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**AmD2** – Amanda silt loam, 12 to 18 percent slopes, eroded.

This moderately steep, very deep well-drained soil is on short breaks and hillsides along drainage ways in the eastern and south central parts of the county. It formed in medium lime silt loam or loam glacial till. Erosion has removed part of the original surface layer. The present surface layer is a mixture of the remaining original surface layer and subsoil. Included with this soil are small areas of somewhat poorly drained Bennington soils in drainage ways.

Permeability is moderately slow and the available water capacity is moderate. Surface runoff is medium, and the root zone is moderately deep.

There is an erosion hazard when the surface layer is disturbed by tillage that buries all vegetative cover. This is because of raindrop impact, saturated soil in the more permeable tilled layer following heavy rainfall and/or freezing and thawing and surface runoff on these moderately steep slopes. Keeping the soil in forage crops will reduce further erosion losses and aid in rebuilding the organic matter content. Conservation tillage and cover crops will reduce erosion losses when an occasional row crop is grown. No-till planting methods can be used to reduce erosion when new hay and pasture seedings are made.

**AmE** – Amanda silt loam, 18 to 25 percent slopes

This steep, very deep well-drained soil is on breaks to the major stream valleys and on the side slopes of narrow valleys. It formed in medium lime silt loam or loam glacial till. Included with this soil are small areas of somewhat poorly drained Bennington soils at the base of the slope.

Permeability is moderately slow and the available water capacity is somewhat moderate. Surface runoff is high and the root zone is moderately deep or deep.

There is an erosion hazard when the thin surface layer is disturbed by tillage that buries all vegetative cover. Soil loss can be expected because of rain drop impact, saturated soil in the more permeable tilled layer following heavy rainfall and/or freezing and thawing and surface runoff on these steep slopes.

This soil is generally unsuited to row crops because of the erosion hazard and steep slopes. The soil is suited to pasture. No-till seeding methods will reduce erosion losses when new seedings are established. A good fertilizer program will aid in maintaining sufficient cover to prevent erosion. Gullies that start in areas of this soil can extend into less sloping areas upslope if not controlled.
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AmF – Amanda silt loam, 25 to 50 percent slopes.

These very steep, very deep well-drained soils are on the side slopes of stream valleys. They formed in medium lime silt loam, or loam glacial till.

Included with this soil are small areas of somewhat poorly drained Bennington soils at the base of the slope.

Permeability is moderately slow and surface runoff is high. The available water capacity is moderate and the root zone is moderately deep.

There is an erosion hazard when the surface layer is disturbed by tillage that buries all vegetative cover. Soil loss can be expected because of rain drop impact, saturated soil in more permeable tilled layer following heavy rainfall and/or freezing and thawing and surface runoff on these very steep slopes.

These soils are generally unsuited to crops because of the erosion hazard and very steep slopes. Maintaining a good sod cover will reduce erosion losses in pastures. Gullies that start in areas of this map unit can extend into less sloping areas upslope if not controlled.

BeA – Bennington silt loam, 0 to 2 percent slopes.

This nearly level, very deep somewhat poorly drained soil is on upland flats in the eastern part of the county. It formed in silty clay loam, clay loam or loam medium lime glacial till. Included with this soil are small areas of the dark colored very poorly drained Pewamo soils and the lighter colored Condit soils on the lowest part of the landscape. Also included are the moderately well drained Cardington or Centerburg soils on the highest part of the landscape.

Permeability is moderately slow or slow and surface runoff is low. The root zone is deep, and the available water capacity is moderate.

There is a wetness hazard, which must be overcome before the soil can be used successfully for crop production. The soil is saturated with free water well into the growing season unless artificially drained. Subsurface drains are effective in draining soil if outlets are available. Open ditches are needed to provide outlets in some of the larger areas. The soil is well suited to crops if drained. Conservation tillage is adapted in drained areas.
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**BeB** – Bennington silt loam, 2 to 4 percent slopes.

This gently sloping very deep somewhat poorly drained soil is on uplands in the eastern part of the county. Slopes commonly are short and irregular. The soil formed in silty clay loam, clay loam, or loam medium lime glacial till. Included with this soil are small areas of the moderately well drained Cardington or Centerburg soils on the highest part of the landscape. Also included are the very poorly drained Pewamo and the lighter colored Condit soils on the lowest part of the landscape.

Permeability is moderately slow or slow and surface runoff is low or medium. The available water capacity is moderate and root zone is deep.

Wetness is the main limitation for crop production on this soil. Under natural conditions, the soil is saturated with free water well into the growing season. Subsurface drains are effective in removing excess water. In the larger areas where slopes are very irregular, considerable excavation is needed to install a subsurface drainage system. There is also an erosion hazard on this soil but it commonly is overshadowed by the wetness hazard. Subsurface drainage, conservation tillage that leaves crop residue on the soil surface and cover crops are the best adapted erosion control practices on the short uneven slopes.

**BoA** – Blount silt loam, 0 to 2 percent slopes.

This nearly level very deep somewhat poorly drained soil is on upland flats in the western part of the county. It formed in high lime clay loam and silty clay loam glacial till. Included with this soil are small areas of the dark colored very poorly drained Pewamo soils on the lowest part of the landscape. Also included are the moderately well drained, Glynwood soils on the highest part of the landscape.

Permeability is slow or moderately slow and surface runoff is low. The root zone is moderately deep and the available water capacity is moderate.

This soil has a wetness hazard that limits its use for crop production. The soil is saturated with free water for extended periods in the winter and spring. Some of the lowest included areas are subject to occasional ponding. Periods of excessive wetness occur well into the growing season. Subsurface drains are effective in removing excess water if outlets are available. Open ditches are needed to provide outlets in some of the larger areas. The soil is productive when adequately drained. There is little erosion on the nearly level slopes, but some areas below adjacent steeper slopes receive sediment. Conservation tillage is adapted in areas with adequate drainage.
BoB – Blount, 2 to 4 percent slopes.

This gently sloping, very deep somewhat poorly drained soil is on uplands in the western part of the county. It formed in high lime clay loam or silty clay loam glacial till. Moderately well drained Glynwood soils are included on the higher part of the landscape. Also included are small areas of the dark colored very poorly drained Pewamo soils on the lowest part of the landscape.

Permeability is slow or moderately slow and the available water capacity is moderate. The root zone is moderately deep, and surface runoff is low or medium.

A wetness hazard must be overcome before this soil can be used successfully for crops. Under natural conditions the water table is within 12 inches of the surface well into the growing season. Subsurface drains are effective in draining the soil, but must be closely spaced because of the slow permeability. Erosion is a problem on the longer slopes, and the soil surface is susceptible to crusting. The use of cover crops is effective in reducing erosion and conservation tillage is adapted in drained areas.

CaB – Cardington silt loam, 2 to 6 percent slopes.

This gently sloping, very deep moderately well drained soil is on uplands in the eastern part of the county between Alum Creek and Big Walnut Creek. It formed in medium lime silty clay loam and clay loam glacial till. Included with this soil are small areas of somewhat poorly drained Bennington soils on the lower part of the landscape. Also included are the dark colored very poorly drained Pewamo soils in depressions.

Permeability is moderately slow or slow and surface runoff is medium. The root zone is deep and the available water capacity is moderate.

There is an erosion hazard when this soil is tilled. Cover crops and conservation tillage that leaves crop residue on the soil surface are well-adapted erosion control practices. The lower and more concave parts of some areas are excessively wet in the early part of the growing season. Properly designed subsurface drains are effective in removing excess water from these seep areas.

CaC2 – Cardington silt loam, 6 to 12 percent slopes, eroded.

