brief Map Unit Description

Delaware County, New York

Map unit: Bw - Bucksport and Wonsqueak soils

Description category: locally created

Bw Bucksport and Wonsqueak soils

(HYDRIC, NON-HEL) These soils are deep to very deep, very poorly drained organic soils that formed from the highly decomposed remains of woody or herbaceous plants. They occur typically in upland depressions or bogs above approximately 1700 feet elevation. The thickness of the organic deposit over mineral material is less than 51 inches for the Wonsqueak soil and greater than 51 inches for the Bucksport soil. Areas of these soils are usually small, difficult to drain adequately, and are therefore best suited to wetland or wildlife uses. The pH ranges from extremely acid to slightly acid.

It is generally unsuitable for on-site septic systems, buildings with basements and road construction due to low soil strength and poor drainage. Areas of this soil are typical of jurisdictional wetlands. The hydrologic group is A/D. Soil Group 10 of NY State system. Capability subclass is Vw.

Map unit: CaE - Cadosia extremely channery loam, 15 to 35 percent slopes, very bouldery

Description category: locally created

CaE -- Cadosia extremely channery loam, 15 to 35% slopes, very bouldery

(HEL) This soil is moderately to steeply sloping, very deep (>60 inches) and well drained. It occurs on hillsides in uplands below 1750 ft. elevation. Textures are medium in the upper soil layers and moderately coarse in the substratum. Permeability is moderate in upper soil layers and the lower subsoil. Boulders larger than 24 inches commonly occupy 3 to 15% of the soil surface. Seasonal high water table is at depths >6 feet.

Steep slopes and surface boulders limit the use of this soil to woodland and wildlife uses. Steep slopes limit the use of this soil for buildings with basements and onsite septic systems. Flatter areas should be chosen as preferred building sites. Large boulders can interfere with construction operations. A severe erosion hazard exists whenever this soil is disturbed. Road construction should follow natural contours as closely as possible. Hydrologic soil group is B. Soil Group 8 of NY State system. Capability subclass is VIIIs.

Map unit: CaF - Cadosia extremely channery loam, 35 to 70 percent slopes, very bouldery

Description category: locally created

CaF -- Cadosia extremely channery loam, 35 to 70% slopes, very bouldery

(HEL) This soil is very steeply sloping, very deep (>60 inches) and well drained. It occurs on hillsides in uplands below 1750 ft. elevation. Textures are medium in the upper soil layers and moderately coarse in the substratum. Permeability is moderate in the surface layers through the subsoil and substratum. Boulders larger than 24 inches commonly occupy 3 to 15% of the soil surface. Seasonal high water table is at depths >6 feet.

Very steep slopes and surface boulders limit the use of this soil to woodland and wildlife uses. Steep slopes exclude the use of this soil for development purposes. Flatter, more suitable areas should be chosen as preferred building sites. Large boulders will interfere with construction operations. An extreme erosion hazard exists whenever this soil is disturbed. Road construction should follow natural contours closely. Hydrologic soil group is B. Soil Group 9 of NY State system. Capability subclass is VIIIs.

Map unit: Ce - Carlisle and Palms soils

Description category: locally created

Ce Carlisle and Palms soils

(HYDRIC, NON-HEL) These soils are deep to very deep, very poorly drained organic soils that formed from the highly decomposed remains of woody or herbaceous plants. They occur typically in upland depressions or kettle hole depressions in valleys. The thickness of the organic deposit over mineral material is less than 51 inches for the Palms soil and greater than 51 inches for the Carlisle soil. Areas of these soils are usually small, difficult to drain adequately, and are therefore best suited to wetland or wildlife uses. The pH ranges from very strongly acid to neutral.

Due to prolonged wetness and slow subsoil permeability, this soil is not suitable for onsite septic systems or buildings with basements. Severe frost action should be expected where road construction is planned. Constructing roads on raised fill and using a coarse grained sub-base will help overcome frost and wetness limitations. Hydrologic group is A/D. Capability subclass is Vw.

Brief Map Unit Description

Delaware County, New York

Map unit: ChA - Chenango gravelly silt loam, 0 to 3 percent slopes

Description category: locally created

ChA Chenango gravelly silt loam, 0 to 3 percent slopes

(NON-HEL) This is a very deep (greater than 60"), well drained to somewhat excessively drained, medium to coarse textured soil. It formed in nearly level areas of water-sorted sand and gravel deposits. Unlimed, it is very strongly to strongly acid in the surface and very strongly to medium acid in the subsoil. Permeability is moderate to rapid in the subsoil and very rapid in the substratum. Available water capacity is moderate to low. This soil is suitable for a wide range of crops, hay and pasture. The main problems are a tendency to be droughty and gravel or stones which may interfere with cultivation or harvesting equipment. It is prime farmland.

This soil is suited to on-site septic systems, although excessive permeability in the substratum can cause groundwater pollution. Shallow leachfield installations or accepted practices to reduce excessive subsoil permeability can help overcome this limitation. This soil is well suited to buildings with basements and for road construction. Hydrologic group is A. Soil Group 2 of NY State system. Capability subclass is IIs.

Map unit: ChB - Chenango gravelly silt loam, 3 to 8 percent slopes

Description category: locally created

ChB Chenango gravelly silt loam, 3 to 8 percent slopes

(PHEL) This is a very deep (greater than 60"), well drained to somewhat excessively drained, medium to coarse textured soil. It formed in gently undulating areas of water-sorted sand and gravel deposits. Unlimed, it is very strongly to strongly acid in the surface and very strongly to medium acid in the subsoil. Permeability is moderate to rapid in the subsoil and very rapid in the substratum. Available water capacity is moderate to low. This soil is suitable for a wide range of crops, hay and pasture. The main problems are a tendency to be droughty and gravel or stones which may interfere with cultivation or harvesting. The erosion hazard is slight. It is prime farmland.

Onsite septic systems on this soil can cause groundwater pollution due to excessive substratum permeability. Shallow leachfield installations or accepted practices to reduce excessive subsoil permeability can help overcome this limitation. This soil is well suited to buildings with basements and for road construction. Hydrologic group is A. Soil Group 2 of NY State system. Capability subclass is IIs.

Map unit: ChC - Chenango gravelly silt loam, 8 to 15 percent slopes

Description category: locally created

ChC Chenango gravelly silt loam, 8 to 15 percent slopes

(HEL) This is a very deep (greater than 60"), well to somewhat excessively drained, medium to coarse textured soil. It formed in rolling areas of water-sorted sand and gravel deposits. Unlimed, it is very strongly to strongly acid in the surface and very strongly to medium acid in the subsoil. Permeability is moderate to moderately rapid in the subsoil and very rapid in the substratum. Available water capacity is moderate to low. This soil has limited suitability for cultivated crops. Hay and pasture are better suited. The main problems are the slopes, the tendency to be droughty, gravel or stones which may interfere with cultivation or harvesting, and a moderate erosion hazard.

Onsite septic systems on this soil can cause groundwater pollution due to excessive substratum permeability. Shallow leachfield installations or accepted practices to reduce excessive subsoil permeability can help overcome this limitation. This soil is well suited to buildings with basements and for road construction, but slope creates a moderate erosion hazard during construction. Hydrologic group is A. Soil group 5 of NY State System. Capability subclass is IIIe.

Map unit: ChD - Chenango gravelly silt loam, 15 to 25 percent slopes

Description category: locally created

ChD Chenango gravelly silt loam, 15 to 25 percent slopes

(HEL) This is a very deep (greater than 60"), well to somewhat excessively drained, medium to coarse textured soil. It formed in moderately steep areas of water-sorted sand and gravel deposits. Unlimed, it is very strongly to strongly acid in the surface and very strongly to medium acid in the subsoil. Permeability is moderate to rapid in the subsoil and very rapid in the substratum. Available water capacity is moderate to low. This soil is best suited to woodland or grassland. The main problems are the steep slopes that make cultivation hazardous and the severe erosion hazard when tilled. Most areas are wooded or idle.

Slope and excessive substratum permeability limit this soil for onsite septic systems; special designs that accommodate the slope and rapid permeability should be used. Slope limits the use of this soil for buildings and road construction. Land shaping and construction along natural contours will help overcome this limitation. Hydrologic group is A. Soil Group 6 of NY State system. Capability subclass is IVe.

Brief Map Unit Description

Delaware County, New York

Map unit: ChE - Chenango gravelly silt loam, 25 to 50 percent slopes

Description category: locally created

ChE Chenango gravelly silt loam, 25 to 40 percent slopes

(HEL) This is a very deep (greater than 60"), well to somewhat excessively drained, medium to coarse textured soil. It formed in steep areas of water-sorted sand and gravel deposits. Unlimed, it is very strongly to strongly acid in the surface and very strongly to medium acid in the subsoil. Permeability is moderate to rapid in the subsoil and very rapid in the substratum. Available water capacity is moderate to low. This soil is best suited to woodland or grassland. The main problems are the steep slopes that make cultivation hazardous and the severe erosion hazard when tilled. Most areas are wooded or idle.

Due to excessive slope, this soil is not suited to development uses. Any road construction should be on the contour. A severe erosion hazard exists whenever this soil is disturbed. Hydrologic group is A. Soil group 8 of NY State System. Capability subclass is Vle.

Map unit: CoB - Collamer silt loam, 3 to 8 percent slopes

Description category: locally created

CoB Collamer silt loam, 3 to 8 percent slopes

(PHEL) This is a very deep (greater than 60"), moderately well drained soil. It is medium textured in the surface and moderately fine textured in the upper subsoil and fine textured in the lower subsoil and substratum. It occupies gently sloping terraces or parts of old lake plains in valleys. Unlimed, it is moderately acid to neutral in the surface and subsoil and slightly acid in the substratum. Permeability is moderate in the surface and upper subsoil and slow in lower subsoil and substratum. Available water capacity is high. This soil well suited for crops, hay or pasture. It can be cultivated intensively. The main problems are seasonal wetness that can delay field work, a moderate erosion hazard if cultivated, and clodding and puddling if tilled at excessive moisture content. It is prime farmland.

It is suitable for only those septic systems that are specially designed to accommodate conditions of a high seasonal water table and subsoils that have slow permeability.

Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for high potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. Hydrologic group is C/D. Soil Group 3 of NY State system. Capability subclass is Ile.

Map unit: CoC - Collamer silt loam, 8 to 15 percent slopes

Description category: locally created

CoC Collamer silt loam, 8 to 15 percent slopes

(HEL) This is a very deep (greater than 60"), moderately well drained soil. It is medium textured in the surface, moderately fine textured in the upper subsoil, and fine textured in the lower subsoil and substratum. It occupies strongly sloping terraces or parts of old lake plains in valleys. Unlimed, it is moderately acid to neutral in the surface and subsoil and slightly acid in the substratum. Permeability is moderate in the surface and upper subsoil and slow in lower subsoil and substratum. Available water capacity is high. This soil suited for crops, hay or pasture. The main problems are a moderate to severe erosion hazard when cultivated or the vegetative cover is disturbed, seasonal wetness that can delay field work, and clodding and puddling if tilled at excessive moisture content.

It is suitable for only those septic systems that are specially designed to accommodate conditions of a high seasonal water table and subsoils that have slow permeability.

Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for high potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is C/D. Soil Group 5 of NY State system. Capability subclass is IIIe.

Brief Map Unit Description

Delaware County, New York

Map unit: De - Deposit gravelly silt loam

Description category: locally created

De Deposit gravelly silt loam

(P HYDRIC) This is a very deep (greater than 60"), moderately well drained, medium to coarse textured soil. The substratum is composed of stratified sands and gravel. It occupies nearly level areas on low terraces in valleys, or on the flat parts of alluvial fans where rare flooding occurs. Unlimed, it is strongly acid to neutral in the surface and subsoil. Permeability is moderate to moderately rapid in the surface, moderately rapid in the subsoil, and rapid or very rapid in the substratum. Available water capacity is moderate. This soil is well suited to cropland, hay, or pasture. The main problems are rare flooding, slight seasonal wetness in early season, and droughtiness, which is a concern in mid or late summer. It is prime farmland.

Due to the seasonal high water table and rapid subsoil permeability, septic systems in this soil should have special designs to overcome these limitations. Buildings with basements should have their foundations sealed and adequate footing drains installed. Moderate frost action limits this soil for road construction. Constructing roads on raised fill and using a coarse grained sub-base will help overcome this limitation. Hydrologic group is A/D. Soil Group 3 of NY State system. Capability subclass is IIw.

Map unit: EdC - Elka channery silt loam, 8 to 15 percent slopes

Description category: locally created

EdC Elka channery silt loam, 8 to 15 percent slopes

(HEL) This is a reddish brown, very deep (greater than 60"), well drained, medium textured soil. It occupies strongly sloping hillsides above approximately 1,750 feet elevation in the uplands. Unlimed, it is very strongly acid to moderately acid in the surface and subsoil. Permeability is moderate throughout. Available water capacity is moderate throughout the soil. This soil is suited to cropland, hayland and pasture. The main problems are a moderate erosion hazard when tilled, and a shortened growing season due to elevation.

It is suited to septic systems and buildings with basements. Road construction on this soil should allow for moderate potential frost action; use of coarse-grained subbase material can minimize frost damage. Slopes of 8 to 15% require care for development to reduce erosion hazards. Hydrologic group is B. Soil Group 6 of NY State system. Capability subclass is IIIe.

Map unit: EdD - Elka channery silt loam, 15 to 25 percent slopes

Description category: locally created

EdD Elka channery silt loam, 15 to 25 percent slopes

(HEL) This is a reddish brown, very deep (greater than 60"), well drained, medium textured soil. It occupies moderately steep hillsides above approximately 1,750 feet elevation in the uplands. Unlimed, it is very strongly acid to moderately acid in the surface and subsoil. Permeability is moderate throughout. Available water capacity is moderate throughout the soil. This soil poorly suited to cultivated crops. It is suited to hayland and pasture. The main problems are a significant erosion hazard when tilled, a shortened growing season due to elevation and slopes that may limit the operation of equipment.

It is suited to building with basements and to septic systems if land regrading or special designs are used to accommodate the moderately steep slopes. 15 to 25% slopes require extreme care to minimize erosion hazards during development. Roads should be constructed on the contour where possible. Use of coarse grained subbase materials will help reduce the moderate potential of frost damage. Hydrologic group is B. Soil Group 7 of NY State system. Capability subclass is IVe.

Map unit: EdE - Elka channery silt loam, 25 to 35 percent slopes

Description category: locally created

EdE Elka channery silt loam, 25 to 35 percent slopes

(HEL) This is a reddish brown, very deep (greater than 60"), well drained, medium textured soil. It occupies moderately steep to steep hillsides above approximately 1,750 feet elevation in the uplands. Unlimed, it is very strongly acid to moderately acid in the surface and subsoil. Permeability is moderate throughout. Available water capacity is moderate throughout the soil. Steep slope limits the use of these soils to pasture and woodland. Erosion is a hazard where the surface vegetative cover is disturbed.

It is suited to building with basements and to septic systems if land regrading or special designs are used to accommodate the moderately steep slopes. 15 to 25% slopes require extreme care to minimize erosion hazards during development. Roads should be constructed on the contour where possible. Use of coarse grained subbase materials will help reduce the moderate potential of frost damage. Hydrologic group is B. Soil Group 7 of NY State system. Capability subclass is VIe.

Brief Map Unit Description

Delaware County, New York

Map unit: EkC - Elka-Vly channery silt loams, 5 to 15 percent slopes

Description category: locally created

EkC Elka-Vly channery silt loams, 5 to 15 percent slopes

(PHEL) This map unit consists of a complex of the reddish brown, very deep (greater than 60") medium textured Elka soil, and the reddish brown, moderately deep (20-40") Vly soil. They occupy gently sloping to strongly sloping areas on broad hilltops and saddle positions and hillsides above approximately 1,750 feet elevation in the uplands. Unlimed, they are both very strongly acid to moderately acid in the surface and subsoil. Permeability in both soils is moderate throughout. Available water capacity is moderate in the Elka soil and low in the Vly soil. The unit is suited to cropland, hay and pasture. The main problems with this unit are the moderate erosion hazard when tilled, and droughtiness, especially the Vly component, which may limit forage production. The growing season is shortened due to elevation.

