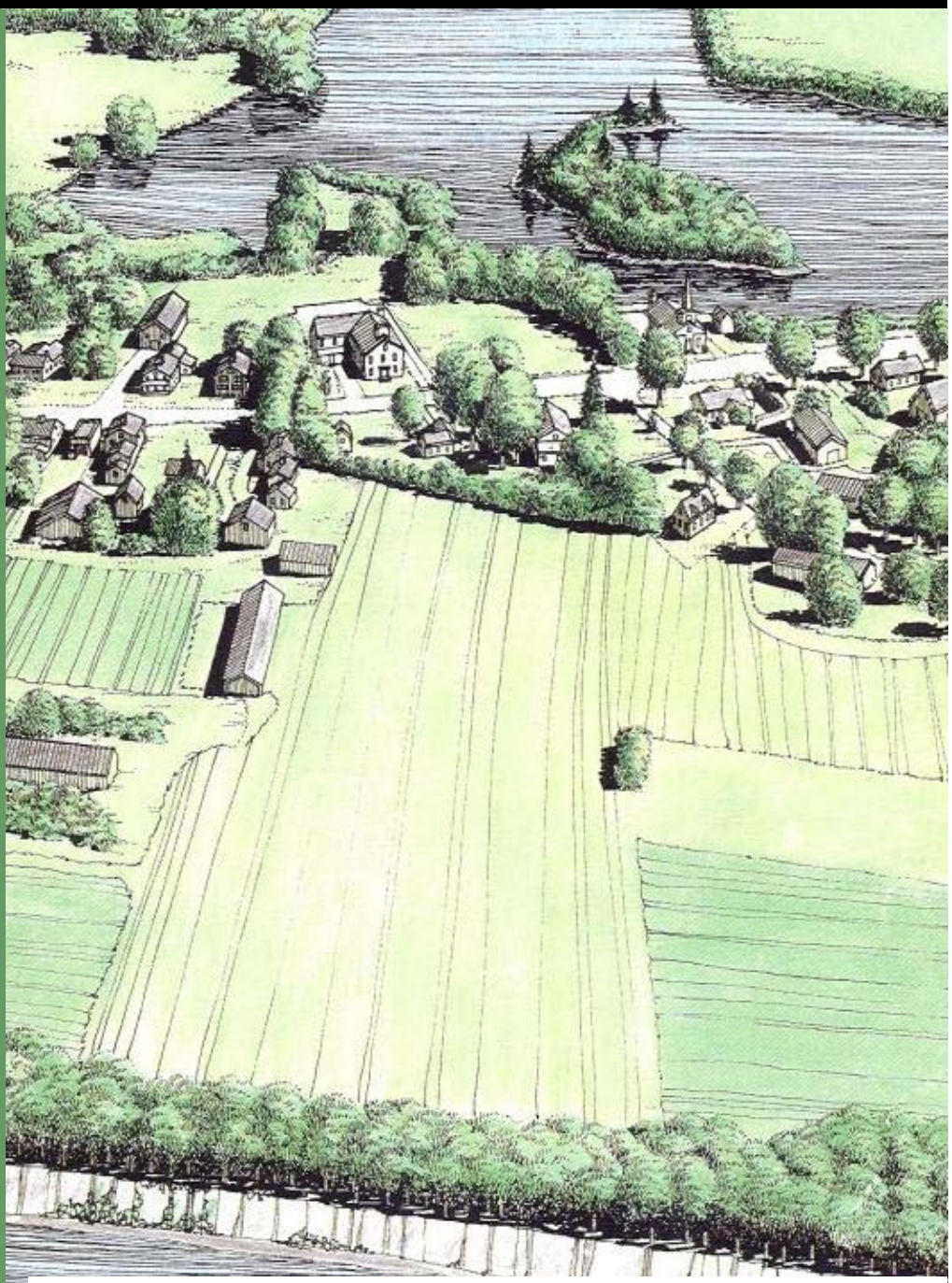
County of Union

Subdivision & Land Development Ordinance



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UNION COUNTY

SUBDIVISION AND LAND DEVELOPMENT ORDINANCE

ORDINANCE NUMBER 2003-3
AMENDED BY ORDINANCE 2013-1 (March 2013)

Prepared For

THE UNION COUNTY BOARD OF COMMISSIONERS

By

THE UNION COUNTY PLANNING COMMISSION

COUNTY OF UNION
ORDINANCE NUMBER 2013-1

AN ORDINANCE OF THE COUNTY OF UNION, PENNSYLVANIA, AMENDING ORDINANCE NUMBER 2003-3 REGULATING THE SUBDIVISION AND DEVELOPMENT OF LAND AND PROVIDING FOR RULES AND REGULATIONS THEREOF BY AMENDING ARTICLE I – GENERAL PROVISIONS; ARTICLE II-DEFINITIONS; ARTICLE III-PLAN PROCESSING PROCEDURES; ARTICLE IV–PLAN REQUIREMENTS; ARTICLE V – DESIGN STANDARDS; ARTICLE VI – SPECIAL SUBDIVISION & LAND DEVELOPMENT REQUIREMENTS; ARTICLE VII – IMPROVEMENTS; ARTICLE VIII - ADMINISTRATION AND ENFORCEMENT; APPENDIX A – PLAN CHECKLISTS; APPENDIX G – IMPROVEMENT GUARANTY/DEVELOPER'S AGREEMENT; APPENDIX Q – STORMWATER PERFORMANCE STANDARDS MAPS; AND APPENDIX T – EXAMPLE LETTER OF CREDIT.

Be it enacted and ordained by the Board of Commissioners of the County of Union, Pennsylvania, and it is hereby enacted and ordained by the authority of the same as follows:

Section 1: Article I –General Provisions Amendments

Section 106 *Application* is amended to add: "As such all persons are required to submit to the Union County Planning Commission a subdivision and/or land development plan for any activity that constitutes a subdivision or land development as defined in this ordinance."

Section 2: Article II –Definitions Amendments

Section 202 *Definitions* is amended to include the following definitions:

Incidental – Occurring as a minor accompaniment. Liable to occur in consequence of or in connection with another.

Subordinate – Of lesser importance or rank operating under the control or authority of another.

Section 3: Article III Amendments

Section 306.F is amended to add this statement to the end of the first sentence: or the applicant(s) voluntarily withdraws the plan from consideration.

Section 307.F is amended to add this statement to the end of the first sentence: or the applicant(s) voluntarily withdraws the plan from consideration.

Section 4: Article IV-Plan Requirements Amendments

Section 403.A.2.d is amended to delete "phone number".

Section 403.A.12 is amended to be deleted entirely.

Section 403.C.6 is amended to delete "and sight distances".

Section 403.D.25 is amended to be deleted entirely.

Section 404.A.2.d is amended to delete “phone number”.

Section 404.A.12 is amended to be deleted entirely.

Section 404.C.6 is amended to delete “along with sight distances”.

Section 404.D.14 is amended to be replaced with the following:

> “A fully executed Improvements Guaranty Agreement, including required financial surety (i.e. irrevocable letter of credit), that sets forth the responsibilities of all parties regarding the installation and inspection of the required improvements as per Article VII of this Ordinance. See also Appendix G.”

Section 404.D.15 is amended to be deleted entirely.

Section 405.A.2.d is amended to delete “phone number”.

Section 405.A.12 is amended to be deleted entirely.

Section 405.B.6 is amended to be deleted entirely.

Section 405.C.6 is amended to delete “along with sight distances”.

Section 406.A.2.d is amended to delete “phone number”.

Section 406.A.12 is amended to be deleted entirely.

Section 5: Article V – Design Standards Amendments

Section 508.E - Stormwater Facility Easements is amended to read as follows:

> “Easements shall be reserved where stormwater drainage facilities exist or proposed and shall have a minimum width of 15 feet extending from the top of bank of any basin, channel, or berm. They shall be adequately designed to provide an area for the collection and discharge of water, the maintenance, repair, and reconstruction of the drainage facilities, the passage of machinery for such work, and provide ingress and egress form a public right-of-way. The easement shall remain unobstructed at all times and excavation, the placing of fill, buildings or other permanent structures or any other alterations that may adversely affect the flow of stormwater within any portion of the easement shall be prohibited.”

Section 509.J is amended to have the last sentence read as follows:

> **“**Direct individual driveway access to SR 0015, SR 0045, SR 0104, SR 0304, and SR 0192 shall be prohibited except where the Commission determines no feasible alternative exists for access, see Section 516.A.6.”

Section 512 is amended to delete Table 512-1- Design Standards and substitute in lieu thereof the following new Table 512-1-Local Road Design Standards:

TABLE 512-1 – LOCAL ROAD DESIGN STANDARDS

CRITERIA/CONTEXT (See PennDOT Pub 70 M)	**Rural**	**Suburban Neighborhood**	**Town/Village**	**Private**
DESIGN SPEED	25 – 30 MPH	20-25 MPH	20-25 MPH	20-25 MPH
TRAVEL LANES	2	2	2	2
MINIMUM VERTICAL GRADE[1]	0.5%	0.5%	0.5%	0.5%
MAXIMUM VERTICLAL GRADE[2]	12%	12%	12%	12%
RIGHT-OF-WAY WIDTH (FEET)	50	50	50	50
CARTWAY WIDTH (FEET)	9	10	10	9
SHOULDER WIDTH (FEET)[3]	2	4	2	2
PARKING LANE WIDTH (FEET)	NA	8	8	NA
MINIMUM CROSS SLOPE	2%	2%	2%	2%
MAXIMUM CROSS SLOPE	6%	6%	6%	8%
HORIZONTAL CURVATURE (FEET)[3]	150	150	150	150
REVERSE CURVE OFFSET (FEET)	100	100	100	100
VERTICAL CURVES (FEET)	See (4)	See (4)	See (4)	See (4)

[1] – Streets constructed at minimum grades of 0.5% shall have a 3% cross slope minimum.
[2] –Maximum vertical grades in commercial and industrial areas shall not exceed 8%.
[3] –Shoulders in streets with curbs shall be constructed to cartway standards.
[4] – All sight distances shall be in accordance with the Commonwealth of Pennsylvania, Title 67, Transportation, Chapter 441 as from time to time reenacted and amended.