This strongly sloping, very deep moderately well drained soil is on short hillsides mainly in the eastern part of the county between Alum Creek and Big Walnut Creek, along small natural drainage courses. It formed in medium lime silty clay loam or clay loam glacial till. Erosion has removed part of the original surface layer. The present surface layer is a mixture of the remaining original surface layer and subsoil.
Included with this soil are well-drained Amanda soils on steeper parts of slopes. Also included are small areas of somewhat poorly drained Bennington soils in natural drainage ways.

Permeability is moderately slow or slow and surface runoff is rapid. The root zone is deep and the available water capacity is moderate.

There is an erosion hazard when this soil is tilled. Significant erosion losses have already occurred and can be expected to continue if the soil surface is not protected. Conservation tillage and cover crops are well-adapted erosion control practices that will also help rebuild the organic matter content of the eroded surface layer. Randomly spaced subsurface drains are effective in removing excess water from troublesome wet spots on the lower parts if some slopes.

\textbf{CeB} – Centerburg silt loam, 2 to 6 percent slopes.

This gently sloping, very deep moderately well drained soil is on uplands in the eastern part of the county east of Big Walnut Creek. It formed in medium lime glacial till. Included with this soil are small areas of the somewhat poorly drained Bennington soils on the lower part of the landscape. Also included are the dark colored very poorly drained Pewamo soils in depressions.

Permeability is moderately slow and surface runoff is low or medium. The root zone is deep and the available water capacity is moderate.

There is an erosion hazard when this soil is tilled. Cover crops and conservation tillage that leaves crop residue on the soil surface are well-adapted erosion control practices.

The lower and more concave parts of some areas are excessively wet in the early part of the growing season. Properly designed sub-surfaces drains are effective in removing excess water from these seep areas.

\textbf{CeC2} – Centerburg silt loam, 6 to 12 percent slopes.

This strongly sloping, very deep moderately well drained soil is on short hillsides mainly along small natural drainage courses in the eastern part of the county east of Big Walnut Creek. It formed in medium lime loam glacial till. Erosion has removed part of the original surface layer. The present surface layer is a mixture of the remaining original surface layer and subsoil. Included with this soil are small areas of the well-drained Amanda soils on steeper parts of the slopes. Also included are the somewhat poorly drained Bennington soils in natural drainage ways.

Permeability is moderately slow and surface runoff is medium. The available water capacity is moderate and the root zone is deep.
There is an erosion hazard when this soil is tilled. Significant erosion losses have already occurred and can be expected to continue if the soil surface is not protected. Conservation tillage and cover crops are well-adapted erosion control practices that will also help rebuild the organic matter content of the eroded surface layer. Randomly spaced subsurface drains are effective in removing excess water from troublesome wet spots on the lower parts of some slopes.

**CnA – Condit silt loam, 0 to 1 percent slopes.**

This nearly level, very deep, very poorly drained soil is on upland flats and depressions. It formed in clay loam and loam glacial till. Included with this soil are small areas of the somewhat poorly drained Bennington soils around the edge. Also included are the dark colored very poorly drained Pewamo soils in some depressions.

Permeability is slow. Surface runoff is negligible or low. Most areas are in the lowest part of the landscape and receive runoff and seepage from higher areas nearby. These areas pond after heavy rains. Available water capacity is moderate. Root zone depth is limited by the water table, which may be very deep in late summer and fall.

The natural wetness of this soil limits its use for crops. The water table is within a foot of the surface for extended periods well into the growing season, and some areas are ponded after heavy rains. Subsurface drains are only moderately effective in lowering the water table because of the slow permeability of the subsoil and the lack of suitable outlets in many areas. Subsurface drains are needed in areas nearby. The soil is moderately productive when drained. Winter grains and forages are more likely to be damaged by standing water than corn or soybeans.

**EdA – Edwards muck, 0 to 1 percent slopes.**

This nearly level, very dark colored, very poorly drained soil is present in closed depressions on outwash plains. In these depressions, the remains of plants have partially decayed to form muck. The muck is underlain by white marl (remains of shells) at about 19 inches. Some of the depressions are small, but one southwest of Radnor is about 40 acres. This is the only organic (muck) soil mapped in the county.

Included with this soil around the edges is the dark colored, very poorly drained Pewamo soil and the dark colored deep somewhat poorly drained Stone soil.

Permeability is moderate or moderately rapid in the muck and moderately slow or slow in the marl. Surface runoff is negligible. The available water capacity is moderate. The root zone is determined by the level of the water table.
This soil is considered to be a natural wetland because of a permanent water table near the surface and the presence in many areas of hydrophytic vegetation. Some areas have been drained in the past, but oxidation of the muck has lowered the elevation of this soil so that continued drainage for crop production is generally not possible.

**GaC2 – Gallman loam, loamy substratum, 6 to 12 percent slopes, eroded.**

This strongly sloping, very deep, well-drained soil is mostly on outwash terraces along the sides of stream valleys. Most areas are less than 10 acres in size. The soil formed in loamy glacial outwash with a high content of black shale. Erosion has removed part of the original surface layer. The present surface layer is a mixture of the remaining original surface layer and subsoil. Included with this soil are small areas of Amanda soils on steeper parts of slopes.

Permeability is moderately rapid in the subsoil and moderately rapid to very rapid in the substratum. Surface runoff is medium. Available water capacity is low and the root zone is deep.

There is erosion hazard when this soil is tilled. Significant erosion has already occurred. The soil has poorer tilth and a lower organic matter content than originally.

Few areas are large enough to warrant erosion control practices different from those adapted to surrounding soils of greater extent. Conservation tillage and cover crops are well adapted in most areas. These practices will reduce further erosion losses, while at the same time helping to rebuild the organic matter content of the surface layer.

Natural drainage is adequate for crops.

**GbA – Gallman silt loam, loamy substratum, 0 to 2 percent slopes.**

This nearly level, very deep, well-drained soil is on outwash terraces. It formed in loamy glacial outwash with a high content of black shale. Included with this soil are small areas of the moderately deep, very steep Heveric soils along Alum Creek north of Kilbourne and the dark colored very poorly drained Milgrove soils in depressions.

Permeability is moderately rapid. Surface runoff is very low or low. The available water capacity is moderate and the root zone is deep or very deep.

This soil is very suited to crops. There is little erosion on the nearly level slopes. Natural drainage is adequate. Shortages of available water are rare and of brief duration. Tilth is good. Maintenance of lime and fertility levels is the main management problem. Conservation tillage is well adapted and can reduce the time and energy needed to plant the crop.
GbB – Gallman silt loam, loamy substratum, 2 to 6 percent slopes.

This gently sloping very deep well-drained soil is on outwash terraces. It formed in loamy glacial outwash with a high content of black shale. Included with this soil are small areas of the moderately deep, very steep Heveric soils along Alum Creek north of Kilbourne and the dark colored, very poorly drained Milgrove soils in depressions.

Permeability is moderately rapid. Surface runoff is low. The available water capacity is moderate and the root zone is deep or very deep.

There is an erosion hazard when this soil is tilled. In most areas, simple practices such as cover crops are effective in controlling erosion. Conservation tillage is a very well adapted erosion control practice that also results in time and energy savings when planting crops. The soil is very well suited to crops if managed to control erosion. Natural drainage is adequate and tilth is generally good. Shortage of available water are rare and of brief duration.

GcB – Gallman silt loam, till substratum 2 to 6 percent slopes

This gently sloping very deep well-drained soil is on outwash terraces. It formed in 60 to 80 inches of loamy glacial outwash with a high content of black shale over loam or clay loam glacial till. Included with this soil are small areas of dark colored moderately well drained Pacer soils in depressions.