Deeper areas of this soil (Elka) are typically suitable for septic systems; shallower areas (Vly) may need special leach field designs. Depth to bedrock limits the use of this soil for buildings with basements and road construction. Careful site investigation and planning may reduce or eliminate the need for blasting. Slopes greater than 8% require care during development to reduce erosion hazards. Hydrologic group is B (Vly portion is C). Soil Group 6 of NY State system. Capability subclass is IIIe.

Map unit: EkD - Elka-Vly channery silt loams, 15 to 25 percent slopes

Description category: locally created

EkD Elka-Vly channery silt loams, 15 to 25 percent slopes

(HEL) This map unit consists of a complex of the reddish brown, very deep (greater than 60"), medium textured Elka soil, and the reddish brown, moderately deep (20-40") Vly soil. They occupy moderately steep areas on hillsides above approximately 1,750 feet elevation in the uplands. Unlimed, they are both very strongly acid to moderately acid in the surface and subsoil. Permeability in both soils is moderate throughout. Available water capacity is moderate in the Elka soil and low in the Vly soil. The unit is poorly suited to cultivated crops because of a significant erosion hazard, but is suitable for hayland and pasture. The main problems with this unit are droughtiness, especially the Vly component, which may limit forage production. The growing season is shortened due to elevation.

Soil depth and steep slopes limit the use of this soil for septic systems, buildings with basements and road construction. An erosion hazard exists whenever steep areas of Vly soils are disturbed. Development should occur in flatter areas of the Elka soil, when possible. Otherwise, costly blasting and regrading of bedrock may be needed. Hydrologic group is B (Vly portion is C). Soil Group 7 of NY State system. Capability subclass is IVe.

Map unit: EIC - Elka-Vly channery silt loams, 3 to 15 percent slopes, very stony

Description category: locally created

EIC Elka-Vly complex, 3 to 15 percent slopes, very stony

(HEL) This map unit consists of a complex of the reddish brown, very deep (greater than 60") medium textured Elka soil, and the reddish brown, moderately deep (20-40") Vly soil. They occupy gently sloping areas on broad hilltops and saddle positions above approximately 1,750 feet elevation in the uplands. Unlimed, they are both very strongly acid to moderately acid in the surface and subsoil. Permeability in both soils is moderate throughout. Available water capacity is moderate in the Elka soil and low in the Vly soil. Excessive surface stones limit the use of this map unit to woodland and pasture.

Deeper areas of this soil (Elka) are typically suitable for septic systems, although large stones may interfere with leachfield installation; areas of shallower soil (Vly) may need special leach field designs. Depth to bedrock limits the use of this soil for buildings with basements and road construction. Careful site investigation and planning may reduce or eliminate the need for blasting. Slopes greater than 8% require care during development to reduce erosion hazards. Hydrologic group is B (Vly portion is C). Soil Group 8 of NY State system. Capability subclass is VIe.

Brief Map Unit Description

Delaware County, New York

Map unit: EIE - Elka-Vly channery silt loams, 15 to 35 percent slopes, very stony

Description category: locally created

EIE Elka-Vly complex, 15 to 35 percent slopes, very stony (HEL) This map unit consists of a complex of the reddish brown, very deep (greater than 60") medium textured Elka soil, and the reddish brown, moderately deep (20-40") Vly soil. They occupy moderately steep to steep areas along the sides of ridges and hills above approximately 1,750 feet elevation in the uplands. Unlimed, they are both very strongly acid to moderately acid in the surface and subsoil. Permeability in both soils is moderate throughout. Available water capacity is moderate in the Elka soil and low in the Vly soil. The steep slopes and excessive surface stones limit the use of this map unit to woodland and pasture.

Soil depth and steep slopes limit the use of this soil for septic systems, buildings with basements and road construction. Large stones may interfere with septic system leachfield installation. A severe erosion hazard exists whenever steep areas of Vly soils are disturbed. Development should occur in flatter areas of the Elka soil, when possible. Otherwise, costly blasting and regrading of bedrock may be needed. Hydrologic group is B (Vly portion is C). Soil Group 8 of NY State system. Capability subclass is VIs.

Map unit: EIF - Elka-Vly channery silt loams, 35 to 70 percent slopes, very stony

Description category: locally created

EIF Elka-Vly complex, 35 to 70 percent slopes, very stony (HEL) This map unit consists of a complex of the reddish brown, very deep (greater than 60") medium textured Elka soil, and the reddish brown, moderately deep (20-40") Vly soil. They occupy very steep areas along the sides of ridges and hills above approximately 1,750 feet elevation in the uplands. Unlimed, they are both very strongly acid to moderately acid in the surface and subsoil. Permeability in both soils is moderate throughout. Available water capacity is moderate in the Elka soil and low in the Vly soil. The steep slopes and excessive surface stones limit the use of this map unit to woodland and pasture.

Steep slopes and soil depth severely limit the use of this soil for septic systems, buildings with basements and road construction. A severe erosion hazard exists whenever steep areas of Vly soils are disturbed. A more suitable soil should be chosen for development. Hydrologic group is B (Vly portion is C). Soil Group 9 of NY State system. Capability subclass is VIIIs.

Map unit: Ff - Fluvaquents-Udifluvents complex, frequently flooded

Description category: locally created

Ff Fluvaquents-Udifluvents complex, frequently flooded (HYDRIC) This is composed of many soils along narrow stream channels. Fluvaquents are located in lower, wetter areas while Udifluvents are in slightly higher, better drained areas of the map unit. These soils flood frequently, resulting in both erosion and deposition. Texture is variable. These soils are not suitable for crops. Some of these areas are pastured, but brush predominates. Flooding and wetness hazards make this soil unsuitable for development uses. A more suitable site on nearby soils should be selected. Hydrologic group is A/D. Soil Group 9 of NY State system.

Map unit: HcC - Halcott, Mongaup, and Vly soils, 2 to 15 percent slopes, very rocky

Description category: locally created

HcC Halcott, Mongaup, and Vly soils, 2 to 15 percent slopes, very rocky (HEL) This map unit consists of the shallow (10-20"), somewhat excessively drained, medium textured Halcott soil, the moderately deep (20-40"), well drained, medium textured Mongaup and Vly soils, and frequent outcroppings of bedrock. This complex of soils and rock is mapped above approximately 1,750 feet elevation on ridgetops with 3% to 15% slopes. Due to shallow depths to and exposures of bedrock, these areas are best suited to woodland and wildlife uses. Shallow depth to bedrock severely limits this soil for most development purposes. Pockets of the deeper Mongaup and Vly soils are sometimes extensive enough for low density building sites. Otherwise, costly blasting and removal of bedrock may be necessary. Septic systems should be carefully sited, designed and constructed since areas of this soil can be important groundwater recharge zones. Hydrologic group is D. Soil Group 8 of NY State system. Capability subclass is VIIs.

Brief Map Unit Description

Delaware County, New York

Map unit: HcE - Halcott, Mongaup, and Vly soils, 15 to 35 percent slopes, very rocky

Description category: locally created

HcE Halcott, Mongaup, and Vly soils, 15 to 35 percent slopes, very rocky (HEL) This map unit consists of the shallow (10-20"), somewhat excessively drained, medium textured Halcott soil, the moderately deep (20-40"), well drained, medium textured Mongaup and Vly soils, and frequent outcroppings of bedrock. This complex of soils and rock is mapped above approximately 1,750 feet elevation on hillsides with 15% to 35% slope. Due to shallow depths to and exposures of bedrock, and steep slopes, these areas are best suited to woodland and wildlife uses.

Steep slopes and shallow depth to bedrock severely limit this soil for most development purposes. A severe erosion hazard exists whenever this soil is disturbed. Grading activities typically require large amounts of cut and fill with costly blasting and removal of bedrock. If present, small areas of flatter, included soils may provide limited development potential. Hydrologic group is D. Soil group 8 of NY State system. Capability subclass is VII.

Map unit: HcF - Halcott, Mongaup, and Vly soils, 35 to 70 percent slopes, very rocky

Description category: locally created

HcF Halcott, Mongaup, Vly soils, 35 to 70 percent slopes, very rocky (HEL) This map unit consists of the shallow (10-20"), somewhat excessively drained, medium textured Halcott soil, the moderately deep (20-40"), well drained, medium textured Mongaup and Vly soils, and frequent outcroppings of bedrock. This complex of soils and rock is mapped above approximately 1,750 feet elevation on hillsides with greater than 35% slope. Due to shallow depths to and exposures of bedrock, and the very steep slopes, these areas are best left to native woodland and wildlife uses.

Very steep slopes and shallow depth to bedrock severely limit this soil for most development purposes. An extreme erosion hazard exists whenever this soil is disturbed. Grading activities typically require large amounts of cut and fill with costly blasting and removal of bedrock. Areas of this soil are best left to wildlife and woodland uses. Hydrologic group is D. Soil group 9 of NY State System. Capability subclass is VII.

Map unit: LaB - Lackawanna flaggy silt loam, 3 to 8 percent slopes

Description category: locally created

LaB Lackawanna flaggy silt loam, 3 to 8 percent slopes (PHEL) This is a reddish brown, very deep (greater than 60"), well drained, medium textured soil that has a fragipan at 20 to 36 inches. It occupies gently sloping areas of glacial till in the uplands. Unlimed, it is very strongly to strongly acid above the fragipan. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is well suited for cropland, hayland and pasture. The main problems are flagstones that may interfere with tillage, and a slight erosion hazard when tilled. It is prime farmland.

It is generally suited for septic systems, although the fragipan layer may necessitate special leach field designs. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for moderate potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. Hydrologic group is C/D. Soil Group 4 of NY State system. Capability subclass is IIe.

Map unit: LaC - Lackawanna flaggy silt loam, 8 to 15 percent slopes

Description category: locally created

LaC Lackawanna flaggy silt loam, 8 to 15 percent slopes (HEL) This is a reddish brown, very deep (greater than 60"), well drained, medium textured soil that has a fragipan at 20 to 36 inches. It occupies sloping areas of glacial till in the uplands. Unlimed, it is very strongly to strongly acid above the fragipan. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is suitable for cropland, hayland and pasture. The main problems are a moderate erosion hazard when tilled, and flagstones that may interfere with tillage.

It is generally suited for septic systems, although the fragipan layer may necessitate special leach field designs. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for moderate potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is C/D. Soil Group 6 of NY State system. Capability subclass is IIIe.

Brief Map Unit Description

Delaware County, New York

Map unit: LaD - Lackawanna flaggy silt loam, 15 to 25 percent slopes

Description category: locally created

LaD Lackawanna flaggy silt loam, 15 to 25 percent slopes (HEL) This very deep (greater than 60"), well drained to moderately well drained, reddish brown soil has a fragipan at 20 to 36 inches. It occupies moderately steep to hilly areas on uplands. Permeability is moderate above the fragipan and slow in the pan. Available water capacity is moderate. Unlimed, it is very strongly to strongly acid above the fragipan. Surface runoff is rapid. Tilth is good, but workability is reduced by the moderately steep slopes and the flat stones in the surface layer. The soil has a poor potential for farming due to moderately steep slopes and high erosion hazard. It is not suitable for cultivation except on the lesser slopes where long-term hay is in the rotation.

It is marginally suited for septic systems due to steep slopes and dense fragipan layers. Land shaping, installing leach field lines on the contour or constructing the field on a flatter included area can help overcome slope limitations.

Buildings with basements should have their foundations sealed and footer drains installed to reduce seasonal wetness problems. Roads should be constructed on the contour as much as possible. A severe erosion hazard exists whenever this soil is disturbed. Hydrologic group is C/D. Soil Group 7 of NY State system. Capability subclass is IVe.

Map unit: LaE - Lackawanna flaggy silt loam, 25 to 40 percent slopes

Description category: locally created

LaE Lackawanna flaggy silt loam, 25 to 40 percent slopes (HEL) This soil is very deep (greater than 60"), well drained, medium textured and has a fragipan at 20 to 36 inches. It occupies steep to very steep areas in the uplands. Unlimed, it is very strongly to medium acid above the fragipan. Permeability is moderate above and low in the fragipan. Available water capacity is moderate. The steep slopes limit the use of these soils to woodland and pasture.

Due to excessive slope, this soil is not suited for development uses. Any road construction should be on the contour. An extreme erosion hazard exists whenever this soil is disturbed. Hydrologic group is C/D. Soil Group 8 of NY State system. Capability subclass is VIe.

Map unit: LcD - Lackawanna-Morris complex, 15 to 35 percent slopes, very stony

Description category: locally created

LcD Lackawanna-Morris complex, 15 to 35 percent slopes, very stony (P HYDRIC, HEL) This map unit consists of a complex of two very deep (greater than 60"), medium textured soils that have fragipans. It occupies hilly to steep terrain in the uplands, usually below steep areas with exposed bedrock. The Lackawanna soil is well drained. The Morris soil is somewhat poorly drained and occurs in the numerous springs and seep spots that are common in this map unit. The permeability of both soils is moderate above and slow within the fragipan. Excessive surface stones, steep slopes and wetness limit the use of this soil to rough pasture, woodland and wildlife.

It is not suited for septic systems due to steep slopes, high water table and dense fragipan layers. Buildings with basements should have their foundations sealed and footer drains installed to reduce seasonal wetness problems. Roads should be constructed on the contour as much as possible. A severe erosion hazard exists whenever this soil is disturbed. Hydrologic group is C/D. Soil Group 9 of NY State system. Capability subclass is VIi.

Map unit: LdC - Lackawanna and Bath soils, 3 to 15 percent slopes, very stony

Description category: locally created

LdC Lackawanna and Bath soils, 3 to 15 percent slopes, very stony (HEL) These soils are very deep (greater than 60"), well drained, medium textured and have a fragipan at 20 to 36 inches. They occupy gently sloping and sloping areas in the uplands. Unlimed, they are very strongly to medium acid above the fragipan. Permeability is moderate above and slow within the fragipan. Available water capacity is moderate. Excessive surface stones limit the use of these soils to woodland and pasture.

It is generally suited for septic systems, although the fragipan layer may necessitate special leachfield designs. Surface stoniness may add extra costs to land development.

Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for moderate potential frost action; proper drainage and using a coarse-grained sub-base will help reduce frost damage. 8-15% slopes require care during development to reduce erosion hazards. Hydrologic group is C/D. Soil group 8 of NY State System. Capability subclass is VIi.

Brief Map Unit Description

Delaware County, New York

Map unit: LdE - Lackawanna and Bath soils, 15 to 35 percent slopes, very stony

Description category: locally created

LdE Lackawanna and Bath soils, 15 to 35 percent slopes, very stony (HEL) These soils are very deep (greater than 60"), well drained, medium textured and have a fragipan at 20 to 36 inches. They occupy moderately steep and steep areas in the uplands. Unlimed, they are very strongly to medium acid above the fragipan. Permeability is moderate above and slow within the fragipan. Available water capacity is moderate. The steep slopes and excessive surface stones limit the use of these soils to woodland and pasture.

Steep slopes, fragipan layers and many surface stones make this soil generally unsuitable for septic systems. If present, small areas of flatter, included soils may provide some limited development potential. A severe erosion hazard exists whenever this soil is disturbed; road construction should closely follow land contours. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Hydrologic group is C/D. Soil Group 8 of NY State system. Capability subclass is VI.

Map unit: LdF - Lackawanna and Bath soils, 35 to 55 percent slopes, very stony

Description category: locally created

LdF Lackawanna and Bath soils, 35 to 60 percent slopes, very stony (HEL) These soils are on rugged terrain. They are very deep (greater than 60"), well drained, medium textured and have a fragipan at 20 to 36 inches. They occupy very steep areas of glacial till in the uplands. Normally, many stones are in the surface layer. Unlimed, it is very strongly to medium acid above the fragipan. Permeability is moderate above and slow within the fragipan. Available water capacity is moderate. The steep slopes limit the use of these soils to woodland and wildlife.