Section 512 is amended to delete Table 512-3-Road & Parking Area Construction Standards and substitute in lieu thereof the following new Table 512-3- Road & Parking Area Construction Standards:

TABLE 512-3 – ROAD & PARKING AREA CONSTRUCTION STANDARDS

	TYPE[1]			
MATERIAL	**LOCAL**	**PRIVATE[2]**	**COMMERCIAL**	**INDUSTRIAL**
WEARING COURSE Superpave Asphalt Mixture Design, 9.5mm, PG 64-22, 0.0 to 0.3 million ESALS, SRL L[3]	1.5"	1.5"	1.5"	1.5"
BASE COURSE Superpave Asphalt Mixture Design, 25mm, PG 64-22, 0.0 to 0.3 ESAL's[4]	4"	3"	4.5"	4.5"
BINDER COURSE Superpave Ashpalt Mixture Design, 25 mm, PG 64-22, 0.3 to 3.0 million ESAL's	-	-	-	2"
COMPACTED 2A AGGREGATE SUBBASE	6"	6"	8"	8"

1 – Arterial and Collector Streets shall be constructed to PennDOT standards and approved by the Commission Engineer.
2 – Alternates as per PennDOT Publication 70M may be considered for private streets serving ≤5 lots and <100 ADT.
3 – Commercial and Industrial is 0.3 to 3.0 million ESAL's, SRL M
4 - Commercial and Industrial is 0.3 to 3.0 million ESAL's

Section 514.F.2 is amended to delete *"in Table 514-2*".

Section 514.F is amended to delete Table 514-2 – Street Tree Species and Site Selection entirely.

Section 516.A.6 is amended to delete the current text and replace it with the following:

> **"**Direct individual driveway access to SR 0015, SR 0045, SR 0104, SR 0304, and SR 0192 is highly discouraged and in many cases will be prohibited. However on a case-by-case basis direct access may be allowed, if in the sole discretion of the Commission: no other feasible access is available, the proposed driveway complies with Table 516-1 of this Ordinance, has adequate sight distance in accordance with Section 516.C.8 of this Ordinance, and unsafe conditions are not otherwise created."

Section 516 is amended to delete Table 516-1- Driveway Requirements and substitute in lieu thereof the following new Table 516-1-Driveway Requirements:

TABLE 516-1 - DRIVEWAY REQUIREMENTS

STREET DESIGNATION	MIN. DISTANCE BETWEEN DRIVEWAYS	MAX. DRIVEWAYS PER LOT	MINMUM SETBACK	
			INTERSECTIONS	PROPERTY LINES
LIMITED ACCESS HIGHWAY OR PRINCIPAL ARTERIAL	600'	1	600'	10'
MINOR ARTERIAL	400'	1	400'	10'
MAJOR COLLECTOR	200'	1	200'	10'
LOCAL	100'	1	100'	10'

Section 517.B is amended to delete the last sentence ("In such cases the Commission will require that the initial 50 feet of exit and entrance lanes be paved for the same") and substitute in lieu thereof the following: "In such cases the area within the street right of way or a length of 15 feet, whichever is greater, of exit and entrance lanes shall be paved. "

Section 518.A is amended to add:

13. Landscaping and screening for agricultural uses shall be decided by Department Staff on a case-by-case basis. Staff may consult the Commission as needed.

Section 520.A.1 is amended to be deleted and replaced in lieu thereof the following:

1. All suddivisions and land developments shall be provided with sanitary sewage facilities in accordance with the official Act 537 Municipal Sewage Facilities Plan and the laws of the Commonwealth of Pennsylvania.

Section 520.A.3 is amended to delete "and all related fees have been paid".

Section 520.B is amended to delete <u>Public Sanitary Sewer and</u> substitute in lieu thereof the following:

B. Public Sanitary Sewer. Where connection to public sewer is proposed, the applicant shall obtain all required sewage planning approvals from the municipality and the PA DEP, and a letter from the sewer/municipal authority stating the following:

Section 520.B.1 is amended to be deleted entirely.

Section 520.C.2 is amended to be deleted and substitute in lieu thereof the following:

2. All required sewage planning approvals from the municipality and the PA DEP.

Section 523 Stormwater Management is amended to add a new subsection 523.A.a-Exemptions as follows:

A.a **Exemptions** [Added by Ordinance No. 2012_ amending Ordinance 2003-3]

1. Any regulated activity on parcels generating less than 5,000 square feet of total impervious area may be granted an exemption from certain provisions of this Section. This criterion shall apply to total development even if development is to take place in phases and the date of December 17th, 2003 shall be the starting point from which to consider tracts as ”parent tracts” in which future subdivisions and land developments respective impervious area computations shall be cumulatively considered.

2. Exemptions shall be at the discretion of the Union County Planning Commission based upon a review and recommendation from the Commission Engineer that considers site conditions, topography, soils, and other factors deemed appropriate.

3. Prior to granting an exemption, the Applicant must provide documentation that the increased flows from the site leaves the site in the same manner as the pre-development condition, and that there will be no adverse impacts to properties along the path of flow(s), or that the increased flow(s) will reach a natural watercourse or an existing stormwater management structure before adversely impacting any property along the path of flow(s). This documentation must include a signed statement by the landowner indicating the total impervious area constructed since December 17th, 2003.

4. If a drainage problem is documented or known to exist downstream of, or expected from the proposed subdivision or land development activity, then an exemption will not be granted and a stormwater management plan shall be required.

5. Under no circumstances shall an exemption be granted to the provisions contained in Sections 523.E, 523.F, and 523.G.

6. An exemption shall not relieve the Applicant from implementing such measures as are necessary to protect the public health, safety, and property. An exemption shall also not relieve the Applicant from providing adequate stormwater management to meet the purpose of this Ordinance; however, a Stormwater Management Plan will not have to be submitted.

Section 523.B.5 is amended to delete the reference to <u>Pennsylvania Handbook of Best Management Practices for Developing Areas</u> and substitute in lieu thereof <u>Pennsylvania Stormwater Best Management Practices Manual.</u>

Section 523.B is amended to add Subsection 523.B.18 as follows:

18. The designer shall consider that the runoff from proposed sites graded to the subsoil will not have the same runoff conditions as the site under existing conditions, even after

topsoil and seeding is placed. The designer shall increase the proposed condition “CN” or “C” to better reflect the proposed soil conditions.

Section 523.B is amended to add Subsection 518.B.19 as follows:

19. Infiltration testing shall be performed in accordance with the soil infiltration testing procedures in accordance with Appendix C of the Pennsylvania Stormwater Best Management Practices Manual.

Section 523.B is amended to add Subsection 518.B.20 as follows:

20. Plans shall contain a statement, signed by the landowner, acknowledging the stormwater management system to be a permanent fixture that can be altered or removed only after approval of a revised plan by the Union County Planning Commission.

Section 523.C.3 is amended to be deleted and substitute in lieu thereof the following:

3. For predevelopment flow rate determinations using the Soil Cover Complex Method, it shall be assumed that all undeveloped and pervious land shall be considered as “meadow” in good condition, unless the natural ground cover generates a lower curve number or Rational “C” value (i.e. forest) as listed in Appendix P-1 of this Ordinance. For predevelopment flow rate determination using the Rational Method, it shall be assumed that all undeveloped and pervious land shall be considered “forest” as listed in Appendix P-2 of this Ordinance.

Section 523.G.5 is amended to delete “[Reserved for performance standards to be determined by a West Branch Susquehanna River Act 167 Watershed Plan]” and insert the following in lieu thereof:

5. West Branch Susquehanna River Watershed – The West Branch Susquehanna River Watershed has a 100% Release Rate for the percentage of pre-development peak rate of runoff that can be discharged from an outfall on the site after development for all but three subareas. Those subareas without a 100% percent release rate are: Subarea 3-37 at 90%, Subarea 3-38 at 60%, and Subarea 5-3 at a 50% Release Rate Percentage.

Section 523 J Municipal Stormwater Maintenance Fund is amended to be deleted entirely.

Section 530 Standards for Protection from Wildfires is amended to be deleted entirely.

Section 6: Article VI –Special Subdivisions and Land Developments Requirements Amendments

Section 602.A.5 is amended to delete “The minimum size, dimensions, and separation from other sites of each camping or recreational vehicle space shall be as follows:” and insert in lieu thereof:

5. The size and dimensions of individual camping and recreational vehicle sites shall be designed to adequately accommodate the intended use and should provide sufficient separation distance from adjacent sites.

Section 602.A.5.(a) is deleted entirely.

Section 602.A.5.(b) is deleted entirely.

Section 602.A.5.(c) is deleted entirely.

Section 603 Wireless Telecommunication Facilities is amended to be deleted entirely.

Section 7: Article VII –Improvements Amendments

Section 707.B is amended to be deleted entirely.

Section 711 AS BUILT PLAN is amended to be deleted and substitute in lieu thereof the following new Section 711:

711 AS BUILT PLAN

After Final Plan approval and upon completion of all required improvements, the applicant or developer shall submit, as requested by the Commission, an As Built Plan showing the location, dimension, and elevation of all improvements. As-Built Plans generally will be required when constructed improvements and developed conditions deviate from the originally approved plan. The As Built Plan shall specify all deviations from the previously approved drawings. Five (5) copies of the As Built Plan shall be submitted to the Commission. Depending on the severity of the deviations from the approved plan shown by the As Built Plan a full subdivision and land development plan revision may need to be submitted and approved.

Section 8: Article VIII Administration and Enforcement Amendments

Section 803.C.2 is amended to add “, justification for the modification,” after based.