Permeability is moderately rapid in the subsoil and moderately slow or slow in the substratum. Surface runoff is low. The available water capacity is moderate and the root zone is deep or very deep.

There is an erosion hazard when this soil is tilled. Cover crops, and conservation tillage that leave crop residue on the soil surface will aid in controlling erosion, while helping to build the organic matter content of the surface layer. Natural drainage is adequate for crops. Shortages of available moisture are brief and infrequent.

GwB – Glynwood silt loam, 2 to 6 percent slopes

This gently sloping, very deep moderately well drained soil is on uplands in the western part of the county. It formed in high lime silty clay loam or clay loam glacial till. Included with this soil are small areas of the somewhat poorly drained Blount soils, on the lower part of the landscape and the dark colored very poorly drained Pewamo soils in deep depressions.

Permeability is slow and surface runoff is low or medium. Available water capacity is moderate and the root zone is moderately deep.
There is an erosion hazard when this soil is tilled. Cover crops and conservation tillage are adapted erosion control practices. The soil is saturated with free water into the early part of the growing season, especially on the lower and more concave parts of slopes. Subsurface drains are effective in removing excess water in such areas.

**GwC2** – Glynwood silt loam, 6 to 12 percent slopes, eroded

This strongly sloping, very deep moderately well drained soil is on short slopes adjacent to drainage courses in the western part of the county. It formed in high lime clay loam and silt loam glacial till. Erosion has removed a significant part of the original surface layer. The present surface layer is a mixture of the original surface layer and subsoil. Included with this soil are small areas of somewhat poorly drained Blunt soils on the lower part of the landscape. Also included are dark colored, very poorly drained Pewamo soils along drainage courses that are sometimes covered with several inches of light colored sediment.

Permeability is slow and surface runoff is medium or high. The available water capacity is low or moderate and the root zone is moderately deep.

There is an erosion hazard when this soil is tilled. Significant erosion has already occurred. The use of cover crops will reduce further erosion losses and will help restore the organic matter content of the surface layer. Conservation tillage is also an adapted erosion control practice. If no-till seedings are made into a cover crop, soil-seed contact will be improved on the eroded surface. Leaving grass strips in concave parts of the slope will help prevent gully development. Some of the included natural drainage ways are good places for grassed waterways. Randomly spaced subsurface drains will aid in removing excess water from troublesome wet spots and seep areas on the lower parts of the slope.

**GzC3** – Glynwood silty clay loam, 6 to 12 percent slopes, severely eroded

These strongly sloping, very deep moderately well drained soils are on hillsides and side slopes of small natural drainage ways in the western part of the county. They formed in high lime clay loam and silt loam glacial till. Erosion has removed most of the original silt loam surface layer. The present surface layer is mostly silt loam subsoil. Shallow gullies are present in some areas. Included are some small protected areas that have a silt loam surface layer. Also included are somewhat poorly drained Blount soils on the lower part of the landscape and dark colored very poorly drained Pewamo soils along drainage ways that are covered with 10 to 20 inches of light colored sediment.

Permeability is slow and surface runoff is high. The available water capacity is low or moderate and the root zone is moderately deep.
Erosion has already substantially reduced the productivity of these soils. There is an erosion hazard when they are tilled. Soil losses can be expected whenever the surface layer is disturbed by tillage that buries all vegetative cover. This is because of raindrop impact, saturated soil in the more permeable tilled layer following heavy rainfall and/or freezing and thawing and surface runoff on these strongly sloping soils. Using green manure crops and cover crops will increase the organic matter content of the surface layer and improve tilth. Conservation tillage that leaves crop residue on the soil surface will aid in organic matter buildup at the surface. Making no-till seedings in a cover crop will improve seed-soil contact in the silty clay loam surface layer. Leaving grass strips in the concave parts of slopes will aid in preventing gullies or gully enlargement. Subsurface drains are beneficial in seep spots and concave areas on the lower parts of the slopes.

**HeF** – Heveric silt loam, 25 to 70 percent slopes.

This very steep, moderately deep, well-drained soil is mainly on the east side of the Olentangy River south of Delaware and on the east side of Alum Creek north of Kilbourne. It formed in loamy glacial outwash over residue weathered from black Ohio shale. Included with this soil are areas of well-drained Gallman soil and moderately well drained Latham soil on shoulders. Also included are small areas of well-drained Breckville soils on backslopes near shale bedrock outcrops.

Permeability is moderately slow and surface runoff is high. The available water capacity is low and the root zone is moderately deep.

This soil is generally unsuited to crops, hay or improved pasture because of its very steep slopes and droughtiness. It is best suited to wildlife habitat and woodland.

**HyA** – Hyatts silt loam, 0 to 2 percent slopes.

These nearly level deep, somewhat poorly drained soil is on upland flats east of Hoover Reservoir in the southwestern part of the county. It formed in 36 to 48 inches of medium lime clay loam glacial till over clay residuum from shale bedrock. Included with this soil are small areas of moderately well drained, moderately deep Rarden soils near steeper lower slopes.

Permeability is slow and surface runoff is low. The available water capacity is moderate and the root zone is deep.

Wetness is the major limitation for crops on this soil. The soil is saturated with free water well into the growing season if not drained. In most places, the upper part of the shale is soft enough to be dug through with regular ditching equipment.
HyB – Hyatts silt loam, 2 to 4 percent slopes.

These gently sloping, deep somewhat poorly drained soil is on upland slopes east of Hoover Reservoir in the southeastern part of the county. It formed in 36 to 48 inches of medium lime glacial till over residuum from shale bedrock. Included with this soil are small areas of moderately well drained, moderately deep Rarden soils near steeper, lower slopes.

Permeability is slow and surface runoff is low or medium. The available water capacity is moderate and the root zone is deep.

Wetness is the major limitation for crops on this soil. The soil is saturated with free water well into the growing season if not drained. In most places, the upper part of the shale is soft enough to be dug with regular ditching equipment. There is an erosion hazard, especially on the longer slopes. Subsurface drainage, cross slope tillage, and conservation tillage are the best-adapted erosion control practices.

JmA – Jimtown silt loam, 0 to 2 percent slopes.

This nearly level, very deep somewhat poorly drained soil is on outwash terraces along streams. It commonly is low in the landscape, but is above the normal level of flooding. It formed in loamy outwash with a high content of black shale. Included with this soil are small areas of the dark colored very poorly drained Millgrove soils in depressions.

Permeability is moderate. Surface runoff is very low or low. The available water capacity is moderate. The root zone is limited only by the water table, which may be very deep in late summer and fall.

A wetness hazard must be overcome before this soil can be used successfully for crops. The soil is saturated with free water in the winter and spring, and periods of excessive wetness extend well into the growing season. Subsurface drains are effective in lowering the water table when properly outleted. Some areas also received runoff and seepage from adjacent slopes. Surface drains or diversions can be used to remove this water.

LbF – Latham-Brecksville complex, 25 to 70 percent slopes.

These very steep, moderately deep, moderately well drained and well-drained soils are mainly on the east side of Alum Creek south of Kilbourne. They formed in residuum from Black Ohio shale. Latham soils are on the upper part of the slope and Brecksville soils are on the middle to lower part of the slope near shale bedrock outcrops. These soils occur so closely together that they cannot be mapped separately on these very steep narrow slopes. Included with these soils are very small areas of very deep, well drained Amanda soils and very deep moderately well drained Cardington soils on the
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upper part of the slopes. Also included are small areas of well drained, moderately deep Loudonville soils near Hoover Reservoir.

Permeability is slow. Surface runoff is high. The available water capacity is low and the root zone is moderately deep.