Very steep slopes and fragipan layers make this soil unsuitable for septic systems. An extreme erosion hazard exists whenever this soil is disturbed; road construction should closely follow land contours. A more suitable soil should be chosen for development. Hydrologic group is C/D. Soil Group 9 of NY State system. Capability subclass is VII.

Map unit: LeB - Lewbath flaggy loam, 3 to 8 percent slopes

Description category: locally created

LeB Lewbath flaggy loam, 3 to 8 percent slopes (PHEL) This soil is brown, very deep (greater than 60"), well drained, medium textured and has a fragipan at 20 to 38 inches. It occupies gently sloping areas above approximately 1750 feet elevation in the uplands. Unlimed, it is very strongly to strongly acid above the fragipan. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is suitable for cropland, hayland and pasture. The main problems are a shortened growing season due to elevation, flagstones that may interfere with tillage, and a slight erosion hazard when tilled. It is prime farmland.

It is generally suited for septic systems, although the fragipan layer may necessitate special leach field designs. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for moderate potential frost action; proper drainage and using a coarse-grained sub-base will help reduce frost damage. Hydrologic group is C/D. Soil Group 4 of NY State system. Capability subclass is II.

Map unit: LeC - Lewbath flaggy loam, 8 to 15 percent slopes

Description category: locally created

LeC Lewbath flaggy loam, 8 to 15 percent slopes (HEL) This soil is brown, very deep (greater than 60"), well drained, medium textured and has a fragipan at 20 to 38 inches. It occupies sloping areas above approximately 1750 feet elevation in the uplands. Unlimed it is very strongly to strongly acid above the fragipan. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is suitable for cropland, hayland and pasture. The main problems are a moderate erosion hazard when tilled, a shortened growing season due to elevation, and occasional flagstones that may interfere with tillage.

It is generally suited for septic systems, although the fragipan layer may necessitate special leach field designs. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for moderate potential frost action; proper drainage and using a coarse-grained sub-base will help reduce frost damage. 8 to 15% slopes require care for development to reduce erosion hazards. Hydrologic group is C/D. Soil Group 6 of NY State system. Capability subclass is III.

Brief Map Unit Description

Delaware County, New York

Map unit: LeD - Lewbath flaggy loam, 15 to 25 percent slopes

Description category: locally created

LeD Lewbath flaggy loam, 15 to 25 percent slopes

(HEL) This soil is brown, very deep (greater than 60"), well drained, medium textured and has a fragipan at 20 to 38 inches. It occupies moderately steep to hilly areas on uplands above approximately 1750 feet elevation. Permeability is moderate above the fragipan and slow in the pan. Available water capacity is moderate. Unlimed, it is very strongly to strongly acid above the fragipan. Surface runoff is rapid. The soil has a high erosion hazard due to moderately steep slopes and slow permeability in the fragipan. It is not suitable for cultivation except on the lesser slopes where long-term hay is in the rotation. Hay crops are suitable use for this soil.

It is marginally suited for septic systems due to steep slopes and dense fragipan layers. Land shaping, installing leach field lines on the contour or constructing the field on a flatter included area can help overcome slope limitations.

Buildings with basements should have their foundations sealed and footer drains installed to reduce seasonal wetness problems. Roads should be constructed on the contour as much as possible. A severe erosion hazard exists whenever this soil is disturbed. Hydrologic group is C/D. Soil Group 7 of NY State system. This soil is in Capability subclass IVe.

Map unit: LeE - Lewbath flaggy loam, 25 to 35 percent slopes

Description category: locally created

LeE Lewbath flaggy loam, 25 to 35 percent slopes

(HEL) This soil is very deep (greater than 60"), well drained, brown, medium textured and has a fragipan at 20 to 38 inches. It occupies steep to very steep areas above approximately 1750 feet elevation in the uplands. Unlimed, it is very strongly to medium acid above the fragipan. Permeability is moderate above and slow in the fragipan. Available water capacity is moderate. The steep slopes limit the use of these soils to woodland and pasture.

Due to excessive slope, this soil is not suited for development uses. Any road construction should be on the contour. An extreme erosion hazard exists whenever this soil is disturbed. Hydrologic group is C/D. Soil Group 8 of NY State system. Capability subclass is VIe.

Map unit: LhB - Lewbeach channery loam, 3 to 8 percent slopes

Description category: locally created

LhB Lewbeach channery loam, 3 to 8 percent slopes

(PHEL) This soil is reddish brown, very deep (greater than 60"), well drained, medium textured and has a fragipan at 18 to 36 inches. It occupies gently sloping areas above approximately 1750 feet elevation in the uplands. Unlimed, it is very strongly to strongly acid above the fragipan. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is suitable for cropland, hayland and pasture. The main problems are a shortened growing season due to elevation, flagstones that may interfere with tillage, and a slight erosion hazard when tilled. It is prime farmland.

It is generally suited for septic systems, although the fragipan layer may necessitate special leach field designs. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for moderate potential frost action; proper drainage and using a coarse-grained sub-base will help reduce frost damage. Hydrologic group is D. Soil Group 4 of NY State system. Capability subclass is IIe.

Map unit: LhC - Lewbeach channery loam, 8 to 15 percent slopes

Description category: locally created

LhC Lewbeach channery loam, 8 to 15 percent slopes

(HEL) This soil is brown, very deep (greater than 60"), well drained, medium textured and has a fragipan at 18 to 36 inches. It occupies sloping areas above approximately 1750 feet elevation in the uplands. Unlimed it is very strongly to strongly acid above the fragipan. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is suitable for cropland, hayland and pasture. The main problems are a moderate erosion hazard when tilled, a shortened growing season due to elevation, and occasional flagstones that may interfere with tillage.

It is generally suited for septic systems, although the fragipan layer may necessitate special leach field designs. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for moderate potential frost action; proper drainage and using a coarse-grained sub-base will help reduce frost damage. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is D. Soil Group 6 of NY State system. Capability subclass is IIIe.

Brief Map Unit Description

Delaware County, New York

Map unit: LhD - Lewbeach channery loam, 15 to 25 percent slopes

Description category: locally created

LhD Lewbeach channery loam, 15 to 25 percent slopes

(HEL) This soil is brown, very deep (greater than 60"), well drained, medium textured and has a fragipan at 18 to 36 inches. It occupies moderately steep to hilly areas on uplands above approximately 1750 feet elevation. Permeability is moderate above the fragipan and slow in the pan. Available water capacity is moderate. Unlimed, it is very strongly to strongly acid above the fragipan. Surface runoff is rapid. The soil has a high erosion hazard due to moderately steep slopes and slow permeability in the fragipan. It is not suitable for cultivation except on the lesser slopes where long term hay is in the rotation. Hay crops are a suitable use for this soil.

It is marginally suited for septic systems due to steep slopes and dense fragipan layers. Land shaping, installing leach field lines on the contour or constructing the field on a flatter included area can help overcome slope limitations. Buildings with basements should have their foundations sealed and footer drains installed to reduce seasonal wetness problems. Roads should be constructed on the contour as much as possible. A severe erosion hazard exists whenever this soil is disturbed. Hydrologic group is D. Soil Group 7 of NY State system. This soil is in capability class IVe.

Map unit: LhE - Lewbeach channery loam, 25 to 40 percent slopes

Description category: locally created

LhE Lewbeach channery loam, 25 to 40 percent slopes

(HEL) This soil is very deep (greater than 60"), well drained, medium textured and has a fragipan at 18 to 36 inches. It occupies steep to very steep areas above approximately 1750 feet elevation in the uplands. Unlimed, it is very strongly to medium acid above the fragipan. Permeability is moderate above and slow in the fragipan. Available water capacity is moderate. The steep slopes limit the use of these soils to woodland and pasture.

Due to excessive slope, this soil is not suited for development uses. Any road construction should be on the contour. An extreme erosion hazard exists whenever this soil is disturbed. Hydrologic group is D. Soil Group 8 of NY State System. Capability subclass is VIe.

Map unit: LkC - Lewbeach and Lewbath soils, 3 to 15 percent slopes, very stony

Description category: locally created

LkC Lewbeach channery loam, 3 to 15 percent slopes, very stony

(PHEL) The soils of this unit are very deep (greater than 60"), well drained, medium textured and have a fragipan at 18 to 38 inches. They occupy gently sloping and sloping areas above approximately 1750 feet in the uplands. Unlimed, they are very strongly to medium acid above the fragipan. Permeability is moderate above and slow within the fragipan. Available water capacity is moderate. Excessive surface stones limit the use of the soils of this unit to woodland and pasture.

This soil unit is generally suited for septic systems, although the fragipan layer may necessitate special leachfield designs. Surface stoniness may add extra costs to land development.

Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil unit should allow for moderate potential frost action; proper drainage and using a coarse-grained sub-base will help reduce frost damage. 8-15% slopes require care during development to reduce erosion hazards. Hydrologic group is D. Soil Group 8 of NY State system. Capability subclass is VIe.

Map unit: LkE - Lewbeach and Lewbath soils, 15 to 35 percent slopes, very stony

Description category: locally created

LkE Lewbeach channery loam, 15 to 35 percent slopes, very stony

(HEL) The soils of this unit are very deep (greater than 60"), well drained, medium textured and have a fragipan at 18 to 38 inches. They occupy moderately steep and steep areas above 1700 feet elevation in the uplands. Unlimed, they are very strongly to medium acid above the fragipan. Permeability is moderate above and slow within the fragipan. Available water capacity is moderate. The steep slopes and excessive surface stones limit the use of the soils of this unit to woodland and pasture.

Steep slopes, fragipan layers and many surface stones make this map unit generally unsuitable for septic systems. If present, small areas of flatter, included soils may provide some limited development potential. A severe erosion hazard exists whenever these soils are disturbed; road construction should closely follow land contours. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Hydrologic group is D. Soil Group 8 of NY State System. Capability subclass is VIe.

Brief Map Unit Description

Delaware County, New York

Map unit: LkF - Lewbeach and Lewbath soils, 35 to 55 percent slopes, very stony

Description category: locally created

LkF Lewbeach channery loam, 35 to 55 percent slopes, very stony

(HEL) The soils of this unit are on rugged terrain. They are very deep (greater than 60"), well drained, medium textured and have a fragipan at 18 to 38 inches. They occupy very steep areas of glacial till above 1750 feet elevation in the uplands. Normally, many stones are in the surface layer. Unlimed, They are very strongly to medium acid above the fragipan. Permeability is moderate above and slow within the fragipan. Available water capacity is moderate. The steep slopes limit the use of the soils of this unit to woodland and wildlife.

Very steep slopes and fragipan layers make these soils unsuitable for septic systems. An extreme erosion hazard exists whenever these soils are disturbed; road construction should closely follow land contours. A more suitable soil should be chosen for development. Hydrologic group is D. Soil Group 9 of NY State system. Capability subclass is VIIs.

Map unit: LoB - Lordstown channery silt loam, 2 to 8 percent slopes

Description category: locally created

LoB Lordstown channery silt loam, 2 to 8 percent slopes

(PHEL) This is a moderately deep, well drained, medium textured soil. It occupies gently sloping areas on the higher ridges and hilltops. Unlimed, it is very strongly to medium acid. Bedrock occurs at 20 to 40 inches below this soil. Permeability is moderate. Available water capacity is moderate. This soil is suited for crops, hay and pasture. The main problems are the flagstones that may interfere with cultivation, the shallowness to bedrock, and the slight erosion hazard when tilled. Many of these areas are used for hay and pasture or are wooded. It is a fragile soil and is prime farmland.

Deeper areas of this soil are typically suitable for septic systems; shallower areas may need special leach field designs. Depth to bedrock limits the use of this soil for buildings with basements and road construction. Costly blasting and removal of bedrock may be necessary. Careful site investigation and planning may reduce or eliminate the need for blasting. Hydrologic group is C. Soil Group 4 of NY State system. Capability subclass is IIe.

Map unit: LoC - Lordstown channery silt loam, 8 to 15 percent slopes

Description category: locally created

LoC Lordstown channery silt loam, 8 to 15 percent slopes

(HEL) This is a moderately deep, well drained, medium textured soil. It occupies sloping areas on the higher ridges and hilltops. Unlimed, it is very strongly to medium acid. Bedrock occurs at 20 to 40 inches below this soil. Permeability is moderate. Available water capacity is moderate. This soil is suited for crops, hay and pasture. The main problems are the flagstones that may interfere with cultivation, the erosion hazard when tilled, and the shallowness to bedrock. Many of these areas are used for hay and pasture or are wooded.

Deeper areas of this soil are typically suitable for septic systems; shallower areas may need special leach field designs. Depth to bedrock limits the use of this soil for buildings with basements and road construction. Costly blasting and removal of bedrock may be necessary. Careful site investigation and planning may reduce or eliminate the need for blasting. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is C. Soil Group 6 of NY State system. Capability subclass is IIIe.

Map unit: LoD - Lordstown channery silt loam, 15 to 25 percent slopes

Description category: locally created

LoD Lordstown channery silt loam, 15 to 25 percent slopes

(HEL) This is a moderately deep (20-40"), well drained, medium textured and moderately steep soil. Slopes limit the cultivation of these soils unless soil conservation measures are used. The use of equipment has moderate limitations because of slope. The hazard of erosion is severe if the soils are left without protective cover. Tillage needs to be largely confined to renovation for hay and pasture.

Depth to bedrock and slope limit this soil for most development uses. Careful site investigation and selection of a flatter, deeper soil is recommended. Special septic system designs that accommodate steep slopes may be possible in deeper soil areas. Constructing roads on the contour will help minimize the need for blasting and reduce erosion hazards. A severe erosion hazard exists whenever this soil is disturbed. Hydrologic group is C. Soil Group 7 of NY State system. Capability subclass is IVe.

Brief Map Unit Description

Delaware County, New York

Map unit: LoE - Lordstown channery silt loam, 25 to 40 percent slopes

Description category: locally created

LoE Lordstown channery silt loam, 25 to 40 percent slopes

(HEL) This is a moderately deep (20-40"), well drained, medium textured and steep soil. Permeability is moderate. Available water capacity is moderate. The use of equipment has severe limitations because of slope. The hazard of erosion is severe if the soils are left without protective cover.

Depth to bedrock and slope limit this soil for most development uses. Selection of a flatter, deeper soil is strongly recommended. All road construction across this soil should follow land contours as closely as possible. Blasting may be required. An extreme erosion hazard exists whenever this soil is disturbed. Hydrologic group is C. Soil Group 9 of NY State system. Capability subclass is VIIe.

Map unit: MaB - Maplecrest gravelly silt loam, 3 to 8 percent slopes

Description category: locally created

MaB Maplecrest gravelly silt loam, 3 to 8 percent slopes

(PHEL) This is a reddish brown, very deep (greater than 60"), gently sloping, well drained, medium textured soil that is underlain by gravel and gravelly sands. Unlimed, it is very strongly to moderately acid in the surface and subsoil. Available water capacity is high in the surface and low in the substratum. Permeability is moderate to rapid. This soil is suited to cultivated crops, pasture and trees. It is prime farmland.

It is well suited to septic systems and buildings with basements. Road construction on this soil should allow for moderate potential frost action; use of coarse-grained subbase material can minimize frost damage. Hydrologic group is B. Soil group 2 of NY State System. Capability class is IIe.

Map unit: MaC - Maplecrest gravelly silt loam, 8 to 15 percent slopes

Description category: locally created

MaC Maplecrest gravelly silt loam, 8 to 15 percent slopes

(HEL) This is a reddish brown, very deep (greater than 60"), sloping, well drained, medium textured soil that is underlain by gravel and gravelly sands. Unlimed, it is very strongly to moderately acid in the surface and subsoil. Available water capacity is high in the surface and low in the substratum. Permeability is moderate to rapid. This soil is suited to cultivated crops, pasture and trees. Measures should be taken to control runoff and erosion on cultivated areas.