Section 803.D.4 is amended to add “and will not be contrary to the public interest.” after area.

Section 803.D.5 is amended to be deleted entirely.

Section 9: Appendices Amendments

Appendix A – Plan Checklists are amended accordingly to reflect all the amendments made by this Ordinance as described above.

Appendix G- Developer’s Agreement is amended to delete AGREEMENT Paragraph 1. Bids for Improvements and substitute in lieu thereof the following:

1. Estimated Cost of Improvements – The developer has received and provided the county an estimated cost of improvements certified by the developers professional engineer for the completion of all improvements shown on the approved plan of Phase II of Buffalo Valley Estates as required by the County Ordinances (“the required improvements”). True and correct copies of the estimates, designated as Exhibit A, are attached to and made a part of this Agreement.

Appendix G – Developer’s Agreement AGREEMENT Paragraph 13. Is amended to add “and owner do” after the first word (Developer) in the first sentence.

Appendix R – Stormwater Facilities Maintenance Agreement is amended to add Paragraph 14. as follows:

14. This agreement shall be recorded in the land records of Union County, Pennsylvania, and shall constitute a covenant running with the property and/or an equitable servitude, and shall be binding on the landowner, his administrators, executors, assigns, heirs, and any other successors in interest in perpetuity.

Appendix T – Example Letter of Credit is amended to delete from the last paragraph the following:

"In addition this Credit shall continue in the amount of at least ten percent (10%) of the full amount hereof for a period of one year following release by the Director of the Union County Planning Commission of the balance of the full amount thereof."

Section 10: Table of Contents, Table of Appendices, Cover Pages, and other preliminary pages appearing before Ordinance Article I are amended to correct inconsistencies resulting from the amendments made by this Ordinance.

Section 11: Except as amended by this Ordinance all of the provisions of Ordinance No. 2003-3 enacted December 17, 2003, shall remain in full force and effect.

Section 12: All ordinances or parts of ordinances inconsistent herewith or in conflict with any of the provisions hereof be and the same are hereby repealed to the extent of such inconsistency or conflict.

Section 13: This Ordinance shall become effective immediately upon enactment.

ENACTED AND ORDAINED as an Ordinance of the County of Union, Pennsylvania, this 5th day of March, 2013.

ATTEST:

UNION COUNTY BOARD OF COMMISSIONERS

Diana L. Robinson, Chief Clerk

Preston R. Boop, Chairman

John R. Showers, Vice Chairman

John H. Mathias, Secretary

COMMISSIONERS OF UNION COUNTY

103 SOUTH SECOND STREET - LEWISBURG, PENNSYLVANIA 17837-1996 - 570/524-8686 - FAX: 570/524-8635

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Robert O. Brouse, Jr., *Vice Chairman*
Harry A. VanSickle, *Secretary*

Solicitor
Andrew D. Lyons

County Administrator/Chief Clerk
Patricia P. Nace

ORDINANCE NO. 2003-3

AN ORDINANCE OF THE COUNTY OF UNION, PENNSYLVANIA REGULATING THE SUBDIVISION AND DEVELOPMENT OF LAND AND PROVIDING FOR RULES AND REGULATIONS THEREOF.

WHEREAS, The Pennsylvania Municipalities Planning Code, Act of 1968, P.L. 805, No. 247 as reenacted and amended authorizes the county to orderly plan for future growth and development through the creation of necessary plans and ordinances;

WHEREAS, the County of Union has through a comprehensive planning process, including the official adoption of the Union County Comprehensive Plan and various reports, publications, plans and subsequent amendments thereto, recognized a certain overall planning goal for the county;

WHEREAS, Act 247 gives to each county within the Commonwealth the responsibility for planning and regulation of subdivisions and land developments within its boundaries;

WHEREAS, the Union County Subdivision and Land Development Ordinance is intended to cause subdivisions and land developments to conform with or to provide for such planning goals;

WHEREAS, subdivision and land development ordinances promulgated under Act 247 are essential in maintaining accurate land records within the county;

WHEREAS, the Union County Planning Commission is the official advisory planning agency to the Board of Commissioners and the Planning Commission prepared and delivered under recommendation this Ordinance; and

WHEREAS, said ordinance includes provisions for the following:

- The submittal, review, processing and recording of subdivision and land development plans;

- Required information to be included in such plans;

- Design standards governing the layout of such plans relative to streets, easements, rights-of-way, reservation for public grounds, and other facilities and uses;

The subdivision, development and use of lands subject to environmental or other hazards;

- Establishment of standards for the installation and improvement of facilities in accordance with county and municipal requirements;

- Subdivision and development of land not intended for immediate use;

Conformance with the county and local comprehensive plans;

- Adequate utility services; and
- Other requirements to ensure the safe and proper subdivision and development of land to protect the health, safety and general welfare of residents in accordance with the requirements the Act of 1968, P.L. 805, No. 247 as reenacted and amended.

ENACTED AND ORDAINED into an Ordinance of the County of Union, Pennsylvania, by the Board of County Commissioners this 17th day of December, 2003. The effective date of this Ordinance shall be December 17, 2003.

ATTEST:

Patricia P. Nace, Chief Clerk

UNION COUNTY BOARD OF COMMISSIONERS

W. Max Bossert, Chairman

Robert O. Brouse, Jr., Vice Chairman

Harry A. VanSickle, Secretary

PREFACE

The first Subdivision and Land Development Ordinance for Union County was adopted in 1969 and has since been amended on several occasions. It has been more than a decade since it was substantially revised in 1990. The Union County Comprehensive Plan, adopted in 1996 by the Union County Commissioners, instructed the Union County Planning Commission to update the ordinance. The purpose of this ordinance, like that of any subdivision and land development regulation, is to protect the health, safety and general welfare of the public. The ordinance establishes a systematic method for how land can be subdivided and developed and promotes the orderly continuation of the county land records.

After the County Commissioners adopt this Ordinance, State Law requires that all subdivision and land development plans must be submitted to the Union County Planning Commission for the Commission's review and action. If the municipality in which the plan is located also has a municipal subdivision and land development ordinance, then the review and recommendations of the Union County Planning Commission are only considered to be advisory, and the municipality has the sole power to approve or disapprove a plan. If a municipality does not have a subdivision and land development ordinance, the Union County Planning Commission does have the authority to review and approve, disapprove or to establish conditions for the approval of such plans.

The Union County Planning Commission takes this responsibility very seriously. It is the objective of the Commission to expedite all reviews, to minimize delays, and to work in a cooperative manner with landowners and developers, while at the same time safeguarding the public health, safety and welfare of the County.

Early Consultation

While the Union County Planning Commission will confer, advise and cooperate with the Applicant, it will not do the work of preparing the subdivision or land development plan. Best results will be obtained when the Applicant retains qualified professionals to prepare the subdivision or land development plan: a planner, landscape architect, engineer, surveyor, or combination of these professionals. It will be necessary to have an engineer, land surveyor or landscape architect professionally licensed in Pennsylvania involved in the planning process since one or more of these individuals will be required to sign and seal the plan. It is important that the persons engaged have the skills necessary to produce the best design under the given conditions.

Many subdivisions in the County will be relatively simple and may not require extensive review. However, the Applicant is invited and encouraged to contact the staff of the Union County Planning Department informally and to attend a meeting of the Union County Planning Commission with a sketch plan of the land they propose to subdivide or develop. Where stormwater management, road construction and other improvements are planned, it is also advisable to discuss the sketch with the Commission Engineer. The best time for this visit is before the land has been finally acquired or at least before significant funds are spent for engineering or design. The goal of the County is to furnish the kind of advice a developer can best use at the time that it will be most valuable. Early discussion of a sketch plan can result in significant savings in final engineering and development costs.

The preliminary plan stage of a subdivision is also important. It is the stage when ideas are considered and plans formulated, not after construction begins. It also takes place before final engineering is completed. It requires the coordinated efforts of many agencies, utility companies, and public officials. Therefore, haste is not the solution to long-term subdivision proposals.

Proper consideration of topography and the slopes of a site, and also the size of lots in a subdivision is one of the first considerations to be made. These factors influence the street design, block length, community facilities required, etc. Therefore, in those subdivisions that will not be provided with a public sanitary sewer system, i.e., those that will have on-site septic tanks and absorption fields, the first

step in preparing the preliminary plan is to make necessary soils evaluations and percolation tests of the tract to be subdivided to assure compliance with PA DEP requirements.
If the municipality in which the plan is located has an officially adopted Zoning Ordinance, the plan must also comply with the requirements of that ordinance. Zoning regulates how the land can be used, while subdivision regulates the process for creating lots or developing land. Compliance is required with both ordinances before use of the land.

Other Requirements

The Plan shall also be subject to the requirements of other local, state and federal regulations, including applicable requirements relative to flood plains, wetlands, erosion and sedimentation control, sanitary sewage, utilities and storm drainage, major roads, environmental factors, excavation and fill(s), encroachment of streams and rivers and other possible requirements.

Environmental regulations, as established by the Pennsylvania Department of Environmental Protection (DEP), governing land to be developed or subdivided have become complex and in many cases require considerable review by DEP. Subdivisions and land development plans cannot be approved until such DEP reviews have been completed. It is therefore important that the Applicant contact DEP as early as possible. All requirements of the Union County Conservation District must also be met. To expedite the review by the municipality and the county the Applicant may wish to complete and submit the required DEP Sewage Planning Module to the municipality at the time the subdivision or land development plan is submitted.

All of these requirements are intended to protect the general public and welfare of the county and to forestall problems that may adversely affect all parties involved in the subdivision or land development process. Proper planning and design can avoid many potential problems and can save the developer considerable expense. These will ensure proper development and result in more desirable community growth.

Implementation of the Plan

The subdivision or land development plan must be properly carried out and any required construction must be completed. Planning is judged by the completed project and its value to the community. It is important that all facilities be either properly installed or their completion guaranteed. The completed project should not be a burden on the general tax monies of the governmental entities involved. The result of good planning and good construction is a safer and a more vital community -- a community that is an asset to the county.