These soils are generally unsuited to crops, hay or improved pasture because of very steep slopes and droughtiness. They are best suited to wildlife habitat and woodland.

**LeE** – Leoni gravelly loam, 12 to 25 percent slopes.

This moderately steep and steep, very deep well-drained soil is on short slopes on kames and eskers near Radnor. It formed in loamy outwash over calcareous sand and gravel. Included with this soil are small areas of very deep well-drained strongly sloping Scioto soils on Summits.

Permeability is moderate in the subsoil and moderately rapid or rapid in the substratum. Surface runoff is medium. The available water capacity is very low or low. The root zone is deep.

There is an erosion hazard when tilled. These soils are generally unsuited to crops because of steep slopes and droughtiness. They are best left as permanent meadow or planted to trees. Drought resistant forages such as alfalfa should be planted. No-till seeding methods will reduce erosion during seeding establishment.

**LoA** – Lobdell silt loam, channery substratum, 0 to 2 percent slopes, occasionally flooded.

This nearly level, very deep moderately well drained soil is on flood plains. It formed in recent alluvium. Included with this soil are small areas of dark colored, well-drained Rossburg soils on higher parts of the flood plain. Also included is dark colored very poorly drained Sloan soils in old stream channels.

Permeability is moderate and surface runoff is negligible. The available water capacity is high and the root zone is deep.

This soil is well suited to crops. The water table is high in the winter and spring, but most periods of excessive wetness are very early in the growing season. Forages and winter grains are more likely to be damaged by wetness and flooding than corn or soybeans. Subsurface drains are effective in correcting local wetness problems, but are subject to damage by floodwaters. The frequency and duration of flooding differs considerably from area to area. The soil is well suited to conservation tillage. While not needed for erosion control, it can reduce the time and energy needed to plant crops.
**LsA** – Lobdell, channery substratum, Sloan till substratum complex, 0 to 2 percent slopes, occasionally flooded.

These nearly level, very deep, moderately well drained and very poorly drained soils are on flood plains mostly in the eastern part of the county. They formed in recent alluvium. Lobdell soils are on the highest part of the flood plain nearest the stream. Sloan soils are on the lowest part of the flood plain and in old stream channels. These soils occur so closely together that they cannot be mapped separately on these narrow flood plains. Included with these soils are small areas of somewhat poorly drained Jimtown soils that do not flood. Also included are dark colored well-drained Rossburg soils on the highest parts of the flood plains near some streams.

Permeability is moderate for the Lobdell soil and moderate or moderately slow for the Sloan soil. Surface runoff is negligible. The available water capacity is high. The root zone is very deep for the Lobdell soil and deep for the Sloan soil.

These soils occur on narrow flood plains, and though the Lobdell soil is better suited to crops than the wetter Sloan Lobdell soil, most of these flood plains are not cropped. Flooding on both soils plus a lack of suitable subsurface drainage outlets on the Sloan soil are why most areas are in woods or permanent pasture.

**LvB** – Loudonville silt loam, 2 to 6 percent slopes.

This gently sloping, moderately deep, well-drained soil is on uplands near Hoover Reservoir in the eastern part of the county. It formed in 20 to 40 inches of glacial till over sandstone bedrock. Included with this soil are small areas of somewhat poorly drained Smothers soils on the lower part of the landscape.

Permeability is moderate and subsurface runoff is low or medium. The available water capacity is low and the root zone is moderately deep.

There is an erosion hazard when this soil is tilled. Erosion reduces the depth to the underlying rock, thus reducing the volume of the soil from which plants can extract nutrients and available water. In addition, the soils are droughty. Conservation tillage that leaves crop residue on the soil surface is a well-adapted erosion control practice that also aids in moisture conservation. Cover crops are also an adapted erosion control practice.
**LyD2 – Lybrand silt loam, 12 to 18 percent slopes, eroded.**

This moderately steep, very deep well-drained soil is on side slopes of stream valleys in the western part of the county. It formed in high lime silty clay loam and clay loam glacial till. Erosion has removed part of the original surface layer, and the present surface layer is a mixture of the remaining original surface layer and subsoil. Included with this soil are small areas of moderately deep Milton soils along the Scioto River.

Permeability is moderately slow or slow and the root zone is moderately deep or deep. The available water capacity is moderate and surface runoff is medium.

There is an erosion hazard when this soil is tilled. Significant soil losses have already occurred and can be expected to continue whenever the surface layer is disturbed by tillage that buries all vegetative cover. This is because of raindrop impact, saturated soil in the more permeable tilled layer following heavy rainfall and or freezing and thawing and surface runoff on these moderately steep slopes. Keeping the soil in forage crops will reduce further erosion losses when an occasional row crop is grown. No-till planting methods will reduce erosion when hay and pasture seedings are made. Subsurface drains can be used to drain seep spots and other wet areas on the lower parts of some slopes.

**LyE2 – Lybrand silt loam, 18 to 25 percent slopes.**

This steep, very deep well-drained soil is present on side slopes of stream valleys in the western part of the county. It formed in high lime clay loam and silty clay loam glacial till. Erosion has removed part of the original surface layer. The present surface layer is a mixture of the remaining original surface layer and subsoil.

Permeability is moderately slow or slow and surface runoff is high. The root zone is deep or moderately deep and the available water capacity is moderate.

This soil is generally unsuited to row crops. There is an erosion hazard when the surface layer is disturbed by the tillage that buries all vegetative cover. Soil loss can be expected because of raindrop impact, saturated soil in the more permeable tilled layer following heavy rainfall and/or freezing and thawing and surface runoff on these steep slopes. Significant soil losses have already occurred and can be expected to continue if the soil is tilled. The soil is suited to pasture. No-till seeding methods will reduce erosion losses when new seedings are made. A good fertilization program will aid in maintaining a sod cover dense enough to prevent soil losses. Gullies that start in areas of this soil can extend into less sloping area upslope if not controlled.
LzD3 – Lybrand silty silt loam, 12 to 18 percent slopes, severely eroded.

This moderately steep, very deep well-drained soil is on side slopes of stream valleys in the western part of the county. It formed in high lime clay loam and silty clay loam glacial till. Erosion has removed most of the original silt loam surface layer. The present thin surface layer is mostly silty clay loam subsoil. Shallow gullies are present in some areas. Included are some small protected areas that have a silt loam surface layer.

Permeability is moderately slow or slow and the root zone is moderately deep. Surface runoff is medium or high and the available water capacity is low or moderate.

This soil is generally unsuited to cultivated crops. There is an erosion hazard. Productivity has already been substantially reduced by erosion and soil losses can be expected whenever the surface layer is disturbed by tillage that buries all vegetative cover. This is because of raindrop impact, saturated soil in the more permeable tilled layer following heavy rainfall and/or freezing and thawing and surface runoff on these moderately steep slopes.

MaB – Martinsville loam, 2 to 6 percent slopes.

This gently sloping very deep well-drained soil is present on outwash terraces and less often on uplands in the northwestern part of the county. It formed in loamy glacial outwash.

Permeability is moderate. Surface runoff is low and the root zone is very deep. The available water capacity is high.

There is an erosion hazard when this soil is tilled. Cover crops and conservation tillage are well-adapted erosion control practices. This soil is well suited to crops when managed to control erosion. Natural drainage is adequate and tilth is generally good.

MbB – Martinsville loam, till substratum, 2 to 6 percent slopes.

This gently sloping, very deep, well-drained soil is present on outwash terraces in the western part of the county. It formed in 60 – 80 inches of loamy glacial outwash over clay loam or loam glacial till. Included with this soil are small areas of moderately well drained Glynwood soils adjacent to uplands.