It is well suited to septic systems and buildings with basements. Road construction on this soil should allow for moderate potential frost action; use of coarse-grained subbase material can minimize frost damage. 8 to 15% slopes require care for development to reduce erosion hazards. Hydrologic group is B. Soil group 5 of NY State System. Capability class is IIIe.

Map unit: MaD - Maplecrest gravelly silt loam, 15 to 25 percent slopes

Description category: locally created

MaD Maplecrest gravelly silt loam, 15 to 25 percent slopes

(HEL) This is a reddish brown, very deep (greater than 60"), moderately steep, well drained, medium textured soil that is underlain by gravel and gravelly sands. Permeability is moderate to rapid. Moderately steep slopes limit the use of this soil for crops. This soil is hazardous to work and the hazard of erosion is severe in cultivated areas that are not protected. Pasture and trees are well suited to this soil.

It is suited to building with basements and to septic systems if land regrading or special designs are used to accommodate the moderately steep slopes. Roads should be constructed on the contour where possible. Use of coarse grained subbase materials will help reduce the moderate potential of frost damage. 15 to 25% slopes require extreme care to minimize erosion hazards during development. Hydrologic group is B. Soil Group 6 of NY State system. Capability class is IVe.

Brief Map Unit Description

Delaware County, New York

Map unit: MaE - Maplecrest gravelly silt loam, 25 to 60 percent slopes

Description category: locally created

MaE Maplecrest gravelly silt loam, 25 to 60 percent slopes

(HEL) This is a reddish brown, very deep (greater than 60"), steep, well drained, medium textured soil that is underlain by gravel and gravelly sands. Permeability is moderate to rapid. This soil is too steep for crops, but is well suited to trees, and in places is suitable for pasture. Runoff is rapid, and the hazard of erosion is severe in cultivated areas that are left unprotected.

Due to steep slopes this soil is usually unsuitable for development purposes. Selecting a flatter area of this soil, design to conform to the natural slope and extensive land shaping may help overcome the slope limitation. Road construction should follow natural contours as much as possible. An extreme erosion hazard exists whenever this soil is disturbed. Hydrologic group is B. Soil group 7 of NY State System. Capability class is Vle.

Map unit: MdB - Mardin channery silt loam, 3 to 8 percent slopes

Description category: locally created

MdB Mardin channery silt loam, 3 to 8 percent slopes

(PHEL) This is a very deep (greater than 60"), moderately well drained, medium textured soil that has a fragipan at 15 to 26 inches. It occupies gently sloping areas in uplands. Unlimed, it is very strongly to medium acid above the fragipan. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is suited to cropland, hay and pasture. The main problem is the slight seasonal wetness.

It is suitable for only those septic systems that are specially designed to accommodate conditions of high seasonal water tables and dense subsoils. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for high potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. Hydrologic group is C/D. Soil Group 4 of NY State system. Capability class is llw.

Map unit: MdC - Mardin channery silt loam, 8 to 15 percent slopes

Description category: locally created

MdC Mardin channery silt loam, 8 to 15 percent slopes

(HEL) This soil is very deep (greater than 60"), moderately well drained, medium textured and has a fragipan at 15 to 26 inches. It occupies sloping areas in the uplands. Unlimed, it is very strongly to medium acid above the fragipan. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is suited to cropland, hayland and pasture. The main problems are the slight seasonal wetness, and the moderate erosion hazard when tilled.

It is suitable for only those septic systems that are specially designed to accommodate conditions of high seasonal water tables and dense subsoils. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for high potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is C/D. Soil Group 6 of NY State system. Capability subclass is IIIe.

Map unit: MdD - Mardin channery silt loam, 15 to 25 percent slopes

Description category: locally created

MdD Mardin channery silt loam, 15 to 25 percent slopes

(HEL) This is a moderately steep, very deep (greater than 60"), moderately well drained soil that has a fragipan at 15 to 26 inches. Permeability is moderate in the upper subsoil and slow or very slow in the fragipan. Slope makes this soil hazardous to work with modern machinery. The hazard of erosion is severe in cultivated areas that are not protected. Pasture and trees are well suited to this soil.

Due to slope, dense subsoils and wetness problems, this soil is marginally suited for septic systems. Special leachfield designs and considerable fill material are usually required. Locating the leachfield on a flatter included area is recommended.

Seasonal wetness and slope can be problems in buildings with basements; installing footing drains, sealing the foundation, and land shaping to divert surface runoff will help reduce these problems. Road construction should allow for high potential frost action; proper drainage and use of a coarse-grained subbase will help reduce frost damage. Roads should follow natural land contours closely. Severe erosion and sediment hazards exist when this soil is disturbed. Hydrologic group is C/D. Soil Group 7 of NY State system. Capability class is IVe.

Brief Map Unit Description

Delaware County, New York

Map unit: MKB - Middlebrook-Mongaup complex, 2 to 8 percent slopes

Description category: locally created

MkB Middlebrook-Mongaup complex, 2 to 8 percent slopes

(PHEL) This map unit consists of a complex of two moderately deep (20-40") medium textured soils. They occupy gently sloping areas on broad ridges and hilltops above approximately 1,750 feet elevation in the uplands. The Middlebrook soil is moderately well drained and the Mongaup soil is well drained. The permeability for the Middlebrook soil is moderate in the surface and upper subsoil, and slow in the lower subsoil, and is moderate throughout in the Mongaup soil. Unlimed, the soils are moderately to extremely acid throughout. Available water capacity in both soils is moderate. The soils of this unit are suitable for cropland, hay, or pasture. The main problems are the slight seasonal wetness, shallowness to bedrock, a slight erosion hazard when tilled, and a shortened growing season due to elevation.

Suitability for septic systems can vary widely from place to place on this map unit. Deeper areas of Mongaup soil may be suited to low density development, while shallower areas of Middlebrook soil are typically unsuitable. Variations in depth to bedrock and depth to water tables make careful site selection important.

Depth to bedrock and wetness severely limit this soil for buildings with basements. Careful site selection of a deeper, included soil may avoid costly blasting. Frost action and depth to rock reduce this soil's suitability for road construction. Proper drainage and use of a coarse-grained subbase will reduce frost damage. Careful site selection will reduce the need for blasting. Hydrologic group is C/D. Soil Group 4 of NY State system. Capability subclass is Iw.

Map unit: MKC - Middlebrook-Mongaup complex, 8 to 15 percent slopes

Description category: locally created

MkC Middlebrook-Mongaup complex, 8 to 15 percent slopes

(HEL) This map unit consists of a complex of two moderately deep (20-40"), medium textured soils. They occupy strongly sloping areas on broad ridges and hilltops above approximately 1,750 feet elevation in the uplands. The Middlebrook soil is moderately well drained and the Mongaup soil is well drained. The permeability for the Middlebrook soil is moderate in the surface and upper subsoil, and slow in the lower subsoil, and is moderate throughout in the Mongaup soil. Unlimed, the soils are moderately to extremely acid throughout. Available water capacity in both soils is moderate. The soils of this unit are suitable for cropland, hay, or pasture. The main problems are slope, slight seasonal wetness, shallowness to bedrock, a moderate erosion hazard when tilled, and a shortened growing season due to elevation.

Suitability for septic systems can vary widely from place to place on this map unit. Deeper areas of Mongaup soil may be suited to low density development, while shallower areas of Middlebrook soil are typically unsuitable. Variations in depth to bedrock and depth to water tables make careful site selection important. Depth to bedrock and wetness severely limit this soil for buildings with basements. Careful site selection of a deeper, included soil may avoid costly blasting. Frost action and depth to rock reduce this soil's suitability for road construction. Proper drainage and use of a coarse-grained subbase will reduce frost damage. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is C/D. Soil Group 6 of NY State system. Capability subclass is IIIe.

Map unit: MnB - Mongaup channery loam, 2 to 8 percent slopes

Description category: locally created

MnB Mongaup channery loam, 2 to 8 percent slopes

(PHEL) This soil is brown, moderately deep (20-40"), well to excessively drained, and medium textured. It occupies gently sloping areas on ridges and hilltops above approximately 1,750 feet elevation in the uplands. Unlimed, it is strongly to very strongly acid. Permeability is moderate. Available water capacity is moderate. This soil is suitable for cropland, hay, or pasture. The main problems are the shallow depth to bedrock, a slight erosion hazard when tilled, and a shortened growing season due to elevation.

Suitability for septic systems can vary widely from place to place on this map unit. Deeper areas of Mongaup soil may be suited to low density development. Variations in depth to bedrock and depth to water tables make careful site selection important.

Depth to bedrock and wetness severely limit this soil for buildings with basements. Careful site selection of a deeper, included soil may avoid costly blasting. Frost action and depth to rock reduce this soil's suitability for road construction. Proper drainage and use of a coarse-grained subbase will reduce frost damage. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is C. Soil Group 6 of NY State system. Capability subclass is IIe.

Brief Map Unit Description

Delaware County, New York

Map unit: MnC - Mongaup channery loam, 8 to 15 percent slopes

Description category: locally created

MnC Mongaup channery loam, 8 to 15 percent slopes

(HEL) This soil is brown, moderately deep (20-40"), well to excessively drained and medium textured. It occupies sloping areas on ridges and hilltops above approximately 1,750 feet elevation in the uplands. Unlimed, it is strongly to very strongly acid. Permeability is moderate. Available water capacity is moderate. This soil is suitable for cropland, hay, or pasture. The main problems are the shallow depth to bedrock, a moderate erosion hazard when tilled, and a shortened growing season due to elevation.

Deeper areas of this soil are typically suitable for septic systems; shallower areas may need special leachfield designs. Depth to bedrock limits the use of this soil for buildings with basements and road construction. Careful site investigation and planning may reduce or eliminate the need for blasting. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is C. Soil Group 7 of NY State system. Capability subclass is IIIe.

Map unit: MnD - Mongaup channery loam, 15 to 25 percent slopes

Description category: locally created

MnD Mongaup channery loam, 15 to 25 percent slopes

(HEL) This soil is brown, moderately deep (20-40"), well to excessively drained, and medium textured. It occupies moderately steep areas on hillsides above approximately 1,750 feet elevation in the uplands. Unlimed, it is strongly to very strongly acid. Permeability is moderate. Available water capacity is moderate. This soil is suitable for hay, pasture or woodland uses. The main problems are the shallow depth to bedrock, moderately steep slopes, a severe erosion hazard when tilled, and a shortened growing season due to elevation.

Depth to bedrock and slope limit this soil for most development uses. Careful site investigation and selection of a flatter, deeper soil is recommended. Constructing roads on the contour will help minimize the need for blasting and reduce erosion hazards. A severe erosion hazard exists whenever this soil is disturbed. Hydrologic group is C. Soil Group 8 of NY State system. Capability subclass is IVe.

Map unit: MrA - Morris flaggy silt loam, 0 to 3 percent slopes

Description category: locally created

MrA Morris flaggy silt loam, 0 to 3 percent slopes

(P HYDRIC, NON-HEL) This is a reddish brown, very deep (greater than 60"), somewhat poorly drained, medium textured soil that has a fragipan at 10 to 20 inches. It occupies nearly level areas in the uplands. Unlimed, it is strongly to slightly acid. Permeability is moderate above the fragipan and slow to moderately slow in the fragipan. Available water capacity is moderate. This soil is suited for cropland, hay and pasture. The main problems are the prolonged wetness and the flagstones that may interfere with tillage. The wetness limits the choice of crops that can be grown.

It is generally unsuited to septic systems due to prolonged seasonal wetness and dense subsoils. If present, small areas of drier, included soils may provide limited use of specially designed or alternative septic systems.

Prolonged seasonal wetness severely limits its use for buildings with basements. A better drained, included or adjacent soils should be selected. This soil creates problems for road construction due to high potential frost action and wetness. Proper drainage and use of a coarse-grained sub-base will help reduce these problems. Hydrologic group is D. Soil Group 6 of NY State system. Capability subclass is IIIw.

Brief Map Unit Description

Delaware County, New York

Map unit: MrB - Morris flaggy silt loam, 3 to 8 percent slopes

Description category: locally created

MrB Morris flaggy silt loam, 3 to 8 percent slopes

(P HYDRIC, PHEL) This is a reddish brown, very deep (greater than 60"), somewhat poorly drained, medium textured soil that has a fragipan at 10 to 20 inches. It occupies gently sloping areas in the uplands. Unlimed, it is strongly to slightly acid. Permeability is moderate above the fragipan and slow to moderately slow in the fragipan. Available water capacity is moderate. This soil is suited for cropland, hay and pasture. The main problems are the prolonged wetness and the flagstones that may interfere with tillage. The wetness limits the choice of crops that can be grown.

It is generally unsuited to septic systems due to prolonged seasonal wetness and dense subsoils. If present, small areas of drier, included soils may provide limited use of specially designed or alternative septic systems.

Prolonged seasonal wetness limits its use for buildings with basements. Careful and costly drainage installations and extensive efforts to seal basement walls may overcome this limitation. Otherwise, a better drained, included or adjacent soil should be selected. This soil creates problems for road construction due to high potential frost action and wetness. Proper drainage and use of a coarse-grained sub-base will help reduce these problems. Hydrologic group is D. Soil Group 6 of NY State system. Capability subclass is IIIw.

Map unit: MrC - Morris flaggy silt loam, 8 to 15 percent slopes

Description category: locally created

MrC Morris flaggy silt loam, 8 to 15 percent slopes

(P HYDRIC, HEL) This soil is reddish brown, very deep (greater than 60"), somewhat poorly drained, medium textured, and has a fragipan at 10 to 20 inches. It occupies sloping areas in the uplands. Unlimed, it is strongly to slightly acid. Permeability is moderate above the fragipan and slow to moderately slow in the fragipan. This soil is suited for cropland, hay and pasture. The main problems are the prolonged wetness, the erosion hazard when tilled, and the flagstones that may interfere with tillage. The wetness limits the choice of crops that can be grown.

It is generally unsuited to septic systems due to prolonged seasonal wetness and dense subsoils. If present, small areas of drier, included soils may provide limited use of specially designed or alternative septic systems.

Prolonged seasonal wetness limits its use for buildings with basements. Careful and costly drainage installations and extensive efforts to seal basement walls may overcome this limitation. Otherwise, a better drained, included or adjacent soil should be selected. This soil creates problems for road construction due to high potential frost action and wetness. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is D. Soil Group 7 of NY State system. Capability subclass is IIIe.

Map unit: MsB - Morris and Volusia soils, 2 to 10 percent slopes, very stony

Description category: locally created

MsB Morris and Volusia soils, 2 to 10 percent slopes, very stony

(P HYDRIC, PHEL) These soils are very stony, very deep (greater than 60"), somewhat poorly drained, medium textured and have fragipans. They occupy gently sloping and sloping areas in the uplands. Unlimed, they are very strongly to slightly acid. Permeability is moderate above the fragipan and slow to very slow in the fragipan. Available water capacity is moderate. These soils are best suited to woodland and wildlife. Some areas are pastured. The main problems are excessive stoniness and wetness.

It is generally unsuited to septic systems due to wetness, dense subsoils and large surface stones. It is generally unsuited to buildings with basements due to wetness. Road construction on this soil should provide for wetness and high potential frost action; proper drainage and use of a coarse-grained sub-base will help overcome these problems. Hydrologic group is D. Soil Group 8 of NY State system. Capability subclass is VI.

Brief Map Unit Description

Delaware County, New York

Map unit: No - Norchip silt loam

Description category: locally created

No Norchip silt loam

(HYDRIC, NON-HEL) This soil is very deep (greater than 60"), poorly drained, medium textured and has a fragipan. It occupies nearly level areas in the uplands. Unlimed, it is very strongly to slightly acid above the fragipan. Permeability is moderate or moderately slow above the fragipan and slow or very slow in the fragipan and substratum. Available water capacity is moderate. This soil is best suited to woodland and wildlife, although some areas are pastured. The main problem is prolonged wetness.