This Ordinance establishes necessary design standards and required improvements for various types of subdivisions and land developments. Construction and supervision of improvements must be performed in accordance with local municipal regulations as well as this ordinance. It is the responsibility of the Union County Planning Commission and a local municipality to ensure that all required improvements are inspected and meet local standards.

To Avoid Delays

Consult by telephone, or in person, with both the specific municipality and the staff of the Union County Planning Commission before proceeding with subdivision plans. If on-site sewage disposal facilities are contemplated, consult with DEP for recommendations and also with the local Sewage Enforcement Officer.

Make certain the design of the subdivision meets the minimum design standards required by the Ordinance. Submit plans no later than the prescribed date, if consideration of the plans is expected at the next regularly scheduled meeting of the Union County Planning Commission.

FREQUENTLY ASKED QUESTIONS

1. What is a subdivision?

Generally speaking, it is a division of a tract of land into two or more lots (the total number of lots includes the lot that remains from the division). For example, if you own five acres and want to sell or give an acre to someone you would be doing a subdivision to make the one lot into two.

2. What is a land development?

In general a land development is the improvement of a tract of land involving a non-residential building or a group of two or more residential units on a single lot. For example, the construction of a new convenience store or two or more single-family homes on one lot would be considered a land development. However, the construction of one single family home on an approved and vacant lot of record is not considered a land development.

3. What is a lot of record?

A lot of record is a parcel or tract of land that was legally created and has a deed and associated plot plan or map on file in the office of the Union County Recorder of Deeds. Be advised that some lots recorded in the Recorder of Deeds Office were not created by legal means and could be problematic when you attempt to purchase, subdivide or develop the particular piece of land. If you discover a problem with a deed you should contact an attorney or a professional land surveyor for assistance.

4. Why do we have subdivision and land development ordinances?

An ordinance can reduce detrimental impacts to the surrounding community. For example, most ordinances require that new streets be designed and built in a manner that is safe for future users and will structurally withstand the traffic upon them.

Secondly an ordinance coordinates the provision of services and infrastructure to support the new development. For example, development needs to provide an environmentally safe and healthful method of treating wastewater.

Finally, an ordinance requires that a plan be recorded in the Office of the Recorder of Deeds within 90 days of final approval. Once recorded, it becomes part of the official county land records system. A recorded plan shows where property lines are located and becomes a source of title information, as does the deed.

5. What is the difference between the subdivision and land development ordinance and zoning regulations?

Zoning ordinances regulate the types of uses permitted on a tract of land such as agriculture, commercial, residential and industrial. They tell you how the land can be used. In Union County zoning ordinances are adopted by local townships and boroughs.

A subdivision and land development ordinance regulates how land is divided and improved if it is to host uses that are allowed by the zoning.

For example, zoning may allow your land to be used for housing and might specify a minimum size for the lots plus distances that structures must be set back from property lines and streets. The subdivision and land development regulations determine how stormwater runoff is to be managed, the safest place to locate driveways, whether or not sidewalks are needed, what water supply is available, etc.

6. What is the first thing I should consider when developing or subdividing my land?

There are many things to consider, but one of the most important first steps is to contact your municipal zoning officer to determine how your land is zoned. The zoning officer is appointed by the borough or township to administer the zoning ordinance and will help you understand what types of uses are allowed on your property and what requirements exist under the zoning ordinance.

7. I know how my land is zoned or that a zoning ordinance is not in place. Now I want to move ahead with a subdivision or land development. What should I do next?

At this point you should contact a surveying, engineering or landscape architecture firm to prepare a plan for you. Surveyors, engineers and landscape architects are licensed by the Commonwealth of Pennsylvania to prepare and certify development plans. As licensed professionals, they are charged with designing, preparing, and submitting plans that conform to the applicable regulations.

It is in your best interest to sit down and discuss your plan with your design professional. Together, decide how you want to subdivide or develop your land. Discuss where you want to place new lots and where you want to locate buildings, streets, driveways, etc.

If you or your design professional have any questions you can call or meet with Union County Planning Department staff or the Union County Planning Commission at one of their meetings to discuss your proposal. If you feel confident that you are adequately prepared to proceed, then have your design professional prepare a formal plan and application. The plan should be submitted along with required application fees, forms and other documentation for approval by the Union County Planning Commission.

8. How do I choose a professional to prepare and present my plan?

Ask questions! Basically, you should choose a design professional the same way you would choose any professional like an attorney, accountant or doctor. Does the individual or firm have a lot of experience with the Union County Subdivision and Land Development Ordinance? Are they experienced in the design and development of one- lot subdivisions or large residential and commercial land developments? Will they provide you with a list of references to check out? Do they have good communication skills? Can you expect them to keep you informed throughout the entire process? How soon can they get started and how long will it take them to get a completed plan that meets the ordinance prepared and submitted?

We recommend you take the time to check out design professionals before making a final decision. For ethical reasons the Union County Planning Commission and Planning Department staff cannot recommend a design professional.

9. How much will my subdivision or land development plan cost?

The cost of your plan will vary depending on many factors such as the type of project, site conditions, complexity of issues, amount of time needed by your design professional, etc. Your design professional should be able to provide you with an estimate of the cost of their services. The fees for review by Planning Commission range from $75.00 to $200.00 in base fees plus there is an additional per lot fee of $10.00. In addition you will be required to reimburse the Planning Commission for any costs associated with its consultants reviewing the plan. When engineering detail is involved these fees can easily reach

$500.00 to $1,000.00 and in many cases more. This can vary and is largely dependent upon how well your design professional has addressed and met the requirements of the ordinance. As with most things it is far more economical to be patient and have your design professional submit plans that conform to the ordinance requirements the first time the plan is submitted. Again, a meeting with the Planning Commission or its staff and consultants prior to designing and officially submitting your plan can be well worth the extra time and effort.

10. What happens to my plan after it is submitted to the Union County Planning Commission for approval?

The Planning Commission staff checks to see if the application is complete. All required sets of plans, documentation, and fees must accompany your application. If the application is accepted, the Planning Commission schedules your plan for action. The Planning Commission has a maximum of 90-days to act on your plan under state law; however, the Planning Commission and staff will generally attempt to facilitate a shorter review and approval period. In many cases plans can be approved within 45-60 days; however, timing depends on the complexity of your project and on how well your design professional has prepared the plan in accordance with the ordinance requirements. If your plan lacks sufficient detail, does not address design requirements of the ordinance, or is deficient in any respect, this will delay your approval. In some cases the Planning Commission may be willing to negotiate a time extension to the approval period, or in more severe circumstances may need to disapprove your plan.

Once the plan is reviewed the Planning Commission will approve the plan, approve the plan with conditions, or disapprove the plan. An ***approval*** means your plan meets all requirements of the subdivision and land development ordinance and it can be recorded. A ***conditional approval*** means that your plan is not fully in compliance with the ordinance, but it *"can be brought into compliance"* if it is revised to meet the specified conditions. Before your plan can be recorded, the deficiencies must be corrected and approved by the Planning Commission and staff. **NO** building or sale of lots may take place until those corrections are made and the plan has been recorded. A conditional approval will delay your project until the time all the pending conditions are met. In some cases this can be a few days or a week or as long as several months when other local or state permitting issues need to be resolved. The majority of plans acted on by the Planning Commission receive a conditional approval. ***Disapproval*** means that your plan cannot be approved as submitted because it departs from the ordinance requirements. A disapproved plan cannot be recorded and **NO** building or sale of lots may take place. A new plan must be submitted with appropriate fees if the intention is to proceed with the development.

11. My plan was conditionally approved. What happens next?

Contact your design professional to discuss how you can meet the conditions and how soon the compliance items can be submitted to the Planning Commission for review and approval.

12. My plan was approved and given back to me with the Planning Commission signatures and review and approval stamps affixed. Now what do I do with it?

You should immediately take three sets of your approved plans to the Union County Recorder of Deeds Office (located in the County Courthouse), and have the plans officially recorded. Your plan is not "official" until it is recorded. There are fees associated with having the plans recorded so you may want to contact their office in advance. You have ***90-days to record*** the plans after the Planning Commission approves the plans and returns them to you; however, it is recommended you record the plans right away so you do not forget to do it. If you do not record the plans within the 90-day period the plan automatically becomes ***null and void***, as if it was never approved, and you will encounter legal problems at a point in the future when you try to further develop or sell your property.

13. What does it mean to have my plan recorded?

According to state law and the county ordinance no new lots can be sold until the subdivision plan is recorded in the office of the Union County Recorder of Deeds. Recording the plan places the lot or lots "ON RECORD", meaning that they can legally be divided from the larger tract of land. Once recorded the plan, lots, and associated deeds become part of the county's permanent land record system.