Permeability is moderate. Surface runoff is low and the root zone is deep or very deep. The available water capacity is high.

There is an erosion hazard when this soil is tilled. Cover crops and conservation tillage are well-adapted erosion control practices. The soil is well suited to crops when managed to control erosion.
Natural drainage is adequate and tilth is generally good.

**McD2 – Mentor silt loam, 12 to 18 percent slopes, eroded.**

This moderately steep, very deep, well-drained soil is on kames east of South Condit. It formed in silty deposits. Erosion has removed part of the original remaining surface layer. The present surface layer is a mixture of the original surface layer and subsoil. Included in mapping are small areas of the moderately well drained Centerburg soils on summits.

Permeability is moderate. Surface runoff is medium. The available water capacity is high and the root zone is deep or very deep.

There is an erosion hazard when this soil is tilled. Significant erosion losses have already occurred, and can be expected to continue whenever the soil surface is disturbed by tillage that buries all vegetative cover. This is because of raindrop impact, saturated soil in the more permeable tilled layer following heavy rainfall and/or freezing and thawing and surface runoff on these moderately steep slopes. Keeping the soil in forage crops will reduce further erosion losses, and aid in rebuilding the organic matter content of the soil. Conservation tillage and cover crops will reduce erosion losses when an occasional row crop is grown. No-till planting methods will reduce erosion losses when new hay and pasture seedings are made.

**MfA – Milgrove silt loam, 0 to 2 percent slopes.**

This nearly level, very deep, dark colored very poorly drained soil is on depressional areas of outwash terraces along streams in the eastern part of the county. It formed in loamy glacial outwash with a high content of black shale gravel in the substratum. Included with this soil are small areas of lighter colored somewhat poorly drained Jimtown soils on slightly higher areas.

Permeability is moderate. Surface runoff is very low or low. Some areas are occasionally ponded. The available water capacity is high and root depth is limited only by the water table, but may be deep in late summer and fall.

Wetness is the primary limitation for crops on this soil. It is saturated with free water for extended periods in the winter and spring, and periods of excessive wetness extend well into the growing season. Some areas are ponded. Subsurface drains are effective in lowering the water table if they can be properly outletted. Ditch bank stability is poor, especially if cuts extend into the more gravely substratum. Tilling within the proper moisture range is essential to maintaining good tilth. The soil is productive when adequately drained.
MgA – Milgrove silty clay loam, 0 to 2 percent slopes.

This nearly level, very deep, dark colored very poorly drained soil is on depressional areas of outwash terraces along streams in the western part of the county. It formed in loamy glacial outwash with a high content of limestone cobbles on the substratum. Included with this soil are small areas of dark colored very poorly drained Pewamo soils uplands. Also included in a few areas near Radnor are small areas of dark colored deep, somewhat poorly drained stone soils on slightly higher areas.

Permeability is moderate. Surface runoff is very low or low. Some areas are occasionally ponded. The available water capacity is high and root depth is limited only by the water table, which may be deep in late summer and fall.

Wetness is the primary limitation for crops on this soil. It is saturated with free water for extended periods in the winter and spring, and periods of excessive wetness extend well into the growing season. Some areas are ponded. Subsurface drains are effective in lowering the water table if they can be properly outletted. Ditch bank stability is poor, especially if cuts extend into the more cobbly substratum. Tilling within the proper moisture range is essential to maintaining good tilth. The soil is productive when adequately drained.

MhA – Milgrove silty clay loam, 0 to 2 percent slopes, rarely flooded.

This nearly level, very deep, dark colored very poorly drained soil is on depressional areas of outwash terraces along streams that show evidence of rarely flooding outside of the adjacent flood plain.

Permeability is moderate. Surface runoff is very low or low. Some areas are occasionally ponded. The available water capacity is high and root depth is limited only by the water table, which may be deep in late summer and fall.

Wetness is the primary limitation for crops on this soil. It is saturated with free water for extended periods in the winter and spring, and periods of excessive wetness extend well into the growing season. Some areas are ponded. Subsurface drains are effective in lowering the water table if they can be properly outletted. Some areas are so low in relation to a lake or stream that the drains cannot be properly outletted. Ditch bank stability is poor, especially if cuts extend into the more gravelly substratum. Tilling within the proper moisture range is essential to maintaining good tilth. The soil is productive when adequately drained.
MoB – Milton silt loam, 2 to 6 percent slopes.

This gently sloping, moderately deep, well-drained soil is on uplands in the western part of the county. It formed in 20 to 40 inches of high lime clay loam and silty clay loam glacial till over limestone bedrock. Included with this soil are small areas of very deep moderately well drained Glynwood soils on higher parts of the landscape.

Permeability is moderately slow or moderate. Available water capacity is low. The root zone is moderately deep and surface runoff is low.

There is an erosion hazard when this soil is tilled. Erosion reduces the depth to limestone bedrock, reducing available water and nutrient capacity. Adapted erosion control practices include cross slope tillage, cover crops, and conservation tillage. Crops commonly suffer from a shortage of available water in extended dry periods. Conservation tillage that leaves crop residue on the soil surface aids in water conservation by reducing evaporation as well as aiding in erosion control.

MoC2 – Milton silt loam, 6 to 12 percent slopes, eroded.

This strongly sloping, moderately deep, well-drained soil is on side slopes adjacent to drainage courses. It formed in 20 to 40 inches of high lime clay loam and silty clay loam glacial till over limestone bedrock. Erosion has removed part of the original surface layer and the present surface layer is a mixture of the remaining original surface layer and subsoil. Included with this soil are small areas of very deep moderately well drained Glynwood soils on higher parts of the landscape.

Permeability is moderately slow or moderate. Surface runoff is medium. The root zone is moderately deep and the available water capacity is low.

There is an erosion hazard when this soil is tilled. Significant soil losses have already occurred, and can be expected to continue if the soil surface is exposed. Erosion causes poor tilth in the surface layer and reduces available water and nutrient capacity. Crops can be expected to suffer from a lack of available water in extended dry periods. Conservation tillage that leaves crop residue on the soil surface aids in both erosion control and water conservation. It also aids in rebuilding the organic matter content of the surface layer. Cover crops are desirable, as an erosion control measure through winter but should not compete for the limited water supply during the growing season.

MpD2 – Milton-Lybrand complex, 12 to 18 percent slopes, eroded.

These moderately steep, moderately deep and very deep well-drained soils are on hillsides adjacent to drainage courses and stream valleys in the western part of the county. Milton soils formed in 20 to 40 inches of high lime clay loam and silty clay loam glacial till over limestone bedrock outcrops. Lybrand soils formed in high lime clay loam and silty clay loam glacial till on the lower part of the slope. These soils occur so closely
together that they cannot be mapped separately on these narrow slopes. Included with these soils are small areas of moderately well drained Glynwood soils in concave wetter areas at the base of some slopes. Erosion has removed part of the original surface layer, and the present surface layer is a mixture of the original surface layer and subsoil. Permeability is moderate or moderately slow for the Milton soil and moderately slow or slow for the Lybrand soil. Surface runoff is medium for both soils. The root zone is moderately deep for the Milton soil and is moderately deep or deep for the Lybrand soil. Available water capacity is low for the Milton soil and moderate for the Lybrand soil. There is an erosion hazard when this soil is tilled. Significant soil losses have already occurred and can be expected to continue whenever the surface layer is disturbed by tillage that buries all vegetative cover. This is because of raindrop impact, saturated soil in the more permeable tilled layer following heavy rainfall and or freezing and thawing and surface runoff on these moderately steep slopes. Keeping the soil in forage crops will reduce further erosion and aid in rebuilding the organic matter content of the soil. The use of conservation tillage will reduce erosion when an occasional row crop is grown. No-till planting methods will reduce erosion when hay and pasture seedings are made. Species tolerant of some moisture stress should be selected for long-term forage strands.