Due to wetness and slowly permeable subsoils, this soil is not suited to septic systems or buildings with basements. A drier, more suitable soil should be selected. Wetness and high potential frost action can create problems for road construction. Proper drainage and use of a coarse-grained sub-base will help overcome these problems. Hydrologic group is D. Soil Group 7 of NY State system. Capability subclass is IVw.

Map unit: Nr - Norchip silt loam, very stony

Description category: locally created

Nr Norchip silt loam, very stony

(HYDRIC, NON-HEL) This soil is very deep (greater than 60"), poorly drained, medium textured and has a fragipan. It occupies nearly level areas in the uplands. Unlimed, it is very strongly to slightly acid above the fragipan. This soil is best suited for woodland and wildlife, although some areas are pastured. The main problems are excessive stoniness and prolonged wetness.

Due to wetness and slowly permeable subsoils, this soil is not suited to septic systems or buildings with basements. A drier, more suitable soil should be selected. Wetness and high potential frost action can create problems for road construction. Proper drainage and use of a coarse-grained sub-base will help overcome these problems. Hydrologic group is D. Soil Group 8 of NY State system. Capability subclass is VII.

Map unit: OeA - Oteora channery silt loam, 0 to 3 percent slopes

Description category: locally created

OeA Oteora channery silt loam, 0 to 3 percent slopes

(P HYDRIC, NON-HEL) This soil is reddish brown, very deep (greater than 60"), somewhat poorly drained, medium textured and has a fragipan at 10 to 25 inches. It occupies nearly level areas above approximately 1750 feet elevation in the uplands. Unlimed, it is strongly to slightly acid. Permeability is moderate above the fragipan and slow to moderately slow in the fragipan. Available water capacity is moderate. This soil is suited for cropland, hay and pasture. The main problems are the prolonged wetness and a shortened growing season due to elevation, which limit the choice of crops that can be grown.

It is generally unsuited to septic systems due to prolonged seasonal wetness and dense subsoils. If present, small areas of drier, included soils may provide limited use of specially designed or alternative septic systems.

Prolonged seasonal wetness severely limits its use for buildings with basements. A better drained, included or adjacent soils should be selected. This soil creates problems for road construction due to high potential frost action and wetness. Proper drainage and use of a coarse-grained sub-base will help reduce these problems. Hydrologic group is D. Soil Group 7 of NY State system. Capability subclass is IIIw.

Brief Map Unit Description

Delaware County, New York

Map unit: OeB - Onteora channery silt loam, 3 to 8 percent slopes

Description category: locally created

OeB Onteora channery silt loam, 3 to 8 percent slopes (P HYDRIC, PHEL) This soil is reddish brown, very deep (greater than 60"), somewhat poorly drained, medium textured and has a fragipan at 10 to 25 inches. It occupies gently sloping areas above approximately 1750 feet elevation in the uplands. Unlimed, it is strongly to slightly acid. Permeability is moderate above the fragipan and slow to moderately slow in the fragipan. Available water capacity is moderate. This soil is suited for cropland, hay and pasture. The main problems are the prolonged wetness and a shortened growing season due to elevation, which limit the choice of crops that can be grown.

It is generally unsuited to septic systems due to prolonged seasonal wetness and dense subsoils. If present, small areas of drier, included soils may provide limited use of specially designed or alternative septic systems.

Prolonged seasonal wetness limits its use for buildings with basements. Careful and costly drainage installations and extensive efforts to seal basement walls may overcome this limitation. Otherwise, a better drained, included or adjacent soil should be selected. This soil creates problems for road construction due to high potential frost action and wetness. Proper drainage and use of a coarse-grained sub-base will help reduce these problems. Hydrologic group is D. Soil Group 7 of NY State system. Capability subclass is IIIw.

Map unit: OeC - Onteora channery silt loam, 8 to 15 percent slopes

Description category: locally created

OeC Onteora chanery silt loam, 8 to 15 percent slopes (P HYDRIC, HEL) This soil is reddish brown, very deep (greater than 60"), somewhat poorly drained, medium textured, and has a fragipan at 10 to 25 inches. It occupies sloping areas above approximately 1750 feet elevation in the uplands. Unlimed, it is strongly to slightly acid. Permeability is moderate. This soil is suited for cropland, hay and pasture. The main problems are the prolonged wetness, the erosion hazard when tilled, and a shortened growing season due to elevation. The wetness and elevation limit the choice of crops that can be grown.

It is generally unsuited to septic systems due to prolonged seasonal wetness and dense subsoils. If present, small areas of drier, included soils may provide limited use of specially designed or alternative septic systems.

Prolonged seasonal wetness limits its use for buildings with basements. Careful and costly drainage installations and extensive efforts to seal basement walls may overcome this limitation. Otherwise, a better drained, included or adjacent soil should be selected. This soil creates problems for road construction due to high potential frost action and wetness. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is D. Soil Group 8 of NY State system. Capability subclass is IIIe.

Map unit: OfB - Onteora and Ontusia soils, 2 to 10 percent slopes, very stony

Description category: locally created

OfB Onteora and Ontusia soils, 2 to 10 percent slopes, very stony (P HYDRIC, PHEL) These soils are brown or reddish brown, very stony, very deep (greater than 60"), somewhat poorly drained, medium textured and have fragipans. They occupy gently sloping and sloping areas above 1750 feet elevation in the uplands. Unlimed, they are very strongly to slightly acid. Permeability is moderate above the fragipan and slow to very slow in the fragipan. Available water capacity is moderate. These soils are best suited to woodland and wildlife. Some areas are pastured. The main problems are excessive stoniness and wetness.

It is generally unsuited to septic systems due to wetness, dense subsoils and large surface stones. It is generally unsuited to buildings with basements due to wetness. Road construction on this soil should provide for wetness and high potential frost action; proper drainage and use of a coarse-grained sub-base will help overcome these problems. Hydrologic group is D. Soil Group 8 of NY State system. Capability subclass is VI.

Brief Map Unit Description

Delaware County, New York

Map unit: OnA - Ontusia channery silt loam, 0 to 3 percent slopes

Description category: locally created

OnA Ontusia channery silt loam, 0 to 3 percent slopes (P HYDRIC, NON-HEL) This soil is brown, very deep (greater than 60"), somewhat poorly drained, medium textured and has a fragipan at 10 to 25 inches. It occupies nearly level areas above approximately 1750 feet elevation in the uplands. Unlimed, it is strongly to slightly acid. Permeability is moderate above the fragipan and slow to moderately slow in the fragipan. Available water capacity is moderate. This soil is suited for cropland, hay and pasture. The main problems are the prolonged wetness and a shortened growing season due to elevation, which limit the choice of crops that can be grown.

It is generally unsuited to septic systems due to prolonged seasonal wetness and dense subsoils. If present, small areas of drier, included soils may provide limited use of specially designed or alternative septic systems.

Prolonged seasonal wetness severely limits its use for buildings with basements. A better drained, included or adjacent soil should be selected. This soil creates problems for road construction due to high potential frost action and wetness. Proper drainage and use of a coarse-grained sub-base will help reduce these problems. Hydrologic group is D. Soil Group 7 of NY State system. Capability subclass is IIIw.

Map unit: OnB - Ontusia channery silt loam, 3 to 8 percent slopes

Description category: locally created

OnB Ontusia channery silt loam, 3 to 8 percent slopes (P HYDRIC, PHEL) This soil is brown, very deep (greater than 60"), somewhat poorly drained, medium textured and has a fragipan at 10 to 25 inches. It occupies gently sloping areas above approximately 1750 feet elevation in the uplands. Unlimed, it is strongly to slightly acid. Permeability is moderate above the fragipan and slow to moderately slow in the fragipan. Available water capacity is moderate. This soil is suited for cropland, hay and pasture. The main problems are the prolonged wetness and a shortened growing season due to elevation, which limit the choice of crops that can be grown.

It is generally unsuited to septic systems due to prolonged seasonal wetness and dense subsoils. If present, small areas of drier, included soils may provide limited use of specially designed or alternative septic systems.

Prolonged seasonal wetness limits its use for buildings with basements. Careful and costly drainage installations and extensive efforts to seal basement wall may overcome this limitation. Otherwise, a better drained, included or adjacent soil should be selected. Hydrologic group is D. Soil Group 7 of NY State system. Capability subclass is IIIw.

Map unit: OnC - Ontusia channery silt loam, 8 to 15 percent slopes

Description category: locally created

OnC Ontusia channery silt loam, 8 to 15 percent slopes (P HYDRIC, HEL) This soil is brown, very deep (greater than 60"), somewhat poorly drained, medium textured, and has a fragipan at 10 to 25 inches. It occupies sloping areas above approximately 1750 feet elevation in the uplands. Unlimed, it is strongly to slightly acid. Permeability is moderate. This soil is suited for cropland, hay and pasture. The main problems are the prolonged wetness, the erosion hazard when tilled, and a shortened growing season due to elevation. The wetness and elevation limit the choice of crops that can be grown.

It is generally unsuited to septic systems due to prolonged seasonal wetness and dense subsoils. If present, small areas of drier, included soils may provide limited use of specially designed or alternative septic systems.

Prolonged seasonal wetness limits its use for buildings with basements. Careful and costly drainage installations and extensive efforts to seal basement walls may overcome this limitation. Otherwise, a better drained, included or adjacent soil should be selected. This soil creates problems for road construction due to high potential frost action and wetness. Proper drainage and use of a coarse-grained subbase will help reduce these problems. Eight to fifteen percent slopes require care during development to reduce erosion hazards. Hydrologic group is D. Soil Group 8 of NY State system. Capability subclass is IIIe.

Brief Map Unit Description

Delaware County, New York

Map unit: OpB - Oquaga channery silt loam, 2 to 8 percent slopes

Description category: locally created

OpB Oquaga channery silt loam, 2 to 8 percent slopes (PHEL) This is a reddish brown, moderately deep, well to excessively drained, medium textured soil. It occupies gently sloping areas on ridges and hilltops. Bedrock occurs at 20 to 40 inches below this soil. Unlimed, it is very strongly to medium acid. Permeability is moderate. Available water capacity is low to moderate. This soil is suited for crops, hay and pasture. The main problems are the flagstones that may interfere with cultivation, the shallowness to bedrock, the tendency to be droughty, and the slight erosion hazard when tilled. Many of these areas are used for hay, pasture or woodland.

Deeper areas of this soil are typically suitable for septic systems; shallower areas may need special leach field designs. Depth to bedrock limits the use of this soil for buildings with basements and road construction. Costly blasting and removal of bedrock may be necessary. Careful site investigation and planning may reduce or eliminate the need for blasting. Hydrologic group is C. Soil Group 4 of NY State system. Capability subclass is IIe.

Map unit: OpC - Oquaga channery silt loam, 8 to 15 percent slopes

Description category: locally created

OpC Oquaga channery silt loam, 8 to 15 percent slopes (HEL) This is a reddish brown, moderately deep, well to excessively drained, medium textured soil. It occupies sloping areas on ridges and hilltops. Bedrock occurs at 20 to 40 inches. Unlimed, it is very strongly to medium acid. Permeability is moderate. Available water capacity is low to moderate. This soil is suited to crops, hay and pasture. The main problems are the flagstones that may interfere with cultivation, the shallowness to bedrock, the tendency to be droughty, and the moderate erosion hazard when tilled. Many of these areas are used for hay and pasture or are wooded.

Deeper areas of this soil are typically suitable for septic systems; shallower areas may need special leach field designs. Depth to bedrock limits the use of this soil for buildings with basements and road construction. Costly blasting and removal of bedrock may be necessary. Careful site investigation and planning may reduce or eliminate the need for blasting. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is C. Soil Group 6 of NY State system. Capability subclass is IIIe.

Map unit: OpD - Oquaga channery silt loam, 15 to 25 percent slopes

Description category: locally created

OpD Oquaga channery silt loam, 15 to 25 percent slopes (HEL) This is a reddish brown, moderately deep, well to excessively drained, medium textured soil. It occupies moderately steep areas on ridges and hilltops. Bedrock occurs at 20 to 40 inches. Unlimed, it is very strongly to medium acid. Permeability is moderate. Available water capacity is low to moderate. This soil is suited to hay, pasture or woodland use rather than row crops. The main problems are the moderately steep slopes, presence of bedrock and associated erosion on unprotected areas.

Depth to bedrock and slope limit this soil for most development uses. Careful site investigation and selection of a flatter, deeper soil is recommended. Special septic system designs that accommodate steep slopes may be possible in deeper soil areas. Constructing roads on the contour will help minimize the need for blasting and reduce erosion hazards. A severe erosion hazard exists whenever this soil is disturbed. Hydrologic group is C. Soil Group 7 of NY State system. Capability subclass is IVe.

Map unit: OpE - Oquaga channery silt loam, 25 to 35 percent slopes

Description category: locally created

OpE Oquaga channery silt loam, 25 to 35 percent slopes (HEL) This is a reddish brown, moderately deep, well to excessively drained, medium textured soil. It occupies steep areas of hillsides. Bedrock occurs at 20 to 40 inches. Unlimed, it is very strongly acid. Permeability is moderate. This soil is suited to woodland and pasture rather than row crops. The main problems are the steep slopes, presence of bedrock and associated erosion on unprotected areas.

Depth to bedrock and slope limit this soil for most development uses. Selection of a flatter, deeper soil is recommended. All road construction across this soil should follow land contours as closely as possible. Blasting may be required. An extreme erosion hazard exists whenever this soil is disturbed. Hydrologic group is C. Soil Group 8 of NY State system. Capability subclass is VIe.

Brief Map Unit Description

Delaware County, New York

Map unit: OpF - Oquaga channery silt loam, 35 to 50 percent slopes

Description category: locally created

OpF Oquaga channery silt loam, 35 to 50 percent slopes

(HEL) This is a reddish brown, moderately deep, well to excessively drained, medium textured soil. It occupies very steep areas on side slopes. Bedrock occurs at 20 to 40 inches below this soil. Normally it is very strongly acid. Permeability is moderate. This soil is limited to woodland use. The main problems are the excessively steep slopes, presence of bedrock and associated erosion on unprotected areas.

Steep slopes and depth to bedrock severely limit this soil for most development uses. Selection of a flatter, deeper soil is recommended. All road construction across this soil should follow land contours as closely as possible. Blasting may be required. An extreme erosion hazard exists whenever this soil is disturbed. Hydrologic group is C. Soil Group 9 of NY State system. Capability subclass is VIIe.

Map unit: OrC - Oquaga, Lordstown, and Arnot soils, 2 to 15 percent slopes, very rocky

Description category: locally created

OrC Oquaga, Lordstown and Arnot soils, 2 to 15 percent slopes, very rocky

(PHEL) This map unit consists of the moderately deep (20-40"), well or somewhat excessively drained, medium textured Oquaga and Lordstown soils, the shallow (10-20"), somewhat excessively drained, medium textured Arnot soil, and frequent outcroppings of bedrock. It occupies gently sloping and sloping areas in the uplands on ridges and hilltops. Due to shallow depths to and exposures of bedrock, these areas are best suited to woodland and wildlife uses. It is a fragile soil.

Shallow depth to bedrock severely limits this soil for most development purposes. Pockets of the deeper Oquaga and Lordstown soils are sometimes extensive enough for low density building sites. Otherwise, costly blasting and removal of bedrock may be necessary. Septic systems should be carefully sited, designed and constructed since areas of this soil can be important groundwater recharge zones. Hydrologic group is C. Soil Group 8 of NY State system. Capability subclass is VIIs.

Map unit: OrE - Oquaga, Lordstown, and Arnot soils, 15 to 35 percent slopes, very rocky

Description category: locally created

OrE Oquaga, Lordstown and Arnot soils, 15 to 35 percent slopes, VERY ROCKY

(HEL) This map unit consists of the moderately deep (20-40"), well or somewhat excessively drained, medium textured Oquaga and Lordstown soils, the shallow (10-20"), somewhat excessively drained, medium textured Arnot soil, and frequent outcroppings of bedrock. It occupies moderately steep to steep sideslopes in uplands. Due to shallow depths to and exposures of bedrock, and steep slopes, these areas are best suited to woodland and wildlife uses.