TABLE OF CONTENTS

Article I – General Provisions		**Page 1**
100	Long Title	1
101	Short Title	1
102	Authority	1
103	Authority of Union County Planning Commission	1
104	Purpose	1
105	Jurisdiction	2
106	Application	3
107	Effect of Adoption	3
108	Compatibility with Other Ordinances	4
109	Conflict with Other Ordinances	4
110	Conflict with Private Provisions	4
111	Repealer	4
112	Severability	4
113	Liability Disclaimer	4
114	References	5
115	Amendments	5
116	Effective Date	5
Article II – Definitions		**6**
200	General	6
201	General Terms	6
202	Specific Terms	6
Article III – Plan Processing Procedures		**31**
300	General	31
301	Classification	31
302	Exemptions	32
303	Pre-Application Conference and Review	32
304	Plan Submission Deadlines and Filing Dates	33
305	Sketch Plan	33
306	Preliminary Plans	34
307	Final Plans	37
308	Minor Subdivision and Lot Add-On Plans	40
309	Non-Jurisdictional Plans	41
310	Review by Engineer or Other Qualified Person	43
311	Site Inspections	43
Article IV – Plan Requirements		**44**
400	General	44
401	Sketch Plan	44
402	Drafting Standards	44
403	Preliminary Plans	45
404	Final Plans	50
405	Minor Subdivision Plans	56
406	Lot Additions and Lot Consolidations	60

Article V – General Design Standards **63**

500 General Requirements 63
501 Hazardous Areas 63
502 Planning Consistency 63
503 Blocks 63
504 Lot Standards 64
505 Lot Area Requirements 64
506 Building Setback Lines 65
507 Monuments and Markers 66
508 Easements 66
509 Street System General Arrangement 67
510 Traffic Engineering Report 69
511 Required Right-of-Ways and Cartways 69
512 Street Design Standards 70
513 Street Construction Standards 78
514 Street Improvements 79
515 Street Names 84
516 Lot Access and Driveways 84
517 Off-Street Parking and Loading 91
518 Landscaping and Buffers 98
519 Reserved 102
520 Sewage Facilities 102
521 Water Supply 104
522 Other Utilities 106
523 Stormwater Management and Drainage 107
524 Erosion and Sedimentation Pollution Control and Grading 121
525 Steep Slopes 123
526 Floodplain 123
527 Wetlands 124
528 Solution Prone Carbonate Geology and Sinkholes 125
529 Natural Features 125
530 Standards for Protection from Wildfire - Deleted 126
531 Cultural and Historic Resources 126
532 Community and Natural Features Impact Analysis 127
533 Parks and Open Space Uses 128

Article VI – Special Subdivisions and Land Developments Requirements **131**

600 General 131
601 Mobile Home Parks 131
602 Campgrounds and Recreational Vehicle Parks 134
603 Wireless Telecommunications Facilities - Deleted 136
604 Power Generation Facilities 136
605 Open Space Subdivisions 140
606 Traditional Neighborhood Design 146

Article VII – Improvements **149**

700 General 149
701 Completion of Improvements 149

702 Improvement Guarantee In Lieu of Construction 149
703 Amount of Improvement Guarantee 149
704 Basis of Improvement Guarantee Amount 149
705 Acceptable Forms of Security 150

Article VII – Improvements (Continued)

706 Improvements Not Completed in First Year 151
707 Indemnification 151
708 Improvement Construction 151
709 Improvement Inspection During Construction 151
710 Partial Release of Improvement Guarantee 152
711 As Built Plan 152
712 Final Improvements Inspection and Release from Guarantee 152
713 Remedies to Effect Completion of Improvements 153
714 Improvements Maintenance Agreement 153
715 Dedication and Acceptance of Improvements 153
716 Improvements Not Dedicated or Not Accepted for Dedication 154

Article VIII– Administration and Enforcement 156

800 General 156
801 Fees 156
802 Past Due or Unpaid Fees 156
803 Modifications 157
804 Right to Challenge and Appeal 157
805 Records 158
806 Right of Entry 159
807 Ordinance Violations 159
808 Previous Violations 159
809 Preventive Remedies 160
810 Injunctions 160
811 Enforcement Remedies 160

TABLE OF APPENDICES

Appendix A Plan Checklists

A-1 Sketch Plan Checklist
A-2 Preliminary Plan Checklist
A-3 Final Plan Checklist
A-4 Minor Subdivision Plan Checklist
A-5 Lot Addition/Consolidation Plan Checklist

Appendix B Plan Application Form

Appendix C Time Extension Request Form

Appendix D Staff Decision Appeal Form

Appendix E Notifications and Certifications

E-1 Non Jurisdictional Review Certification
E-2 Surveyor Seal/Certification
E-3 Professional Engineer Seal/Certification
E-4 Other Professionals Seal/Certification
E-5 Certificate of Ownership
E-6 Preliminary Plan Municipal Governing Body Notification
E-7 UCPC Preliminary Plan Certification
E-8 UCPC Modification Note
E-9 Municipal Governing Body Final Plan Notification
E-10 Zoning Note
E-11 UCPC Final Plan Certification
E-12 Improvements Dedication Certification
E-13 Non-Dedicated Improvements
E-14 Lot Additions, Consolidations, Tract Survey, Survey Corrections Notes

Appendix F Example Improvements Cost Estimate

Appendix G Improvement Guaranty/Developer's Agreement

Appendix H Open Space Subdivisions and Site Design Principles

Appendix I Private Right of Way Agreement Provisions

Appendix J Sight Distance Measurement Forms

Appendix K Modification Request Form

Appendix L Landscaping and Buffer Yard Calculation Form

Appendix M Native Plants, Invasive Species and Recommended Trees

Appendix N Stormwater Management Districts Map

Appendix O Stormwater Credits

Appendix P **Stormwater Tables, Calculations, Curve Numbers, IDF Charts, etc.**

P-1 Runoff Curve Numbers
P-2 Runoff Coefficients for the Rational Method
P-3 Design Storm Rainfall Amount
P-4 NRCS (SCS) Type II Rainfall Distribution
P-5 PENN DOT Storm Intensity-Duration Frequency Curve Region 3
P-6 Manning Roughness Coefficients
P-7 Release Rate Percentage Procedures
P-8 Method for Computing Peak Discharge for Water Quality Storm
P-9 Acceptable Stormwater Best Management Practices (BMPs)
P-10 Computations of the Channel Protection Storage Volume (Cp_v)
P-11 Calculations for Hypothetical Development Scenario

Appendix Q **Stormwater Performance Standards Maps**

Appendix R **Standard Stormwater Facilities Maintenance Agreement**

Appendix S **Pennsylvania Code Title 28, Chapter 19 - Organized Camps and Campgrounds**

Appendix T **Example Letter of Credit**

Appendix U **Association of Property Owners Agreement Minimum Requirements**

ARTICLE I

General Provisions

ARTICLE I

GENERAL PROVISIONS

100 LONG TITLE

An Ordinance establishing rules, regulations, and standards for regulating Subdivision and Land Development activity within the County of Union, Commonwealth of Pennsylvania; setting forth the powers, duties and procedures to be followed by the Union County Planning Commission in administering this Ordinance; and setting forth the penalties for violation thereof.

101 SHORT TITLE

This Ordinance shall be known as and may be referenced and cited as the Union County Subdivision and Land Development Ordinance.

102 AUTHORITY

The Board of Commissioners of Union County hereby enacts and ordains this Ordinance governing subdivisions and land developments within the limits of Union County pursuant to the authority granted by the provisions of the Pennsylvania Municipalities Planning Code, Act 247 of 1968, P.L. 805, No. 247, (53 P.S. 10101 et seq.) and as from time to time reenacted and amended.

103 AUTHORITY OF UNION COUNTY PLANNING COMMISSION

The Union County Planning Commission shall have the authority to receive, review, approve, approve with conditions, or disapprove all Subdivision and Land Development plans within the County pursuant to this Ordinance and to otherwise administer the provisions herein. The responsibilities of the Planning Commission may be delegated to staff, with the right of appeal of any staff action to the Commission.

104 PURPOSE

The purpose of this ordinance is to promote the health, safety and general welfare of the citizens of Union County through the establishment of uniform standards and procedures for the regulation of subdivision and land development activity within Union County, Pennsylvania. It is intended that the coordination of development throughout Union County will be of mutual long-term benefit to developers, purchasers of property, to the County, local officials, and the general public. The Union County Board of Commissioners hereby cite the following as the specific purposes for which this Ordinance was ordained and enacted:

A. To promote new development that is well designed, of high quality, and suited to the natural conditions of the site.

B. To provide for orderly, safe, efficient and harmonious development throughout the county.

C. To promote “smart growth” whereby new development is coordinated in and amongst communities and is compactly and efficiently planned in order to avoid the needless public costs of scattered development.

D. To provide for the equitable processing of all subdivision and land development plans.

E. To assure the provision of public improvements which are necessary and the coordination of subdivision and land development proposals with existing streets, public improvements, and municipal public improvement plans, policies, and programs.

F. To assure that streets in and bordering a subdivision or land development shall be coordinated, and be of such widths and grades and in such locations as are deemed necessary to accommodate prospective traffic and facilitate fire protection.

G. To assure that sites are suitable for development, building, and human habitation, and to prevent development that may be hazardous, may aggravate an existing hazard, or may endanger life or property.

H. To assure that the adverse impacts of development on unique and valued natural, scenic, historic, and cultural features and resources are minimized to the greatest practicable extent.

I. To assure that adequate easements and rights-of-way are provided for access, drainage facilities, public utilities, and other appropriate general public purposes.

J. To assure that any land area reserved for public use is suitable in size and location for the intended and designated use.

K. To facilitate the safe and efficient movement of people and goods through the County.

L. To protect soil and water resources (including groundwater resources) and natural drainage ways.

M. To ensure that land which is subject to flooding, subsidence or underground fires shall be made safe for the purpose for which such land is proposed to be used, or that such land shall be set aside for uses which shall not endanger life or property or further aggravate or increase the existing problem.

N. To promote the consideration of and compliance with other Federal, State, County, and/or Local acts, codes, laws, ordinances, plans, policies, rules, regulations, and statutes, including the comprehensive plans of Union County and its constituent municipalities.

O. To ensure that provisions are made for encouraging and promoting flexibility, economy and ingenuity in the layout and design of subdivisions and land developments, and for encouraging practices which are in accordance with modern and evolving principles of site planning and development.

P. To provide uniform standards and procedures for the preparation and recording of plans with the Recorder of Deeds of and for Union County so that the land records of the county are accurate and complete.

105 JURISDICTION

A. **General.** This Ordinance shall apply to all boroughs and townships in the County of Union and all applications for subdivision and/or land development located within a municipality within the County shall be submitted to the Union County Planning Commission for review and recommendation for approval or disapproval.