**PaA** – Pacer silt loam, 0 to 2 percent slopes.

This nearly level, very deep, dark colored moderately well drained soil is on terraces along streams north of Delaware. It formed in 40 to 60 inches of loamy outwash with a high content of black shale over silt loam glacial till. Included with this soil are small areas of the dark colored very poorly drained Milgrove soils in depressions. Also included are small areas of the lighter colored well-drained Gallman soils on higher parts of the landscape.

Permeability is moderate in the upper part of the subsoil and moderately slow or slow in the lower part and in the substratum. Surface runoff is low or very low. The available water capacity is moderate and the root zone is deep.

This soil is well suited to crops. There is little to no erosion on the nearly level slopes. Natural drainage is generally adequate, but randomly spaced subsurface drains are beneficial in some of the lower and slightly concave parts of the landscape. Such areas commonly remain wet longer in the spring than the slightly convex areas. Conservation tillage that leaves crop residue on the soil surface is well adapted. While not needed for erosion control, it can reduce the time and energy required to plant crops.
**PwA – Pewamo silty clay loam, 0 to 1 percent slopes.**

This nearly level, very deep, dark colored very poorly drained soil is on upland flats and depressions. It is the most extensive soil in the county. It formed in medium to high lime clay loam or silty clay loam glacial till. Included with this soil in the eastern part of the county is the light colored, somewhat poorly drained Bennington soil on higher areas of the landscape. Also included in the western part of the county is the light somewhat colored somewhat poorly drained Blount soil on the higher areas of the landscape.

Permeability is moderately slow. Surface runoff is negligible. The available water capacity is high. The depth of the root zone is controlled by the water table but depth is deep or very deep in late summer or fall. Some areas in closed depressions are subject to occasional ponding.

The natural wetness of this soil is a limitation for crop production. The water table is within a foot of the surface well into the growing season under natural conditions. Some areas are ponded in the winter and spring. Subsurface drains are effective in removing excess water, if adequate outlets are available. Natural outlets are not available in many of the larger areas; and ditches are needed to provide them. A combination of ditches and subsurface drains can be used to effectively drain most of the large areas. The areas in small closed depressions commonly are more difficult to drain. Once drained, the soil is very productive. Its high organic matter and clay content create a high capacity to store and release plant nutrients. Tilling this soil within the proper moisture range is essential in maintaining good tilth. Conservation tillage is adapted in adequately drained areas. While not needed to control erosion, it can reduce the energy and time required to plant crops.

**Pz – Pits, gravel.**

This soil-mapping unit is on areas where gravel has been mined. Most areas are on kames, eskers and outwash terraces. Soils on the side slopes consist of layers differing in the size and amount of grave. They are similar to the substratum of Gallman, Leoni and Scioto soils. Soil conditions on the bottoms of the pits range from droughty grave to ponded clay loam glacial till.

Inactive gravel pits are poorly suited to crops, but have a limited suitability for forages. Some of the side slopes can be cut back so that seeding is possible. Only species such as sweet clover that can tolerate drought should be planted. Species to plant on the pit floor depends on the degree of wetness. Additions of organic matter are very beneficial to seedings. The bottoms of some pits are slowly permeable and difficult to drain.
RdB2 – Rarden silt loam, 2 to 6 percent slopes, eroded.

This gently sloping, moderately deep, moderately well drained soil is on uplands on the east side of Hoover Reservoir. Most areas are just above a very steep slope on one side. The soil formed in material weathered from acid clay shale. Unweathered shale is at depths of 20 to 40 inches in most areas. In most areas, erosion has removed part of the original surface layer. The present surface layer is a mixture of the remaining original surface layer and clayey upper subsoil. Included with this soil are small areas of somewhat poorly drained Fancher soils near adjacent Fancher soils. Also included are less clayey Centerburg soils near the center of broader areas.

Permeability is slow and runoff is low or medium. The available water capacity is low and the root zone is moderately deep.

There is an erosion hazard when this soil is tilled. Significant erosion has already occurred. Further erosion will result in more clayey subsoil material being mixed into the plow layer. Conservation tillage that leaves crop residues on the soil surface, and the use of forages in the rotation are adapted erosion control practices. Seeding into a cover crop will aid soil-seed contact on the eroded surface. Heavy lime applications are needed for alfalfa. The soil dries out slowly in the spring. Crops can suffer from a shortage of available water in extended dry periods.

RdC2 – Rarden silt loam, 6 to 5 percent slopes, eroded.

This sloping, moderately deep moderately well drained soil is on uplands on the east side of Hoover Reservoir. Most areas are just above a very steep slope on one side. The soil formed in material weathered from acid clay shale. Unweathered shale is at depths of 20 to 40 inches in most areas. In most areas, erosion has removed part of the original surface layer. The present surface layer is a mixture of the remaining original surface layer and the clayey subsoil. Included with this soil are small areas of less clayey Centerburg soils near the center of the broader areas.

Permeability is slow and runoff is medium or high. The available water capacity is low and root zone is moderately deep.

There is an erosion hazard when this soil is tilled. Significant erosion has already occurred. Further erosion will result in more clayey subsoil material being mixed into the plow layer. Conservation tillage that leaves crop residues on the soil surface and the use of forages in the rotation are adapted erosion control practices. Leaving grass strips in shallow natural drainage courses across areas of this soil will retard the lengthening of gullies from adjacent steep areas. No-till seeding methods will reduce erosion when new forage seedings are made. Seeding into a cover crop will improve soil-seed contact on the eroded surface. Heavy lime applications are needed for alfalfa. The soil dries out slowly in the spring. Crops can suffer from shortage of available water in extended dry periods.
RdF2 – Rarden silt loam, 0 to 5 percent slopes, eroded.

This very steep, moderately deep, moderately well drained soil is on the side slopes of valleys cut into shale bedrock on the east side of Hoover Reservoir. It formed in material weathered from shale. Hard shale is at 20 to 40 inches in most areas, but it is shallower in many places, and there are some shale outcrops. Also included with this soil are small areas of well-drained Loudonville soils at the top of the slope.

Permeability is moderately slow and runoff is very high. The available moisture capacity is low, and root zone is moderately deep.

This soil is too steep to be used for crops or improved pasture. Its best uses are as woodland and wildlife habitat. Many valuable tree species are adapted. Slope limits some woodland operation.

RoA – Rossburg silt loam, 0 to 2 percent slopes, occasionally flooded.

This nearly level, very deep, dark colored, well-drained soil is on flood plains. It formed in recent alluvium. Included with this soil are small areas of lighter colored Gallman soils that do not flood on higher areas in the eastern part of the county. Also included are small areas of lighter colored Scioto soils that rarely flood on higher areas in the western of the county. Also included are small areas of very poorly drained Sloan soils in old channels.

Permeability is moderate and runoff is negligible. The available water capacity is high and the root zone is very deep.

This soil is very well suited to crops. There is little erosion, and natural drainage is adequate. The organic matter content is high and tilth is good. There is a hazard of flood damage to crops, especially in the early spring. Most areas flood occasionally for brief periods during the growing season. Forages and winter grains are more likely to be damaged by flooding than corn or soybeans.

RsA – Rossburg-Sloan complex, 0 to 2 percent slopes, occasionally flooded.