Steep slopes and shallow depth to bedrock severely limit this soil for most development purposes. A severe erosion hazard exists whenever this soil is disturbed. Grading activities typically require large amounts of cut and fill with costly blasting and removal of bedrock. If present, small areas of flatter, included soils may provide limited development potential. Hydrologic group is C. Soil Group 8 of NY State system. Capability subclass is VIIIs.

Map unit: OrF - Oquaga, Lordstown, and Arnot soils, 35 to 70 percent slopes, very rocky

Description category: locally created

OrF Oquaga, Lordstown and Arnot soils, 35 to 70 percent slopes, very rocky

(HEL) This map unit consists of the moderately deep (20-40"), well or somewhat excessively drained, medium textured Oquaga and Lordstown soils, the shallow (10-20"), somewhat excessively drained, medium textured Arnot soil, and frequent outcroppings of bedrock. It occupies very steep sideslopes in uplands. Due to shallow depths to and exposures of bedrock, and very steep slopes, these areas are best suited to native woodland and wildlife uses.

Very steep slopes and shallow depth to bedrock severely limit this soil for most development purposes. An extreme erosion hazard exists whenever this soil is disturbed. Grading activities typically require large amounts of cut and fill with costly blasting and removal of bedrock. Areas of this soil are best left to wildlife and woodland uses. Hydrologic group is C. Soil Group 9 of NY State system. Capability subclass is VIIIs.

Brief Map Unit Description

Delaware County, New York

Map unit: Pc - Philo silt loam

Description category: locally created

Pc Philo silt loam

(P HYDRIC, NON-HEL) This is a very deep (greater than 60"), moderately well drained, medium textured soil. It occupies floodplains and low terraces along streams where occasional flooding occurs. Unlimed, this soil is very strongly acid to moderately acid in both the surface and subsoil layers. Permeability is moderately slow to moderate in the surface and subsoil, and moderately rapid to rapid in the substratum. Available water capacity is high. This soil is well suited to most cultivated crops grown in the area, and for hay or pasture. The main problems with the Philo soil are its slight seasonal wetness, occasional flooding and streambank erosion. It is prime farmland.

It is generally unsuited to buildings with basements and to septic systems due to the flooding hazard and the seasonal high water table. Excessive permeability in the substratum and close proximity to streams further limits its suitability for septic systems. Flooding, streambank erosion and potential frost damage limit road construction on this soil. Constructing roads on raised fill and using a coarse-grained subbase will help overcome flooding and frost limitations. Streambank stabilization practices such as rock rip-rap will help reduce streambank erosion. Hydrologic group is B/D. Soil Group 2 of NY State system. Capability subclass is IIw.

Map unit: Pg - Pits, gravel

Description category: locally created

Pg Pits, gravel

These are areas of excavations in gravelly and sandy deposits that are used for construction purposes. Gravel pits are highly variable areas. The pit sides are usually steep and the floor is relatively level. Piles of stones and small pools of water are commonly scattered in areas of the pit floor. Abandoned pits are generally unsuited to farming because of droughtiness, high content of gravel and stones, and irregular topography. On-site investigation is necessary to determine suitability for development uses. Soil Group 9 of NY State system. (No capability subclass is assigned)

Map unit: Ph - Pits, quarry

Description category: locally created

Ph Pits, quarry

These are areas of excavations into bedrock, usually for sandstone or "bluestone" used for construction purposes. They have irregular topography, and piles of rock debris are commonly scattered around the quarry area. Abandoned quarries are generally unsuited to farm or development uses, and reclamation is usually difficult. Soil Group 9 of NY State system. (No capability subclass is assigned)

Map unit: Rb - Raypol silt loam

Description category: locally created

Rb Raypol silt loam

(HYDRIC, NON-HEL) This very deep (greater than 60"), poorly drained, medium textured soil is formed in silty deposits over sand and gravel. It occupies nearly level and depressional areas along the back edges of floodplains or low terraces, in old meander scars and channels. It is subject to rare flooding, and in spots may be subject to ponding from upslope runoff. Unlimed it is strongly to slightly acid in the surface and subsoil. Permeability is moderate to moderately rapid. Available water capacity is moderate to high. Undrained, this soil supports water-tolerant grasses, shrubs and trees. This soil is not suited to farming if left undrained and has severe limitations for most other uses due primarily to its prolonged seasonal high water table.

Due to prolonged wetness, this soil is not suited to either septic systems or buildings with basements. A drier, more suitable soil should be selected. Wetness and high potential frost action can create problems for road construction. Proper drainage and use of a coarse-grained sub-base will help overcome these problems. It is a hydric soil -- areas of this soil are likely to be jurisdictional wetlands. Hydrologic group is B/D. Soil Group 6 of NY State system. Capability subclass is IVw.

Brief Map Unit Description

Delaware County, New York

Map unit: Re - Red Hook gravelly silt loam

Description category: locally created

Re Red Hook cobbly silt loam

(P HYDRIC, NON-HEL) This is a very deep (greater than 60") and somewhat poorly drained soil. It is medium textured in the surface and upper subsoil and moderately coarse textured in the lower subsoil and substratum. It occupies nearly level areas that are low or depressional in old terraces. Unlimed, it is medium acid to slightly acid in the upper solum and medium acid to neutral in the lower solum and the substratum. Permeability is moderate. Available water capacity is moderate in the surface and variable in the subsoil and substratum. Drained areas are suitable for crops, hay or pasture. Undrained areas are better suited to water tolerant hay or grain. The main problem is a prolonged high water table. Drainage is often impossible because of lack of outlets. Most undrained areas are used for hay, pasture or are idle. When drained, it is prime farmland.

It is generally unsuited to septic systems and buildings with basements due to prolonged seasonal wetness. A better drained, included or adjacent soil should be selected. This soil creates problems for road construction due to high potential frost action and wetness. Proper drainage and use of a coarse-grained subbase will help reduce these problems. Hydrologic group is B/D. Soil Group 5 of NY State system. Capability subclass is IIIw.

Map unit: RhA - Riverhead loam, 0 to 3 percent slopes

Description category: locally created

RhA Riverhead loam, 0 to 3 percent slopes

(NON-HEL) This mapping unit consists of very deep (greater than 60"), well drained, acid soils with moderately coarse and coarse textured subsoils that occur on nearly level, water-sorted, sand and gravel deposits. Soil depth over gravel is 2 to 3 feet. Runoff is slow and permeability is moderately rapid above the gravel. This soil has few limitations for use, but may be droughty. Available water capacity is low, and erosion hazard is slight. It is prime farmland.

This soil is suited to septic systems, although excessive permeability in the substratum can lead to groundwater contamination. Accepted construction practices that slow the percolation rate in the leaching area are typically needed. It is well suited to buildings with basements. Road construction should anticipate moderate potential frost action. Hydrologic group is A. Soil Group 3 of NY State system. Capability subclass is II.

Map unit: RhB - Riverhead loam, 3 to 8 percent slopes

Description category: locally created

RhB Riverhead loam, 3 to 8 percent slopes

(PHEL) This soil is very deep (greater than 60"), acid, well drained, and has moderately coarse to coarse textured subsoils. It occurs on gentle slopes over water-sorted sand and gravel. Soil depth over gravel is 2 to 3 feet. Runoff is slow and permeability is rapid above the gravel. This soil has few limitations for use, but may be droughty. Available water capacity is low. Erosion hazard is slight. It is prime farmland.

This soil is suited to septic systems, although excessive permeability in the substratum can lead to groundwater contamination. Shallow leachfield installations or accepted practices to reduce excessive subsoil permeability can help overcome this limitation. This soil is well suited to buildings with basements. Road construction should anticipate moderate potential frost action. Hydrologic group is A. Soil Group 4 of NY State system. Capability subclass is II.

Map unit: RhC - Riverhead loam, 8 to 15 percent slopes

Description category: locally created

RhC Riverhead loam, 8 to 15 percent slopes

(HEL) This soil is very deep (greater than 60"), acid, well drained and has moderately coarse and coarse textured subsoils. It occurs on moderate slopes over water-sorted sand and gravel. Soil depth is 2 to 3 feet over the gravel. Runoff is medium and permeability is moderately rapid above the gravel. Use of this soil is limited due to slope and droughtiness. Erosion hazard is severe if vegetation is removed.

This soil is suited to septic systems, although excessive permeability in the substratum can lead to groundwater contamination. Shallow leachfield installations or accepted practices to reduce excessive subsoil permeability can help overcome this limitation. This soil is well suited to buildings with basements, however 8 to 15% slopes require care to reduce erosion and sediment hazards during development. Road construction should anticipate moderate potential frost action. Hydrologic group is A. Soil Group 6 of NY State system. Capability subclass is IIIe.

Brief Map Unit Description

Delaware County, New York

Map unit: RhD - Riverhead loam, 15 to 25 percent slopes

Description category: locally created

RhD Riverhead loam, 15 to 25 percent slopes

(HEL) This is a very deep (greater than 60"), moderately steep, well drained, acid soil that has moderately coarse or coarse textured subsoil. Permeability is moderately rapid in the subsoil and very rapid in the substratum. Runoff is medium and the hazard of erosion is severe if the soil is left without protective cover. Because of slope, the use of farm machinery has moderate limitations. These soils are suited to hay, pasture, and trees.

This soil is suited to septic systems, however, steep slopes typically require special leachfield designs, and excessive permeability in the substratum can lead to groundwater contamination. Accepted construction practices that slow the percolation rate in the leaching area are typically needed. This soil is suited to buildings with basements, however 15 to 25% slopes require extreme care to reduce erosion and sediment hazards during development. Road construction should anticipate moderate potential frost action. Hydrologic group is A. Soil Group 7 of NY State system. Capability class is IVe.

Map unit: RrE - Rockrft channery loam, 15 to 35 percent slopes, very bouldery

Description category: locally created

RrE Rockrft channery loam, 15 to 35 percent slopes, very bouldery

(HEL) This unit consists of a brownish, very deep (greater than 60"), well drained, medium textured soil. It occupies moderately steep to steep areas along the sides of ridges and hills above approximately 1,750 feet elevation in the uplands. Rockrft soils are very strongly acid to moderately acid in the surface and subsoil. Permeability is moderate throughout. Available water capacity is moderate. Steep slopes and excessive surface boulders and stones limit the use of this soil to woodland and pasture.

Steep slopes limit the use of this soil for buildings with basements and onsite septic systems. Flatter areas should be chosen as preferred building sites. Large boulders can interfere with construction operations. A severe erosion hazard exists whenever this soil is disturbed. Road construction should follow natural contours as closely as possible. Hydrologic soil group is B. Soil Group 8 of NY State system. Capability subclass is VIe.

Map unit: RrF - Rockrft channery loam, 35 to 70 percent slopes, very bouldery

Description category: locally created

RrF Rockrft channery loam, 35 to 70 percent slopes, very bouldery

(HEL) This soil is brown, very deep (greater than 60"), well drained, and medium textured. It occupies steep to very steep areas along the sides of ridges and hills above approximately 1,750 feet elevation in the uplands. It is very strongly acid to moderately acid in the surface and subsoil. Permeability is moderate throughout. Available water capacity is moderate. The steep slopes and excessive surface boulders and stones limit the use of this soil to woodlands.

Steep slopes exclude the use of this soil for development purposes. Flatter, more suitable areas should be chosen as preferred building sites. Large boulders will interfere with construction operations. An extreme erosion hazard exists whenever this soil is disturbed. Road construction should follow natural contours closely. Hydrologic soil group is B. Soil Group 9 of NY State system. Capability subclass is VIIe.

Map unit: Sa - Saprists and Aquent, ponded

Description category: locally created

Sa Saprists and aquents, ponded

(HYDRIC, NON-HEL) This unit consists of level, very deep (greater than 60"), very poorly drained soils that mainly occur in low depressions. Most of these areas are covered with water for 6 months or more each year, often due to beaver dams. Saprists are organic soils and are typically near the center of the unit. Aquent are highly variable mineral soils. These soils are best suited for wildlife uses.

Due to a high seasonal water table near the soil surface and due to low soil strength of organic soils, these areas are unsuitable for development uses. They are likely to be jurisdictional wetlands. Hydrologic group is A/D. Soil Group 10 of NY State system. Capability subclass is VIIIw.

Brief Map Unit Description

Delaware County, New York

Map unit: TeB - Torull-Gretor complex, 0 to 6 percent slopes

Description category: locally created

TeB Torull-Gretor complex, 0 to 8 percent slopes (P HYDRIC, PHEL) This map unit consists of a complex of two somewhat poor to poorly drained medium textured soils. The Torull soil is shallow (10-20" deep) and the Gretor soil is moderately deep (20-40"). The soils occupy nearly level to gently sloping areas on benches and flat parts of hilltops in the uplands above approximately 1750 feet elevation. In most instances, the bedrock needs to be blasted for removal. The close proximity of bedrock to the surface and prolonged wet conditions during much of the year severely limit agricultural uses of this soil.

It is unsuited to septic systems and buildings with basements due to shallow depth to bedrock and prolonged seasonal wetness. A deeper and better drained, adjacent soil should be selected. This soil creates problems for road construction due to depth to bedrock, wetness and high potential frost action. Costly blasting and removal of bedrock may be necessary. Proper drainage and use of a coarse-grained sub-base will help reduce wetness and high potential frost action problems. Hydrologic group is D. Soil Group 7 of NY State system. Capability subclass is IVw.

Map unit: TkA - Tunkhannock gravelly loam, 0 to 3 percent slopes

Description category: locally created

TkA Tunkhannock gravelly loam, 0 to 3 percent slopes (NON-HEL) This is a reddish brown, very deep (greater than 60"), well to excessively drained, medium textured soil. It occupies nearly level areas of terraces on the sides of valleys. Unlimed, it is extremely to moderately acid. Permeability is moderately rapid in the surface and subsoil and is rapid in the substratum. Available water capacity is low to moderate in the surface and subsoil and very low to low in the substratum. This soil is well suited to most crops grown in the area. The main problem is droughtiness. It is prime farmland.

This soil is suited to septic systems, although excessive permeability in the substratum can cause groundwater pollution. Shallow leachfield installations or accepted practices to reduce excessive subsoil permeability can help overcome this limitation. This soil is well suited to buildings with basements and for road construction. Hydrologic group is A. Soil Group 3 of NY State system. Capability subclass is II.

Map unit: TkB - Tunkhannock gravelly loam, 3 to 8 percent slopes

Description category: locally created

TkB Tunkhannock gravelly loam, 3 to 8 percent slopes (PHEL) This is a reddish brown, very deep (greater than 60"), well to excessively drained, medium textured soil. It occupies undulating areas of terraces on the sides of valleys. Unlimed, it is extremely to medium acid. Permeability is moderately rapid in the surface and subsoil and is rapid in the substratum. Available water capacity is low to moderate in the surface and subsoil and very low in the substratum. This soil is well suited to most crops grown in the area. The main problems are a tendency to be droughty and a slight erosion hazard. It is prime farmland.

This soil is suited to septic systems, although excessive permeability in the substratum can cause groundwater pollution. Shallow leachfield installations or accepted practices to reduce excessive subsoil permeability can help overcome this limitation. This soil is well suited to buildings with basements and for road construction. Hydrologic group is A. Soil Group 3 of NY State system. Capability subclass is II.

Map unit: TkC - Tunkhannock gravelly loam, 8 to 15 percent slopes

Description category: locally created

TkC Tunkhannock gravelly loam, 8 to 15 percent slopes (HEL) This is a reddish brown, very deep (greater than 60"), well to excessively drained, medium textured soil. It occupies rolling areas of terraces on the sides of valleys. Unlimed, it is extremely to medium acid in the surface and subsoil. Permeability is moderately rapid in the surface and subsoil and is rapid in the substratum. Available water capacity is low to moderate in the surface and subsoil and very low in the substratum. This soil is suited to crops, hay and pasture. The main problems to cultivation are a moderate erosion hazard and droughtiness. Many of these areas are used for hay and pasture.