B. **Municipalities without a Subdivision and Land Development Ordinance.** All plans and plats of proposed subdivisions and land developments located in municipalities within the County not having a subdivision and land development ordinance in effect and not having a certified copy of such ordinance filed with the County, shall be submitted for approval to the Union County Planning Commission. The enactment of a subdivision and land development ordinance by any municipality whose land is subject to the provisions of this Ordinance shall act as a repeal protanto of this Ordinance in said municipality. Prior to enactment of such regulations however, a copy of said ordinance shall be forwarded to the Union County Planning Commission for review in accordance with the requirements of the Pennsylvania Municipalities Planning Code,

Act 247 of 1968, P.L. 805, No. 247, (53 P.S. 10101 et seq.), as from time to time reenacted and amended. Within 30 days after adoption, a certified copy of such ordinance shall be filed with the office of the Union County Planning Commission.

C. **Municipalities with an Adopted Subdivision and Land Development Ordinance.** All plans and plats of proposed subdivisions and land developments located within a municipality having a subdivision and land development ordinance in effect, shall be forwarded, upon receipt by the municipality, to the Union County Planning Commission for review and report in accordance with Article III, Section 302 of the Pennsylvania Municipalities Planning Code, Act 247 of 1968, P.L. 805, No. 247, (53 P.S. 10101 et seq.) as from time to time reenacted and amended. Such municipalities shall not approve such applications until the report is received from the Union County Planning Commission or until the expiration of 30 days from the date the application was forwarded to the County. The provisions of this section shall also apply to municipalities that opt to adopt this Ordinance by reference but do not designate the Union County Planning Commission as their agent for review and approval.

D. **Municipal Adoption by Reference.** These regulations shall also govern the review and approval of subdivisions and land developments in municipalities that adopt this ordinance by reference and by ordinance designate the Union County Planning Commission to administer the ordinance on their behalf. Such designation shall not become effective without the concurrence of the Union County Planning Commission.

106 APPLICATION

The provisions of this Ordinance shall be considered to be the minimum standards necessary to meet the purposes contained herein and the general purposes of the Pennsylvania Municipalities Planning Code, Act 247 of 1968, P.L. 805, No. 247 (53 P.S. 10101, et seq.) as from time to time reenacted and amended. As such all persons are required to submit to the Union County Planning Commission a subdivision and/or land development plan for any activity that constitutes a subdivision or land development as defined in this ordinance.

107 EFFECT OF ADOPTION

A. **General.** Pursuant to the provisions of the Pennsylvania Municipalities Planning Code, Act 247 of 1968, P.L. 805, No. 247 (53 P.S. 10101, et seq.) as from time to time reenacted and amended, no subdivision or land development of any lot, tract or parcel of land shall be made, no street, sanitary sewer, storm sewer, water main, or other improvements in connection therewith shall be laid out, constructed, opened, or dedicated for public use or travel, or for the common use of occupants of buildings abutting thereon, except in accordance with the provisions of this Ordinance.

B. **Pending or Approved Applications.** The provisions of this Ordinance shall not affect any application for subdivision or land development that is pending approval prior to the effective date of this Ordinance. Such applications shall comply with regulations in effect at the time the application was filed. In addition no provision of this Ordinance shall adversely affect the right of an applicant to complete any aspect of a plan that was approved prior to the effective date of this ordinance in accordance with the terms of such approval within five years from the date of first approval.

C. **Recording Required**. All subdivision and land development plans approved by the Union County Planning Commission in accordance with this Ordinance shall be recorded in the office of the Recorder of Deeds of and for Union County, Pennsylvania within 90-days of the date of approval affixed to the plan. Failure to record the plan within the 90-day period shall render the plan null and void, as if it were never approved.

D. **County Approval/Review Notation.** The Recorder of Deeds of and for Union County, Pennsylvania shall not accept any subdivision or land development plan for recording unless the plan officially notes the approval of the Union County Planning Commission or review by the Union County Planning Commission for those plans where the Commission is responsible for review but not for approval of plans.

108 COMPATIBILITY WITH OTHER ORDINANCES

Approvals issued pursuant to this Ordinance do not relieve the Applicant of the responsibility to secure required permits or approvals for activities regulated by any other applicable act, code, law, ordinance, plan, policy, rule, regulation, or statute.

109 CONFLICT WITH OTHER ORDINANCES

Where a municipality under jurisdiction of this Ordinance has enacted a local zoning ordinance, building code, road ordinance, or other ordinance, code, resolution, or regulation other than a subdivision and land development ordinance which imposes more restrictive standards and requirements than contained herein, such other standards and requirements shall take precedent and prevail where there is conflict with the provisions of this Ordinance.

110 CONFLICT WITH PRIVATE PROVISIONS

If the requirements of this Ordinance conflict with those contained in deed restrictions, covenants, easements, or other private agreements, the requirements that are more restrictive or which impose higher standards shall govern, provided that the private provisions are otherwise lawful.

111 REPEALER

The Union County Land Subdivision and Development Ordinance enacted June 10, 1969 as amended by Ordinance enacted October 23, 1978, Ordinance No. 1982-7, enacted March 11, 1982 and the Union County Subdivision and Land Development Ordinance enacted October 1, 1990 as amended by Ordinance No. 2001-4 and all other ordinances or sections thereof and resolutions, which are inconsistent with any of the provisions herein, are hereby repealed. Repeal of said Ordinances or resolutions shall not be construed to affect any suit or proceeding now pending in any court or any rights accrued or liability incurred or any cause or causes of action accrued or existing under any Ordinance repealed hereby; nor shall any right or remedy be lost, impaired, or affected by this Ordinance.

112 SEVERABILITY

Should a court of competent jurisdiction declare any section, subsection, or provision of this Ordinance invalid, such decision shall not affect the validity of this Ordinance as a whole, or any other part of the remaining provisions of the Ordinance. The Union County Board of Commissioners hereby declare that it would have enacted the remainder of this Ordinance even without any such part, provision, or application.

113 LIABILITY DISCLAIMER

The granting of approval of a subdivision or land development plan or any improvement installed as a condition thereof, shall not constitute a representation, guarantee, or warranty of any kind by the County of Union, or by any official, employee, or appointee thereof, of the practicality or safety of the proposed use or improvement, and shall create no liability upon or cause of action against the County of Union, its officials, employees, or appointees for any damage that may result pursuant thereto. The applicant is responsible for ensuring that any subdivision or land development will not cause injury or damage to other persons or property.

114 REFERENCES

Specific methods and publications referenced in this Ordinance shall, in all cases, refer to the latest available edition and shall include revisions, amendments, and/or replacements thereto.

115 AMENDMENTS

The Union County Board of Commissioners may, from time to time, revise, modify, and amend this Ordinance pursuant to the provisions of the Pennsylvania Municipalities Planning Code, Act 247 of 1968, P.L. 805, No. 247, (53 P.S. 10101 et. seq), as from time to time reenacted and amended or other applicable law in effect at the time of said amendment. Provided, however, in the event that the amendments of the Pennsylvania Municipalities Planning Code require changes in the provisions of this Ordinance (i.e. definitions, approval requirements, guarantee for completion of improvements, etc.) said amendments shall automatically become a part of this Ordinance and the Union County Planning Commission shall be authorized to attach to this Ordinance and to copies hereof written addendum setting forth such Pennsylvania Municipalities Planning Code amendments and the sections of this Ordinance affected thereby.

116 EFFECTIVE DATE

This Ordinance shall become effective immediately after being duly enacted and ordained by the Union County Board of Commissioners.

ARTICLE II

Definitions

ARTICLE II

DEFINITIONS

200 GENERAL

Unless otherwise expressly stated, the following terms and words used herein shall, for the purposes of this Ordinance, have the meaning indicated in this Section.

201 GENERAL TERMS

A. Words used in the present tense include the future tense; the singular number includes the plural, and the plural number includes the singular; words of masculine gender include feminine gender; and words of feminine gender include masculine gender.

B. The word "includes" or "including" shall not limit the term to the specific example but is intended to extend its meaning to all other instances of like kind and character.

C. The word "applicant", "person", "subdivider", "developer" and "owner" include an individual, firm, association, organization, partnership, trust, company, corporation, or any other similar entity.

D. The word "lot" includes the word "plot" or "parcel".

E. The word "structure" includes "building" and the use of either word shall be construed as if followed by the phrase "or a part thereof".

F. The words "shall", "must", and "will" are mandatory; the word "may" is permissive.

G. The words "used or occupied" include the words "intended, designed, maintained, or arranged to be used, occupied or maintained".

H. Periods of time stated as a number of days refer to consecutive calendar days, unless specified as "working days".

202 SPECIFIC TERMS

ADT – Average daily traffic volume.

Accessory Building – See Building, Accessory.

Access Drive – A vehicular approach or entry to or exit from a multi-unit residential or a non- residential land development.

Agricultural Land – Land used, or available for use without substantial change, for agricultural operations whether for gain, pleasure, or sustenance.

Agricultural Operation – an enterprise that is actively engaged in the commercial production and preparation for market of crops, livestock, and livestock products and in the production, harvesting, and preparation for market or use of agricultural, agronomic, horticultural, silvicultural and aquacultural crops and commodities. The term includes an enterprise that implements changes in production practices and procedures or types of crops, livestock, livestock products or commodities produced consistent with practices and procedures that are normally engaged by farmers or are consistent with technological development within the agricultural industry.

Alteration - As applied to land, a change in topography as a result of the moving of soil and rock from one location or position to another; also the changing of surface conditions by causing the surface to be more or less impervious; land disturbance.

Amusement Park - A commercially operated park with a predominance of outdoor games and activities for entertainment including motorized, mechanical, aquatic or other devices that hold or carry passengers for amusement over a fixed or restricted area. Also typically includes booths for the sale of food and drink.

Applicant – A landowner or developer, as hereinafter defined, who has filed an application for development including his heirs, successors, and assigns.

Application for Development – Every application, whether preliminary, tentative or final, required to be filed and approved prior to start of construction or development including but not limited to an application for a building permit, for the approval of a subdivision plat or plan, or for the approval of a development plan. This shall include the required and necessary application form, plans, fees, and any other data or documentation submitted on behalf of a subdivision or land development.