These nearly level, very deep, dark colored well drained and very poorly drained soils are on flood plains. They formed in recent alluvium. Rossburg soils are on the highest part of the flood plain nearest the stream. Sloan soils are on the lowest part of the flood plain and in old stream channels. These soils occur so closely together that they cannot be mapped separately on these narrow flood plains. Included with these soils are small areas of light colored, well-drained Gallman soils on higher areas that do not
flood. Also included are small areas of light colored, moderately well drained Lobdell soils on alluvial fans that contain more sand and rock fragments.

Permeability is moderate for the Rossburg soil and moderate or moderately slow for the Sloan soil. Surface runoff is negligible. The available water capacity is high. The root zone is very deep for the Rossburg soil and deep for the Sloan soil.

These soils occur on narrow winding flood plains and though the Rossburg soil is better suited to crops than the wetter Sloan soil, many of these flood plains are not cropped. Flooding on both soils plus lack of suitable subsurface drainage outlets on the Sloan soil is why many areas are in permanent pasture or woods.

**ScA – Scioto silt loam, 0 to 2 percent slopes.**

This nearly level, very deep, well-drained soil is on terraces. It formed in calcareous loamy outwash with increasing amounts of limestone gravel, cobbles and stones with depth. Included in mapping are small areas of the moderately well drained Glynwood soils near adjacent steeper slopes to the uplands.

Permeability is moderate or moderately slow in the subsoil, and moderately rapid or rapid in the substratum. Surface runoff is very low. The available water capacity is low. The root zone is moderately deep or deep.

This soil is suited to intensive cropping. There is little hazard of erosion on the nearly level slopes. Natural drainage is adequate. Shortages of available water are common, and are the primary limitation for crops. Conservation tillage that leaves crop residue on the soil surface is a well-adapted water conserving practice. It also reduces crusting on the silt loam surface. The soil is potentially irrigable.

**ScB – Scioto silt loam, 2 to 6 percent slopes.**

This gently sloping, very deep, well-drained soil is on terraces and outwash areas. It formed in calcareous loamy outwash with increasing amounts of limestone gravel, cobbles and stones with depth. Included with this soil are small areas of moderately well drained Glynwood soils near adjacent steeper slopes to the uplands.

Permeability is moderate or moderately slow in the subsoil and moderately rapid or rapid in the substratum. Surface runoff is low or very low. The available water capacity is low. The root zone is moderately deep or deep.

There is an erosion hazard when this soil is tilled. Erosion reduces the depth to grave, cobbles and stones, resulting in reduction in the already limited available water supply. Conservation tillage that leaves crop residue on the soil surface is a well-adapted erosion control practice that also aids in moisture conservation. The use of cover crops and cross slope cultivation will also reduce erosion. Crops can be expected to suffer
from occasional shortages of available water in most years. Leaving crop residue on the soil surface conserves moisture by reducing evaporation. The soil is potentially irrigable.

**SfA – Scioto silt loam, 0 to 2 percent slopes, rarely flooded.**

This nearly level, very deep, well-drained soils, is on low terraces that rarely flood along the Scioto River. It formed in calcareous loamy outwash. Include with this soil are small areas of the dark colored occasionally flooded Rossburg soils nearer the Scioto River.

Permeability is moderate or moderately slow in the subsoil and moderately rapid or rapid in the substratum. Surface runoff is negligible. The available water capacity is low. The root zone is moderately deep or deep.

The soil is suited to intensive cropping. There is little hazard of erosion on the nearly level slopes. Natural drainage is adequate. Shortages of available water are common, and are the primary limitation for crops. Conservation tillage that leaves crop residue on the soil surface is a well-adapted water conserving practice. The soil is potentially irrigable.

**SdC2 – Scioto silty clay loam, 6 to 12 percent slopes, eroded**

This strongly sloping, very deep, well-drained soil is on the short slopes that separate terrace and flood plain. It is also on short slopes in outwash areas and on kames. Erosion has removed part of the original surface layer and the clayey upper subsoil. The soil formed in the calcareous loamy outwash with increasing amounts of limestone gravel, cobbles and stones with depth. Included with this soil are small areas of very poorly drained Millgrove soils in depressions on outwash plains. A few areas are severely eroded.

Permeability is moderate or moderately slow in the subsoil and moderately rapid or rapid in the substratum. Surface runoff is low or medium and available water capacity is low. The root zone is moderately deep or deep.

There is an erosion hazard when this soil is tilled. Significant erosion losses have already occurred. The soil has poorer tilth and a lower available moisture capacity than it did originally. Erosion reduces the depth to gravel cobbles and stones, further reducing the already limited supply of available moisture. Conservation tillage that leaves crop residue on the soil surface will reduce erosion and at the same time aid in moisture conservation. Narrow strips of the soil can be left in sod or planted to trees. Crops can be expected to suffer from a shortage of available water in most years. Making no-till seedings into a cover crop will improve seed-soil contact on the eroded surface.
SgA – Shoals silt loam, 0 to 2 percent slopes, occasionally flooded

This nearly level, very deep, somewhat poorly drained soil is on flood plains. It formed in recent alluvium. Included with this soil are small areas of the dark colored, very poorly drained Sloan soils in old channels. Also included are small areas of moderately well drained Lobdell soils near the stream.

Permeability is moderate and surface runoff is negligible. All areas are subject to flooding and some remain ponded after flood- waters recede. The available water capacity is high. The root zone is moderately deep to deep.

This soil has wetness and flooding hazards that limit its suitability for crops. The water table is high in the winter and spring, and periods of excessive wetness extend well into the growing season. Subsurface drains are effective in lowering the water table if they are properly outletted. In many areas, good outlets are not available because the soil is only a few feet above the level of a nearby stream. Shallow surface drains can be used to remove ponded flood- water. There is a hazard of flood damage to crops and drainage systems, especially in the early spring. All areas of the soil are subject to flooding, but the duration and frequency differs considerably from areas to area. The wider areas are productive when drained and protected from flooding. Some areas are so narrow and cut up by old channels that cultivation is impractical. Such areas are in bluegrass pasture or woodland.

SkA – Sloan silt loam, 0 to 2 percent slopes, occasionally flooded.

This nearly level, very deep, dark colored very poorly drained soil is in low areas on flood plains. It formed in recent alluvium. Included with this soil are small areas of lighter colored, moderately well drained Lobdell soils near the stream.

Permeability is moderately slow or moderate and surface runoff is negligible. All areas are subject to flooding, and may remain ponded after floodwaters recede. Available water capacity is high. The root zone is deep as the water table depth, which may be deep in late summer and fall.

The natural wetness of this soil limits its use for crops. The water table is high well into the growing season, and some areas are subject to ponding. Good outlets for subsurface drains are not available in many areas because the soil surface is so low in relation to the stream elevation. Shallow surface drains can be used to remove ponded floodwater. Crops and drainage systems are subject to flood damage. Excessive wetness and flooding are less likely to damage corn and soybeans than forages and winter grains. The wider areas are very productive when adequately drained and protected from flooding. Tilling at the right moisture content is essential for maintaining good tilth. Some areas are so narrow and cut up with old stream channels that the cost
of drainage is not justified. Such areas are better suited to bluegrass pasture or woodland.

**SnA** – Sloan silt loam, till substratum 0 to 2 percent slopes, occasionally flooded.

This nearly level, very deep, dark colored very poorly drained soil is in low areas on flood plains. It formed in recent alluvium. Included with this soil are small areas of Millgrove soils on low terraces that rarely flood. Also included are small areas of lighter colored, somewhat poorly drained Shoals soils near the stream.

Permeability is moderately slow or moderate and surface runoff is negligible. All areas are subject to flooding, and may remain ponded after floodwaters recede. Available water capacity is high. The root zone is as deep as the water table depth, which may be deep in late summer and fall.