This soil is suited to septic systems, although excessive permeability in the substratum can cause groundwater pollution. Shallow leachfield installations or accepted practices to reduce excessive subsoil permeability can help overcome this limitation. This soil is well suited to buildings with basements and for road construction. Slopes of 8 to 15% require care during development to reduce erosion hazards. Hydrologic group is A. Soil Group 5 of NY State system. Capability subclass is IIIe.

Brief Map Unit Description

Delaware County, New York

Map unit: TkD - Tunkhannock gravelly loam, 15 to 25 percent slopes

Description category: locally created

TkD Tunkhannock gravelly loam, 15 to 25 percent slopes (HEL) This is a reddish brown, very deep (greater than 60"), well to excessively drained medium textured soil. It occupies moderately steep areas of terraces and kames on the sides of valleys. Unlimed, it is extremely to medium acid in the surface and subsoil. Permeability is moderately rapid in the surface and subsoil and is rapid in the substratum. Available water capacity is low to moderate in the surface and subsoil and very low in the substratum. This soil is best suited to woodland or grassland. The main problems are a severe erosion hazard when cultivated, steep slopes and droughtiness. Most areas are in woods or idle, but a few areas are pastured. This soil is marginally suited to septic systems, due to steep slopes and to excessive permeability in the substratum, which can cause groundwater pollution. Accepted construction practices that slow the percolation rate in the leaching area are typically needed. Special leachfield designs can accommodate steep slopes. This soil is suited to buildings with basements and for road construction; however, 15 to 25% slopes require extreme care during development to reduce erosion hazards. Hydrologic group is A. Soil Group 6 of NY State System. Capability subclass is IVe.

Map unit: TkE - Tunkhannock gravelly loam, 25 to 50 percent slopes

Description category: locally created

TkE Tunkhannock gravelly loam, 25 to 50 percent slopes (HEL) This soil is reddish brown, very deep (greater than 60"), well to excessively drained and medium textured. It occupies steep and very steep areas of dissected stream terraces. Unlimed, it is extremely to medium acid in the surface and subsoil. Permeability is moderately rapid in the surface and subsoil and is rapid in the substratum. Available water capacity is low to moderate. This soil is best suited to woodland or wildlife due to its very steep slopes, severe erosion hazard and droughtiness. This soil is not suited to most development uses, largely due to steep slopes. Road construction should follow contours as closely as possible. Hydrologic group is A. Soil Group 9 of NY State System. Capability subclass is VIe.

Map unit: TtA - Tunkhannock and Chenango soils, fan, 0 to 3 percent slopes

Description category: locally created

TtA Tunkhannock and Chenango soils, fan, 0 to 3 percent slopes (NON-HEL) These soils are very deep (greater than 60"), well drained, nearly level, and are formed in outwash deposited where tributary streams enter a main valley. These areas are usually adjacent to the first bottom flood plain. Flooding can be from the main stream or the enclosed tributary stream. Permeability is moderately rapid to rapid. Available water capacity is moderate. The soils are suited to most crops grown in the area, and are prime farmland. These soils are suited to septic systems, although excessive permeability in the substratum can cause groundwater pollution. Shallow leachfield installations or accepted practices to reduce excessive subsoil permeability can help overcome this limitation. High seasonal water table and rare flooding potential can limit these soils' suitability for buildings with basements. Sealing the foundation and building on raised fill can help minimize these limitations. Areas of these soils are well suited to road construction. Hydrologic group is A. Soil Group 3 of NY State System. Capability subclass is IIe.

Map unit: TtB - Tunkhannock and Chenango soils, fan, 3 to 8 percent slopes

Description category: locally created

TtB Tunkhannock and Chenango soils, fan, 3 to 8 percent slopes (PHEL) These soils are very deep (greater than 60"), well drained, gently sloping, and are formed in outwash deposited where tributary streams enter a main valley. These areas can be flooded by the enclosed tributary stream. Flood duration is short and may be the result of trash or ice jams in the stream bed. Slopes are smooth, and tilt toward the main valley. Permeability is moderately rapid in most soil layers. Available water capacity is moderate. The soils are suited to most crops that are grown in the area, and are prime farmland. These soils are suited to septic systems, although excessive permeability in the substratum can cause groundwater pollution. Shallow leachfield installations or accepted practices to reduce excessive subsoil permeability can help overcome this limitation. High seasonal water table and rare flooding potential can limit these soils' suitability for buildings with basements. Sealing the foundation and building on raised fill can help minimize these limitations. Areas of these soils are well suited to road construction. Hydrologic group is A. Soil Group 3 of NY State system. Capability subclass is IIe.

Brief Map Unit Description

Delaware County, New York

Map unit: Ud - Udorthents, graded

Description category: locally created

Ud Udorthents, graded

These soils consist of very shallow to deep, excessively drained to moderately well drained soils that have been altered for construction operations. The soil material may be medium to coarse textured. Slopes typically range from 3 to 8 percent. The variability of these soils makes necessary an onsite investigation to determine their potential for any use. Hydrologic group is B. Soil Group 9 of NY State System. (No capability subclass is assigned.)

Map unit: Uf - Udorthents, refuse substratum

Description category: locally created

Uf Udorthents, refuse substratum

This map unit consists of nearly level to steep, loamy soils in sanitary landfills that have been reworked by earth-moving and grading equipment to cover trash and other refuse. Often the refuse is partly covered or mixed with the loamy fill material. The depths of soil cover and refuse material are variable. Some areas of this map unit are in former sand and gravel pits. Hydrologic group is A. Soil Group 9 of NY State System. (No capability subclass is assigned.)

Map unit: Un - Unadilla silt loam

Description category: locally created

Un Unadilla silt loam

(NON-HEL) This mapping unit consists of a very deep (greater than 60"), well drained, medium textured, acid soil that occurs on nearly level, terrace positions in valleys. Unlimed, the surface and subsoil are very strongly to medium acid. Internal drainage is medium, and surface runoff is slow to medium. Permeability is moderate above, and slow to rapid below a depth of 40 inches. Erosion hazard is low, and the soil is easily tilled. It holds water well and is responsive to fertilizer inputs. It is prime farmland.

It is well suited for septic systems, although in some cases excessive substratum permeability can cause groundwater pollution. It is suited to buildings with basements and to road construction, although potential frost action can be severe. Building roads on raised fill and using a coarse-grained subbase will help overcome frost limitations. Hydrologic group is B. Soil Group 1 of NY State System. Capability subclass is 1.

Map unit: Ur - Urban land

Description category: locally created

Ur Urban Land

This map unit consists of areas where 80 percent or more of the surface is covered with asphalt, concrete, other impervious materials, or buildings. These areas are mostly parking lots, industrial parks, or business centers in villages and cities, which were graded or filled before being covered with non-soil materials. Most are nearly level or gently sloping, yet runoff may be very rapid due to the largely impervious surface.

Soil materials beneath the surface are so variable that onsite investigations are needed to determine subsoil properties. However, many urban land areas have been created where soils are relatively suitable to development uses. Soil Group 9 of NY State System. (No capability subclass is assigned.)

Brief Map Unit Description

Delaware County, New York

Map unit: VaB - Valois very fine sandy loam, 3 to 8 percent slopes

Description category: locally created

VaB Valois very fine sandy loam, 3 to 8 percent slopes (PHEL) This soil is very deep (greater than 60"), gently sloping, well drained, medium textured and is underlain by gravel and gravelly sands. Unlimed, it is very strongly to moderately acid in the surface and subsoil. Available water capacity is high in the surface and low in the substratum. Permeability is moderate in the surface and upper subsoil, and moderate to moderately rapid in the substratum. This soil is suited to cultivated crops, pasture and trees. It is prime farmland.

It is well suited to septic systems and buildings with basements. Road construction on this soil should allow for moderate potential frost action; use of coarse-grained subbase material can minimize frost damage. Hydrologic group is B. Soil Group 2 of NY State System. Capability class is IIe.

Map unit: VaC - Valois very fine sandy loam, 8 to 15 percent slopes

Description category: locally created

VaC Valois very fine sandy loam, 8 to 15 percent slopes This soil is very deep (greater than 60"), sloping, well drained, medium textured and is underlain by gravel and gravelly sands. Unlimed, it is very strongly to moderately acid in the surface and subsoil. Available water capacity is high in the surface and low in the substratum. Permeability is moderate in the surface and upper subsoil, and moderate to moderately rapid in the substratum. This soil is suited to cultivated crops, pasture and trees. Measures should be taken to control runoff and erosion on cultivated areas.

It is well suited to septic systems and buildings with basements. Road construction on this soil should allow for moderate potential frost action; use of coarse-grained subbase material can minimize frost damage. 8 to 15% slopes require care for development to reduce erosion hazards. Hydrologic group is B. Soil Group 5 of NY State System. Capability class is IIIe.

Map unit: VaD - Valois very fine sandy loam, 15 to 25 percent slopes

Description category: locally created

VaD Valois very fine sandy loam, 15 to 25 percent slopes (HEL) This soil is very deep (greater than 60"), moderately steep, well drained, medium textured and is underlain by gravel and gravelly sands. Permeability is moderate in the surface and upper subsoil, and moderate to moderately rapid in the substratum. Moderately steep slopes limit the use of this soil for crops. It is hazardous to work with machinery, and the hazard of erosion is severe in cultivated areas that are not protected. Pasture and trees are well suited to this soil.

It is suited to building with basements and to septic systems, as long as land regrading or special designs are used to accommodate the moderately steep slopes. Excessive permeability in the substratum can cause groundwater pollution. Lining leaching trenches with geotextile fabric, or blending a finer textured soil with the gravelly substratum in the trench area can help slow percolation rate. Roads should be constructed on the contour where possible. Use of coarse-grained subbase materials will help reduce the moderate potential of frost damage. 15 to 25% slopes require extreme care to minimize erosion hazards during development. Hydrologic group is B. Soil Group 6 of NY State system. Capability subclass is IVe.

Map unit: VaE - Valois very fine sandy loam, 25 to 60 percent slopes

Description category: locally created

VaE Valois very fine sandy loam, 25 to 60 percent slopes (HEL) This soil is very deep (greater than 60"), steeply sloping, well drained, medium textured and is underlain by gravel and gravelly sands. Permeability is moderate in the surface and upper subsoil, and moderate to moderately rapid in the substratum. Steep slopes limit the use of this soil for crops. This soil is hazardous to work and the hazard of erosion is severe in cultivated areas that are not protected. Pasture and trees are well suited to this soil.

Due to steep slopes this soil is usually unsuitable for development purposes. Selecting a flatter area of this soil, design to conform to the natural slope and extensive landshaping may help overcome the slope limitation. Road construction should follow natural contours as much as possible. An extreme erosion hazard exists whenever this soil is disturbed. Hydrologic group is B. Soil Group 8 of NY State system. Capability class is IVe.

Brief Map Unit Description

Delaware County, New York

Map unit: VIB - Vly channery silt loam, 2 to 8 percent slopes

Description category: locally created

VIB Vly channery silt loam, 2 to 8 percent slopes

(PHEL) This soil is reddish brown, moderately deep (20-40"), well to excessively drained, and medium textured. It occupies gently sloping areas on ridges and hilltops above approximately 1,750 feet elevation in the uplands. Unlimed, it is strongly to very strongly acid. Permeability is moderate. Available water capacity is moderate. This soil is suitable for cropland, hay, or pasture. The main problems are the shallow depth to bedrock, a slight erosion hazard when tilled, and a shortened growing season due to elevation.

Deeper areas of this soil are typically suitable for septic systems; shallower areas may need special leach field designs. Depth to bedrock limits the use of this soil for buildings with basements and road construction. Costly blasting and removal of bedrock may be necessary. Careful site investigation and planning may reduce or eliminate the need for blasting. Hydrologic group is C. Soil Group 5 of NY State system. Capability subclass is IIe.

Map unit: VIC - Vly channery silt loam, 8 to 15 percent slopes

Description category: locally created

VIC Vly channery silt loam, 8 to 15 percent slopes

(HEL) This soil is reddish brown, moderately deep (20-40"), well to excessively drained, and medium textured. It occupies sloping areas on ridges and hilltops above approximately 1,750 feet elevation in the uplands. Unlimed, it is strongly to very strongly acid. Permeability is moderate. Available water capacity is moderate. This soil is suitable for cropland, hay, or pasture. The main problems are the shallow depth to bedrock, a moderate erosion hazard when tilled, and a shortened growing season due to elevation.

Deeper areas of this soil are typically suitable for septic systems; shallower areas may need special leach field designs. Depth to bedrock limits the use of this soil for buildings with basements and road construction. Costly blasting and removal of bedrock may be necessary. Careful site investigation and planning may reduce or eliminate the need for blasting. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is C. Soil Group 6 of NY State system. Capability subclass is IIIe.

Map unit: VID - Vly channery silt loam, 15 to 25 percent slopes

Description category: locally created

VID Vly channery silt loam, 15 to 25 percent slopes

(HEL) This soil is reddish brown, moderately deep (20-40"), well to excessively drained, and medium textured. It occupies moderately steep areas on hillsides above approximately 1,750 feet elevation in the uplands. Unlimed, it is strongly to very strongly acid. Permeability is moderate. Available water capacity is moderate. This soil is suitable for hay, pasture or woodland uses. The main problems are the shallow depth to bedrock, moderately steep slopes, a severe erosion hazard when tilled, and a shortened growing season due to elevation.

Depth to bedrock and slope limit this soil for most development uses. Careful site investigation and selection of a flatter, deeper soil is recommended. Special septic system designs that accommodate steep slopes may be possible in deeper soil areas. Constructing roads on the contour will help minimize the need for blasting and reduce erosion hazards. A severe erosion hazard exists whenever this soil is disturbed. Hydrologic group is C. Soil Group 8 of NY State system. Capability subclass is IVe.

Map unit: VIE - Vly channery silt loam, 25 to 40 percent slopes

Description category: locally created

VIE Vly channery silt loam, 25 to 40 percent slopes

(HEL) This is a reddish brown, moderately deep (20-40"), well to excessively drained, medium textured soil. It occupies steep sideslopes above approximately 1,750 feet elevation in the uplands. Unlimed, it is strongly to very strongly acid. Permeability is moderate. Available water capacity is moderate. This soil is best suited to pasture or woodland and wildlife uses. The main problems are the steep slopes, the shallow depth to bedrock, severe erosion of unprotected areas, and a shortened growing season due to elevation.

Depth to bedrock and slope limit this soil for most development uses. Selection of a flatter, deeper soil is recommended. All road construction across this soil should follow land contours as closely as possible. Blasting may be required. An extreme erosion hazard exists whenever this soil is disturbed. Hydrologic group is C. Soil Group 8 of NY State system. Capability subclass is VIe.

Brief Map Unit Description

Delaware County, New York

Map unit: VoA - Volusia channery silt loam, 0 to 3 percent slopes

Description category: locally created

VoA Volusia channery silt loam, 0 to 3 percent slopes (P HYDRIC, NON-HEL) This soil is very deep (greater than 60"), somewhat poorly drained, medium textured and has a fragipan at 10 to 22 inches. It occupies nearly level areas in the uplands. Unlimed, it is very strongly to medium acid. Permeability is moderate above the fragipan and very slow in the fragipan. Available water capacity is moderate. This soil is suited for crops, hay and pasture. The main problem is the prolonged wetness that limits the choice of crops that can be grown.

It is generally unsuited to septic systems due to prolonged seasonal wetness and dense subsoils. If present, small areas of drier, included soils may provide limited use of specially designed or alternative septic systems.