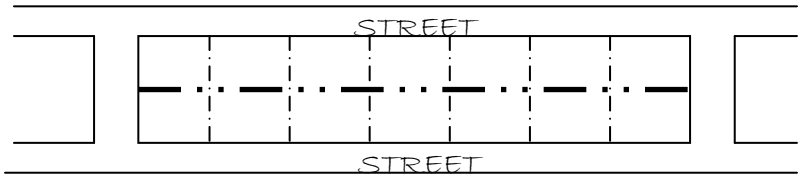
Association of Owners - See Homeowner's Association.

Backfill – Material used to replace or the act of replacing the land surface with material removed during construction.

Base Course – The layer or layers of specified or selected material of designed thickness placed on a subbase or a subgrade to support a surface course.

Berm - A raised earthen mound with landscape plantings of sufficient height to constitute an effective screen providing maximum protection and immediate visual screening.

Block – A unit of land containing one or more lots which is entirely bounded by existing or proposed streets, public lands, cemeteries, railroads, rights-of-way, watercourses or any other barriers to contiguous development.



BMP (Best Management Practice) **-** Stormwater structures, facilities or techniques used to maintain or improve the water quality of surface runoff.

Bridge – A structure including supports having an opening measured along the center of the pavement of more than twenty (20) feet between supports (i.e. undercroppings, abutments) designed to convey vehicles, pedestrians, or other moving loads over a watercourse, railroad, public or private right-of-way, or any depression.

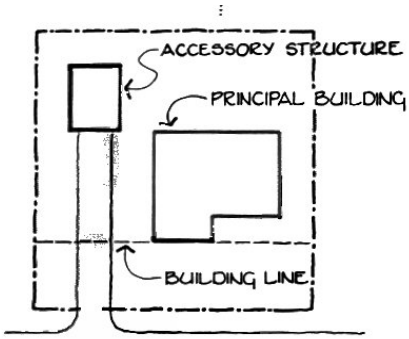
Buffer Yard – A portion of a site, together with any structures or landscape plantings, used and intended to provide a visual barrier between different land uses or to shield, block or provide other protection from noise, light, or nuisance between adjacent parcels of land. For the purposes of this Ordinance the buffer yard is the applicable building setback distance requirement and any additional buffer distance required as per Article V, Section 518 to lessen the impacts of incompatible land uses.

Buildable Area – The area of a lot remaining after the minimum rights-of-way, setbacks (front, rear, and side) and open space requirements have been met.

Building – Any combination of materials forming a structure which is designed, intended or arranged for the housing, sheltering, enclosure, or structural support of persons, animals, equipment, goods, process or property of any kind.

A. **Building, Accessory** – A detached subordinate building, the use of which is customarily incidental and subordinate to that of the principal building, which is located on the same lot as that occupied by the principal building. An accessory building is not used for dwelling purposes nor normally occupied by personnel associated with any use.

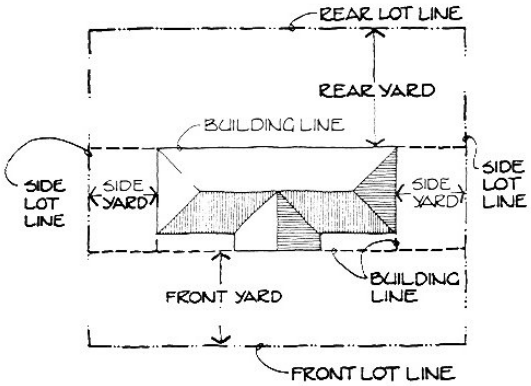
B. **Building, Principal** – The main structure on a given lot, in which the principal use of the site is conducted.



Building Setback Line, Front – A line that designates the minimum distance that buildings must be setback from a road right-of-way. Such distance shall be measured at right angles from the front street right-of-way that abuts the property upon which a building is to be located and be parallel to the right-of-way line.

Building Setback Line, Rear – A line that designates the minimum distance that buildings must be setback from the rear property line. Such distance shall be measured at right angles from the rear property line that abuts the property upon which a building is to be located and be parallel to the said rear property line.

Building Setback Line, Side – A line that designates the minimum distance that buildings must be setback from side property lines that extends from the front building setback line to the rear building setback line. Such distance shall be measured at right angles from the side property lines that abut the property upon which a building is to be located and be parallel to the said side property lines.



Caliper - The outside diameter of trees measured for buffering and landscaping purposes at a point on the trunk six (6) inches above the natural ground line.

Campground - A portion of land used for the purpose of providing a space or spaces for two or more tents, trailers, or recreational vehicles for camping purposes regardless of whether or not a fee has been charged for the leasing, renting or occupancy of the space.

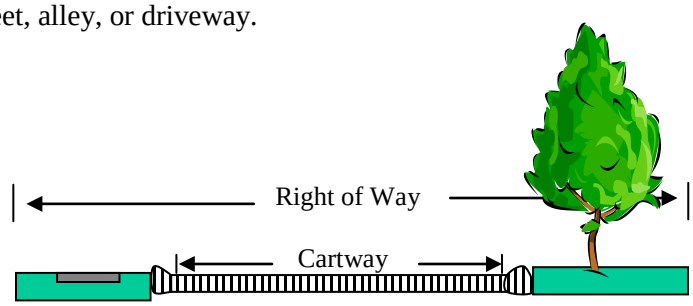
Camping Space, Primitive Tent - An unimproved site within a campground designed for the placement of a single tent for the exclusive use of its occupants intended and used for the purposes of overnight temporary stays associated with camping. Typically, modern conveniences such as utilities are not provided. It would likely have a fire pit.

Camping Space, Standard Tent - An improved site within a campground designed for the placement of a single tent for the exclusive use of its occupants intended and used for the purposes of overnight temporary stays associated with camping. It may have modern conveniences such as water and electric available, a tent pad, fire pit, and probably a picnic table.

Camping Space, Recreational Vehicle - An improved site within a campground designed for the placement of a single recreational vehicle for the exclusive use of its occupants intended and used for the purpose of overnight temporary stays associated with camping. Generally it has modern conveniences such as water, electric and possibly on-site sewer connections available.

Carbonate – A sediment formed by the organic or inorganic precipitation of mineral compounds characterized by the fundamental chemical ion CO3, the principal element in limestone and dolomite strata.

Cartway – The improved surface of a right-of-way that is available and intended for vehicular traffic in the form of a street, alley, or driveway.



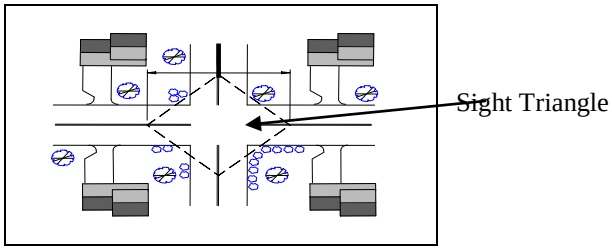
Centerline – A line running parallel to and equidistant from both sides of the traveled portion of a street.

Chairperson – The Chairperson of the Union County Planning Commission.

Channel Protection Storage Volume (Cp_v) - The volume of stormwater from a site that must be captured to provide 24 hour extended detention of the one-year 24-hour storm event in order to protect stream channels from erosion. For streams with stocked or naturally reproducing trout extended detention shall be for 12 hours.

Class A Concrete – Cement concrete meeting the requirements set forth in the Pennsylvania Department of Transportation Publication 408.

Clear Sight Triangle – An area of unobstructed vision at street intersections or street and driveway intersections defined by lines of sight between points at a given distance from the intersection of the street and/or driveway centerlines.



Closed or Undrained Depression – In a Karst geologic area, a distinct bowl-shaped depression in the land surface; size and amplitude are variable; drainage is internal. It differs from a sinkhole in that the ground surface is unbroken and usually occurs in greater density per unit area.

Cluster Development – A development design and site-planning concept in which several buildings are concentrated in specific areas on the site to allow the remaining land to be used for recreation, common open space, and protection of other valued natural, historic, and cultural features and resources.

Commission – The Union County Planning Commission and, where appropriate, its staff.

Commission Engineer - A licensed professional engineer registered by the Commonwealth of Pennsylvania appointed by the Union County Planning Commission to perform independent review of engineering and technical site design details of subdivisions and land developments.

Commissioners – The Union County Board of Commissioners.

Common Open Space – A parcel or parcels of land or an area of water, or a combination of land and water within a development site that is designed and intended for the use or enjoyment of residents of a development, not including streets, off-street parking areas, and areas set aside for public facilities.

Commonwealth – Commonwealth of Pennsylvania

Comprehensive Plan – The official comprehensive plan of the County of Union, Pennsylvania or any municipality under jurisdiction of this Ordinance adopted by the respective governing body which establishes broad goals for land use and growth management and may include plans for future land use, parks, transportation, public facilities and services, and the like.

Condominium – A building or group of buildings in which dwelling units, offices, or floor area are owned individually and the structure, common areas, and facilities are owned by all the owners on a proportional and undivided basis and where there is an association of owners organized for the purpose of maintaining, administering, and operating common areas and facilities.

Conservation District - The Union County Conservation District.

Consistency – A reasonable, rational, similar connection or relationship between a development proposal and the municipal, multi-municipal, and/or county comprehensive plan(s) or other relevant adopted planning documents and ordinances.

Construction – The erection, fabrication, installation, demolition, or removal of any structure, facility, feature or addition thereto, including all related activities such as clearing of land, grading, earthmoving, paving, and all other activities regulated by this Ordinance.

County – County of Union, Pennsylvania.

Crosswalk - A publicly or privately owned right-of-way for pedestrian use that crosses paved areas used for motor vehicles.

Cul-de-sac – A street that provides a single means of ingress and egress by intersecting another street at one end and terminating at the other end in a vehicular turnaround.