The natural wetness of this soil limits its use for crops. The water table is high well into the growing season, and some areas are subject to ponding. Good outlets for subsurface drains are not available in many areas because the soil surface is slow in relation to the stream elevation. Shallow surface drains can be used to remove ponded floodwater. Crops and drainage systems are subject to flood damage. Excessive wetness and flooding are less likely to damage corn and soybeans than forages and winter grains. The wider areas are very productive when adequately drained and protected from flooding. Tilling at the right moisture content is essential for maintaining good tilth. Some areas are so narrow and cut up with old stream channels that the cost of drainage is not justified. Such areas are better suited to bluegrass pasture and woodland.

**SoA** – Sloan silty clay loam, till substratum, 0 to 2 percent slopes, occasionally flooded.

This nearly level, very deep, dark colored very poorly drained soil is in low areas on flood plains. It formed in recent alluvium. Included with this soil are small areas of Pewamo soils that do not flood. Also included are small areas of lighter colored somewhat poorly drained Shoals soils near the stream.

Permeability is moderately slow or moderate and surface runoff is negligible. All areas are subject to flooding, and may remain ponded after floodwaters recede. Available water capacity is high. The root zone is as deep as the water table depth, which may be deep in late summer and fall.

The natural wetness of this soil limits its use for crops. The water table is high well into the growing season, and some areas are subject to ponding. Good outlets for subsurface drains are not available in many areas because the soil surface is so low in
relation to the stream elevation. Shallow surface drains can be used to remove ponded floodwater. Crops and drainage systems are subject to flood damage. Excessive wetness and flooding are less likely to damage corn and soybeans than forages and winter grains. The wider areas are very productive when adequately drained and protected from flooding. Tilling at the right moisture content is essential for maintaining good tilth. Some areas are so narrow and cut up with old stream channels that the cost of drainage is not justified. Such areas are better suited to bluegrass pasture and woodland.

**SsA – Smothers silt loam, 0 to 2 percent slopes.**

This nearly level, moderately deep, somewhat poorly drained soil is on upland flats east of Hoover Reservoir in the southeaster part of the county. It formed in 20 to 40 inches of medium lime clay loam glacial till over hard sandstone bedrock. Included with this soil are small areas of dark colored, very deep, very poorly drained Pewamo soils in depressions.

Permeability is slow. Surface runoff is very low or low. The available water capacity is moderate. The root zone is moderately deep.

Wetness is the major limitation for crops on this soil. The soil is saturated well into the growing season if not drained. Depth to hard sandstone limits the use of regular ditching equipment.

**SsB – Smothers silt loam, 2 to 4 percent slopes.**

This gently sloping, moderately deep, somewhat poorly drained soil is on upland slopes east of Hoover reservoir in the southeastern part of the county. It formed in 20 to 40 inches of medium lime clay loam glacial till over hard sandstone bedrock. Included with this soil are small areas of well-drained Loudonville soils on higher areas and near steeper lower slopes. Also included are small areas of dark colored, very deep, very poorly drained Pewamo soils in depressions.

Permeability is slow. Surface runoff is low. The available water capacity is moderate. The root zone is moderately deep.

Wetness is the major limitation for crops on this soil. The soil is saturated well into the growing season if not drained. Depth to hard sandstone limits the use of regular ditching equipment.
StA – Stone silty clay loam, 0 to 2 percent slopes.

This nearly level, deep, dark colored somewhat poorly drained soil is on abandoned bedrock controlled stream terraces in the western part of the county. It formed in 40 to 60 inches of high lime glacial till, outwash and residuum from limestone over limestone bedrock. Included with this soil are small areas of very deep, very poorly drained Millgrove soils in depressions near higher steeper slopes. Also included are small areas or ridges of limestone bedrock less than 40 inches below the soil surface.

Permeability is moderately slow in the upper subsoil and moderate to moderately rapid in the lower subsoil and substratum. The available water capacity is low. The root zone is moderately deep and surface runoff is low.

This soil has a wetness hazard that must be corrected before crops can be grown successfully. The water table is within a foot of the surface for extended periods in the winter and spring. Some included areas are ponded. Periods of excessive wetness extend well into the growing season. Hard limestone bedrock at 40 to 60 inches may interfere with installation of subsurface drains in many areas. Subsurface drains are needed in areas where subsurface drains cannot be installed. The soil is productive when adequately drained. Tilling at the right moisture content is essential for good tilth.

SuA – Stone silty loam, 0 to 2 percent slopes, rarely flooded.

This nearly level, deep, dark colored somewhat poorly drained soil is on abandoned bedrock controlled stream terraces in the western part of the county along the Scioto River near Prospect. It formed in 40 to 60 inches of high lime glacial till over outwash and residuum from limestone over limestone bedrock. Slope is 0 to 2 percent. Included with this soil are small areas of very deep, very poorly drained Millgrove soils in depressions near higher, steeper slopes. Also included are small areas of lighter colored, well-drained Scioto soils on high areas.

Permeability is moderately slow in the upper subsoil and moderate or moderately rapid in the lower subsoil and substratum. The available water capacity is low. The root zone is moderately deep, and surface runoff is low.

This soil has a wetness hazard that must be corrected before crops can be grown successfully. The water table is within a foot of the surface for extended periods in the winter and spring. Some included areas are ponded. Periods of excessive wetness extend well into the growing season. Hard limestone bedrock at 40 to 60 inches may interfere with installation of subsurface drains cannot be installed. The soil is productive when adequately drained. Tilling at the right moisture content is essential for good tilth.
**UdB** – Udorthentes, clayey-urban land complex, undulating.

This soil mapping unit consists of Udorthents, clayey-areas previously mapped as nearly level Pewamo or Condit soils in depressions and drainage ways that have been covered with soil material 2 to 10 feet thick. The soil material was excavated to a depth of 2 to 10 feet from areas previously mapped as nearly level to gently sloping Bennington or mapped as nearly level to gently sloping Bennington or Blount soils and gently sloping to strongly sloping Cardington, Centerburg or Glywood soils. Calcareous glacial till is exposed at the surface of excavated areas. Urban land-streets, parking lots, buildings and buried structures such as pipe lines, sewer pipes, storm drains, tanks and other utilities. Included with this soil-mapping unit are small areas of Bennington, Blount, Cardington, Centerburg, Glywood and Pewamo soils in undisturbed areas mostly near the perimeter of these areas or in undisturbed natural drainage ways.

These areas are generally unsuited to crops and pasture. Tree species tolerant of a wide variety of soil-texture, reaction and moisture conditions should be chosen for planting.

**Uc** – Udorthente.

This soil-mapping unit consists of areas from which soil material has been excavated or filled for road building, levees, and other construction. Commonly these areas are rectangular to very long and narrow. Most of the soil material is clay loam glacial till.

These areas are poorly suited to crops. The side slopes are very erosive, and gullies can easily start. These slopes should be seeded to grass permanently. The bottoms of excavated areas are well below water table level and are wet or ponded much of the time. Outlets for drains commonly are not available. These areas are best suited as habitat for wetland wildlife.

**Up** – Udorthentes – Pits complex.

This soil-mapping unit consists of Udorthents-areas previously mapped as Glynwood and Milton soils where limestone has been quarried. Piles of overburden contain natural soils and limestone quarry waste products such as impure limestone layers. Pits-areas sometimes partially filled with water that is often called a Quarry. Included are small areas of Glynwood and Milton soils in the western part of the county where limestone has been quarried. Included are small areas of Bennington, Cardington and Centerburg soils in the eastern part of the county where shale or sandstone has been quarried.

Tree species that can tolerate drought and ponding may be suitable for planting.