Prolonged seasonal wetness severely limits its use for buildings with basements. A better drained, included or adjacent soil should be selected. This soil creates problems for road construction due to high potential frost action and wetness. Proper drainage and use of a coarse-grained sub-base will help reduce these problems. Hydrologic group is D. Soil Group 6 of NY State system. Capability subclass is IIIw.

Map unit: VoB - Volusia channery silt loam, 3 to 8 percent slopes

Description category: locally created

VoB Volusia channery silt loam, 3 to 8 percent slopes (P HYDRIC, PHEL) This soil is very deep (greater than 60"), somewhat poorly drained, medium textured and has a fragipan at 10 to 22 inches. It occupies gently sloping areas in the uplands. Unlimed, it is very strongly to medium acid. Permeability is moderate above the fragipan and very slow in the fragipan. Available water capacity is moderate. This soil is suited for crops, hay and pasture. The main problem is the prolonged wetness that limits the choice of crops that can be grown.

It is generally unsuited to septic systems due to prolonged seasonal wetness and dense subsoils. If present, small areas of drier, included soils may provide limited use of specially designed or alternative septic systems.

Prolonged seasonal wetness limits its use for buildings with basements. Careful and costly drainage installations and extensive efforts to seal basement walls may overcome this limitation. Otherwise, a better drained, included or adjacent soil should be selected. This soil creates problems for road construction due to high potential frost action and wetness. Proper drainage and use of a coarse-grained subbase will help reduce these problems. Hydrologic group is D. Soil Group 6 of NY State system. Capability subclass is IIIw.

Map unit: VoC - Volusia channery silt loam, 8 to 15 percent slopes

Description category: locally created

VoC Volusia channery silt loam, 8 to 15 percent slopes (P HYDRIC, HEL) This soil is very deep (greater than 60"), somewhat poorly drained, medium textured and has a fragipan at 10 to 22 inches. It occupies sloping areas in the uplands. Unlimed, it is very strongly to medium acid. Permeability is moderate above the fragipan and very slow in the fragipan. Available water capacity is moderate. This soil is suited for crops, hay and pasture. The main problems are an erosion hazard due to steepness of slope and prolonged wetness.

It is generally unsuited to septic systems due to prolonged seasonal wetness and dense subsoils. If present, small areas of drier, included soils may provide limited use of specially designed or alternative septic systems.

Prolonged seasonal wetness limits its use for buildings with basements. Careful and costly drainage installations and extensive efforts to seal basement walls may overcome this limitation. Otherwise, a better drained, included or adjacent soil should be selected. This soil creates problems for road construction due to high potential frost action and wetness. Proper drainage and use of a coarse-grained subbase will help reduce these problems. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is D. Soil Group 7 of NY State system. Capability subclass is IIIe.

Map unit: W - Water

Description category: locally created

W - Water

This map unit does not refer to soil, but rather to open areas of water. Examples would include lakes, reservoirs, ponds and streams that are large enough to be shown on the soil map. Depth to and type of bottom sediments can be variable.

Brief Map Unit Description

Delaware County, New York

Map unit: WeB - Wellsboro channery silt loam, 3 to 8 percent slopes

Description category: locally created

WeB Wellsboro channery silt loam, 2 to 8 percent slopes

(PHEL) This soil is reddish brown, very deep (greater than 60"), moderately well drained, medium textured and has a fragipan at 15 to 26 inches. It occupies gently sloping areas in the uplands. Unlimed, it is very strongly to medium acid. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is suited for cropland, hay and pasture. The main problems are a slight seasonal wetness and the flagstones that may interfere with tillage.

It is suitable for septic systems, although they usually require special leachfield designs to accommodate conditions of high seasonal water table and dense subsoils. Seasonal wetness can create problems for buildings with basements. Installing footing drains, sealing the foundation and land grading can help overcome this problem. Road construction on this soil should allow for high potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. Hydrologic group is C/D. Soil Group 4 of NY State system. Capability subclass is IIw.

Map unit: WeC - Wellsboro channery silt loam, 8 to 15 percent slopes

Description category: locally created

WeC Wellsboro channery silt loam, 8 to 15 percent slopes

(HEL) This soil is reddish brown, very deep (greater than 60"), moderately well drained, medium textured and has a fragipan at 15 to 26 inches. It occupies sloping areas in the uplands. Unlimed, it is very strongly to medium acid. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is best suited for limited cultivation and hay or pasture. The main problems are the slight seasonal wetness, the flagstones that may interfere with tillage, and the moderate erosion hazard when tilled.

It is suitable for septic systems, although they usually require special leachfield designs to accommodate conditions of high seasonal water table and dense subsoils. Seasonal wetness can create problems for buildings with basements. Installing footing drains, sealing the foundation and land grading can help overcome this problem. Road construction on this soil should allow for high potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. 8 to 15% slopes require care during development to reduce erosion hazard. Hydrologic group is C/D. Soil Group 6 of NY State system. Capability subclass is IIIe.

Map unit: WeD - Wellsboro channery silt loam, 15 to 25 percent slopes

Description category: locally created

WeD Wellsboro channery silt loam, 15 to 25 percent slopes

(HEL) This soil is reddish brown, very deep (greater than 60"), moderately well drained, medium textured and has a fragipan at 15 to 26 inches. It occupies strongly sloping areas in the uplands. Permeability is moderate in the upper subsoil and slow or very slow in the subsoil or substratum. Strong slope makes this soil hazardous to work with modern machinery. The hazard of erosion is severe in cultivated areas that are not protected. Pasture and trees are well suited to this soil.

Due to slope, dense subsoils and wetness problems, this soil is marginally suited for septic systems. Special leachfield designs and considerable fill material are usually required. Locating the leachfield on a flatter included area is recommended. Seasonal wetness and slope can be problems in buildings with basements; installing footing drains, sealing the foundation, and land shaping to divert surface runoff will help reduce these problems. Road construction should allow for high potential frost action; proper drainage and use of a coarse-grained subbase will help reduce frost damage. Roads should follow natural land contours closely. Severe erosion and sediment hazards exist when this soil is disturbed. Hydrologic group is C/D. Soil Group 7 of NY State system. Capability class is IVe.

Brief Map Unit Description

Delaware County, New York

Map unit: WfC - Wellsboro and Mardin soils, 2 to 15 percent slopes, very stony

Description category: locally created

WfC Wellsboro and Mardin soils, 2 to 15 percent slopes, VERY STONY (PHEL) These soils are very deep (greater than 60"), moderately well drained, medium textured and have a fragipan at 15 to 26 inches. They occupy gently sloping to sloping areas in the uplands. Unlimed, they are very strongly to medium acid. Permeability is moderate above and slow within the fragipan. Available water capacity is moderate. Excessive surface stones or boulders make tillage with conventional farm equipment impractical, and slight seasonal wetness problems exist. These soils are best suited to pasture and woodland uses.

It is suitable for septic systems, although they usually require special leachfield designs to accommodate conditions of high seasonal water table and dense subsoils. Removal of surface stones during leachfield construction can add extra costs.

Seasonal wetness can create problems for buildings with basements. Installing footing drains, sealing the foundation and land grading can help overcome this problem. Road construction on these soils should allow for high potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. Hydrologic group is C/D. Soil Group 8 of NY State system. Capability subclass is VIs.

Map unit: Wg - Wenonah silt loam

Description category: locally created

Wg Wenonah silt loam (NON-HEL) This soil is very deep (greater than 60"), well drained, nearly level and formed in silty or fine sandy alluvial deposits on flood plains and low terraces. It is subject to rare, brief flooding from adjacent streams. Permeability is moderate to moderately rapid. Available water capacity is high. Unlimed, it is strongly to slightly acid in the surface and subsoil. This soil is suited to most cultivated crops grown in the area, and hay or pasture. The main problems are occasional, brief flooding and streambank erosion. It is prime farmland.

This soil is suited to septic systems. However, sites should be evaluated for expected flooding frequency, streambank erosion and rapid subsoil permeability. Flooding makes this soil unsuitable for buildings with basements. Road construction should allow for possible flooding and moderate potential frost action. Using a coarse-grained subbase will help reduce frost damage. Hydrologic group is B. Soil Group 2 of NY State system. Capability subclass is I.

Map unit: WhB - Willdin channery silt loam, 2 to 8 percent slopes

Description category: locally created

WhB Willdin channery silt loam, 2 to 8 percent slopes (PHEL) This soil is brown, very deep (greater than 60"), moderately well drained, medium textured and has a fragipan at 16 to 26 inches. It occupies gently sloping areas above approximately 1750 feet elevation in the uplands. Unlimed, it is very strongly to medium acid. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is suited for cropland, hay and pasture. The main problems are a slight seasonal wetness and a shortened growing season due to elevation. It is prime farmland.

It is suitable for only those septic systems that are specially designed to accommodate conditions of high seasonal water tables and dense subsoils. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for high potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. Hydrologic group is D. Soil Group 5 of NY State system. Capability subclass is IIw.

Brief Map Unit Description

Delaware County, New York

Map unit: WhC - Willdin channery silt loam, 8 to 15 percent slopes

Description category: locally created

WhC Willdin channery silt loam, 8 to 15 percent slopes

(HEL) This soil is brown, very deep (greater than 60"), moderately well drained, medium textured and has a fragipan at 16 to 26 inches. It occupies sloping areas above approximately 1750 feet elevation in the uplands. Unlimed, it is very strongly to medium acid. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is best suited for limited cultivation and hay or pasture. The main problems are the slight seasonal wetness, a shortened growing season due to elevation, and the moderate erosion hazard when tilled.

It is suitable for only those septic systems that are specially designed to accommodate conditions of high seasonal water tables and dense subsoils. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for high potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is D. Soil Group 7 of NY State system. Capability subclass is IIIe.

Map unit: WhD - Willdin channery silt loam, 15 to 25 percent slopes

Description category: locally created

WhD Willdin channery silt loam, 15 to 25 percent slopes

(HEL) This soil is brown, very deep (greater than 60"), moderately well drained, medium textured and has a fragipan at 16 to 26 inches. It occupies strongly sloping areas above approximately 1750 feet elevation in the uplands. Permeability is moderate in the upper subsoil and slow or very slow in the subsoil or substratum. Strong slopes make this soil hazardous to work with modern farm machinery. The hazard of erosion is severe in cultivated areas that are not protected. Pasture and trees are well suited to this soil.

Due to slope, dense subsoils and wetness problems, this soil is marginally suited for septic systems. Special leachfield designs and considerable fill material are usually required. Locating the leachfield on a flatter included area is recommended.

Seasonal wetness and slope can be problems in buildings with basements; installing footing drains, sealing the foundation, and land shaping to divert surface runoff will help reduce these problems. Road construction should allow for high potential frost action; proper drainage and use of a coarse-grained subbase will help reduce frost damage. Roads should follow natural land contours closely. Severe erosion and sediment hazards exist when this soil is disturbed. Hydrologic group is D. Soil Group 8 of NY State system. Capability subclass is IVe.

Map unit: WmA - Willowemoc channery silt loam, 0 to 3 percent slopes

Description category: locally created

WmA Willowemoc channery silt loam, 0 to 3 percent slopes

(NON-HEL) This soil is reddish brown, very deep (greater than 60"), moderately well drained, medium textured and has a fragipan at 17 to 26 inches. It occupies nearly level areas above approximately 1750 feet elevation in the uplands. Unlimed, it is very strongly to medium acid. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is suited for cropland, hay and pasture. The main problems are a slight seasonal wetness and a shortened growing season due to elevation. It is prime farmland.

It is suitable for only those septic systems that are specially designed to accommodate conditions of high seasonal water tables and dense subsoils. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for high potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. Hydrologic group is D. Soil Group 4 of NY State system. Capability subclass is IIw.

Brief Map Unit Description

Delaware County, New York

Map unit: WmB - Willowemoc channery silt loam, 3 to 8 percent slopes

Description category: locally created

WmB Willowemoc channery silt loam, 3 to 8 percent slopes

(PHEL) This soil is reddish brown, very deep (greater than 60"), moderately well drained, medium textured and has a fragipan at 17 to 26 inches. It occupies gently sloping areas above approximately 1750 feet elevation in the uplands. Unlimed, it is very strongly to medium acid. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is suited for cropland, hay and pasture. The main problems are a slight seasonal wetness and a shortened growing season due to elevation. It is prime farmland.

It is suitable for only those septic systems that are specially designed to accommodate conditions of high seasonal water tables and dense subsoils. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for high potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. Hydrologic group is D. Soil Group 4 of NY State system. Capability subclass is IIw.

Map unit: WmC - Willowemoc channery silt loam, 8 to 15 percent slopes

Description category: locally created

WmC Willowemoc channery silt loam, 8 to 15 percent slopes

(HEL) This soil is reddish brown, very deep (greater than 60"), moderately well drained, medium textured and has a fragipan at 17 to 26 inches. It occupies sloping areas above approximately 1750 feet elevation in the uplands. Unlimed, it is very strongly to medium acid. Permeability is moderate above the fragipan and slow in the fragipan. Available water capacity is moderate. This soil is best suited for limited cultivation and hay or pasture. The main problems are the slight seasonal wetness, a shortened growing season due to elevation, and the moderate erosion hazard when tilled.

It is suitable for only those septic systems that are specially designed to accommodate conditions of high seasonal water tables and dense subsoils. Seasonal wetness can be a problem in buildings with basements; installing footing drains, sealing the foundation and land shaping will help overcome this problem. Road construction on this soil should allow for high potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. 8 to 15% slopes require care during development to reduce erosion hazards. Hydrologic group is D. Soil Group 6 of NY State system. Capability subclass is IIIe.

Map unit: WmD - Willowemoc channery silt loam, 15 to 25 percent slopes

Description category: locally created

WmD Willowemoc channery silt loam, 15 to 25 percent slopes

(HEL) This soil is strongly sloping, very deep (greater than 60"), moderately well drained, medium textured and has a fragipan (hardpan) layer at 17 to 26 inches. It occurs above approximately 1750 feet elevation in the uplands. Permeability is moderate in the upper subsoil and slow or very slow in the subsoil or substratum. This soil is hazardous to work with modern farm machinery. The hazard of erosion is severe in cultivated areas that are not protected. Pasture and trees are well suited to this soil.

Due to slope, dense subsoils and wetness problems, this soil is marginally suited for septic systems. Special leachfield designs and considerable fill material are usually required. Locating the leachfield on a flatter included area is recommended.

Seasonal wetness and slope can be problems in buildings with basements; installing footing drains, sealing the foundation, and land shaping to divert surface runoff will help reduce these problems. Road construction should allow for high potential frost action; proper drainage and use of a coarse-grained subbase will help reduce frost damage. Roads should follow natural land contours closely. Severe erosion and sediment hazards exist when this soil is disturbed. Hydrologic group is D. Soil Group 8 of NY State system. Capability subclass is IIVe.

Brief Map Unit Description

Delaware County, New York

Map unit: WnC - Willowemoc and Willdin soils, 2 to 15 percent slopes, very stony

Description category: locally created

WnC Willowemoc and Willdin soils, 2 to 15 percent slopes, VERY STONY

(PHEL) These soils are very deep (greater than 60"), moderately well drained, medium textured and have a fragipan at 16 to 26 inches. They occupy gently sloping to sloping areas above approximately 1750 feet elevation in the uplands. Unlimed, they are very strongly to medium acid. Permeability is moderate above and slow or very slow within the fragipan. Available water capacity is moderate. Excessive surface stones or boulders make tillage with conventional farm equipment impractical, and slight seasonal wetness problems exist. These soils are best suited to pasture and woodland uses.

It is suitable for septic systems, although they usually require special leachfield designs to accommodate conditions of high seasonal water table and dense subsoils. Removal of surface stones during leachfield construction can add extra costs.

Seasonal wetness can create problems for buildings with basements. Installing footing drains, sealing the foundation and land grading can help overcome this problem. Road construction on these soils should allow for high potential frost action; proper drainage and using a coarse-grained subbase will help reduce frost damage. Hydrologic group is D. Soil Group 8 of NY State system. Capability subclass is VIs.