Culvert – A structure, typically constructed of metal, plastic, or concrete, not classified as a bridge, which provides an opening under a roadway, rail bed, pedestrian path, or other right of way designed to catch surface water from side ditches and direct it away from a roadway, rail bed, pedestrian path or other right-of-way and/or designed to convey a stream under such a crossing without constricting water flow or movement of aquatic species.

Curb - A concrete, stone or other improved boundary usually marking the edge of the roadway or paved area.

Curb Radius - The curved edge of a street or driveway at intersections, measured at the edge of the cartway.

Curb Return – A curved curb connecting the tangents of two intersecting curbs of streets or driveways.

Cut – The difference between a point on the original ground and designated point of lower elevation on the final grade; an excavation.

Dam - An artificial barrier, together with its appurtenant works, constructed for the purpose of impounding or storing water or another fluid or semi-fluid, or a refuse bank, fill or structure for highway, railroad or other purposes which does or may impound water or another fluid or semi-fluid.

Dedication – The deliberate appropriation or conveyance of land or an interest in land by the owner to another party (i.e. municipality,) for public use through a written instrument, and completed with an acceptance by the municipality.

Deciduous – Plants that drop their foliage annually before becoming dormant.

Deed – A legal document conveying ownership of real property.

Deed of Record – A legal document conveying ownership of real property officially on file in the Recorder of Deeds Office of Union County, Pennsylvania.

Deed Restriction – A restriction upon the use of a property, lot, or parcel set forth in a deed that runs with the title of the land and is binding upon subsequent owners of the property but which is enforced by the landowners involved and not the county, municipality, or other public agency. Sometimes known as a private or restrictive covenant.

Density – The number of dwelling units or units of occupancy permitted to be constructed or situated on a specific unit of land generally expressed as a "per acre" value.

Designee - The agent of the County of Union and/or the Union County Planning Commission involved with the administration, review or enforcement of any provisions of this Ordinance by contract or memorandum of understanding.

Design Manual, Part 2 – Pennsylvania Department of Transportation (Penn DOT) publication containing highway design criteria.

Design Speed – Speed, selected for a specific street, which takes into consideration the geometric limits, such as degree of curvature, super elevation, sight distances, etc., and which controls the safe operation of

the vehicle as well as allowing for safe pedestrian traffic. The design speed is governed by the volume of traffic, parking, speed limits, turning movements at intersections, intersection controls, land width, and pavement surface conditions.

Design Storm - The magnitude and temporal distribution of precipitation from a storm event measured in probability of occurrence (e.g. a 5-year storm) and duration (e.g. 24-hours), used in the design and evaluation of stormwater management systems.

Detention Basin - An impoundment structure designed to manage stormwater runoff by temporarily storing the runoff and releasing it at a predetermined rate.

Developer – any landowner, agent of such landowner, or tenant with the permission of such landowner, who makes or causes to be made a subdivision of land or a land development.

Development of Regional Significance and Impact – Any subdivision or land development that, because of its character, magnitude, or location will have a substantial effect upon the health, safety, or welfare of citizens in more than one municipality.

Development Plan – The provisions for a development, including a planned residential development, a plat of subdivision, all covenants relating to use, location and bulk of buildings and other structures, intensity of use or density of development, streets, ways and parking facilities, common open space and public facilities. The phrase "provisions of the development plan" when used in this Ordinance shall mean the written and graphic materials referred to in this definition.

Development Site - The specific tract(s) of land for which an activity regulated by this Ordinance is proposed.

Director – The Union County Planning Director.

Downslope Property Line - That portion of the property line of the lot, tract, or parcels of land being developed located such that all overland or pipe flow from the site would be directed towards it.

Drainage Conveyance Facility - A Stormwater Management Facility designed to transmit stormwater runoff and shall include streams, channels, swales, pipes, conduits, culverts, storm sewers, etc.

Drainage Easement - A right granted by a landowner to a grantee, allowing the use of private land for stormwater management purposes and/or required for the preservation or maintenance of a natural stream or watercourse or other drainage facility.

Drainageway – Any natural or artificial watercourse, trench, ditch, swale or similar depression into which surface water flows.

Driveway – A private drive providing vehicular access between a street or access drive and a parking area or structure.

Dwelling – Any structure, or part thereof, designed or used exclusively for human habitation. The term dwelling shall not be deemed to include dormitory, fraternity, motel, rooming house, sorority, tourist home, hotel, hospital, or nursing home.

Dwelling, Multiple Family – A building designed for or containing two or more separate dwelling units that share access from a common hall, stair, or balcony.

Dwelling, Single Family Detached – A single dwelling unit occupying the building ground to roof designed for and occupied by not more than one family and having no roof, wall, or floor in common with any other dwelling unit.

Dwelling, Townhouse - A one -family dwelling in a row of at least three such units in which each unit has its own front and rear access to the outside, no unit is located over another unit, and each unit is separated from any other unit by one or more vertical common fire-resistant walls.

Dwelling, Two Family – Two dwelling units attached side by side or one above the other in which each shares only one common wall or floor with the other and where each unit has an individual access to the outside. Such as twin or double and duplex structures and two unit conversion apartments.

Dwelling Unit – One or more rooms in a dwelling structure designed for the use by one or more individuals living together as a single housekeeping unit, with cooking, living, sanitary and sleeping facilities.

Easement – Any existing, recorded or proposed described right to a section of land, usually a strip, granted for limited use of property by the landowner for a public, quasi public or private purpose and within which the owner of the property shall not have the right to make use of the land in a manner that violates the right of the grantee.

Earth Disturbance - Any activity including, but not limited to, construction, mining, timber harvesting and grubbing which alters, disturbs, and exposes the existing land surface.

Elevation – A vertical distance above or below a predetermined and fixed reference level i.e. above or below sea level.

Emergency – An unforeseen occurrence or combination of circumstances that calls for immediate action or remedy.

Engineer – A licensed professional engineer registered by the Commonwealth of Pennsylvania.

Erosion - The movement of soil particles by the action of water, wind, ice, or other natural forces.

Erosion and Sediment Pollution Control Plan - A plan that is designed to minimize accelerated erosion and sedimentation and to meet the requirements of the PA DEP.

Evergreen – A plant with foliage that remains green year round.

Excavation – Any act by which earth, sand, gravel, rock or any other similar material is dug into, cut, quarried, uncovered, removed, displaced, relocated, bulldozed, and including all methods of replacement.

Existing Conditions - The initial condition of a project site prior to the proposed construction. If the initial condition of the site is undeveloped land, the land use, for stormwater management calculations, shall be considered as "meadow" unless the natural land cover is proven to generate lower curve numbers or Rational "C" value, such as forested lands.

Fill – Any act by which earth, sand, gravel, rock or any other similar material is placed, pushed, dumped, pulled, transported, or moved to a new location above the natural surface of the ground or on top of the stripped surface; the difference of the elevation between a point on the original ground and a designated point of high elevation of the final grade; the material used to make fill.

Final Plan – The plan of a proposed subdivision or land development including all supplemental information required by this Ordinance, or by an applicable municipal ordinance, submitted to obtain final approval and having a form acceptable for recording in the office of the recorder of deeds.

Fire Lane – A way cleared of obstacles and vegetation at all times so as to permit ingress and egress for vehicles during a fire or other emergency.

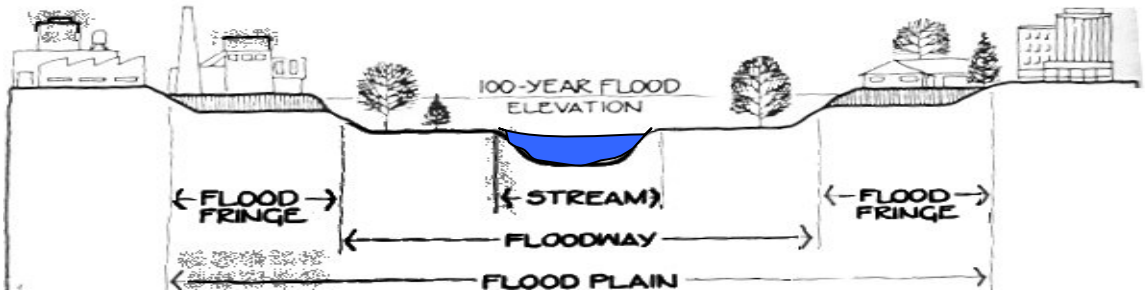
Flexible Pavement – A pavement structure that maintains intimate contact with and distributes loads to the subgrade and depends on aggregate interlock, particle friction, and cohesion for stability, such as bituminous pavement.

Flood - A general but temporary condition of partial or complete inundation of normally dry land areas from the overflow of streams, rivers, and other waters of this Commonwealth.

Flood Fringe - That portion of the flood hazard area outside of the floodway, based on the total area inundated during the regulatory base flood plus 25 percent of the regulatory base flood discharge.

Floodplain - Any land area susceptible to inundation by water from any natural source and/or those areas delineated by Flood Insurance Studies for Union County and its individual municipalities prepared by the Federal Emergency Management Agency (FEMA). These areas are mapped and shown on the Flood Insurance Rate Maps and/or Flood Hazard Boundary Maps.

Floodplain, 100-year – Any land area susceptible to inundation by water from any natural source and/or those areas delineated by the FEMA Flood Insurance Studies and associated maps for Union County and its individual municipalities in which there is a one percent (1%) chance of inundation occurring in any given year.



Floodway - The channel of the watercourse and those portions of the adjoining floodplains that is reasonably required to carry and discharge the 100-year frequency flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies for Union County and its municipalities provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year frequency floodway, it is assumed - absent evidence to the contrary - that the floodway extends 50 feet from the stream to the top of stream bank on each side of the stream.

Floor Area – Total gross area of all floors enclosed within the exterior walls of any building, including accessory buildings and including any areas that may be enclosed by temporary exterior walls such as garage doors or removable solarium glass enclosures; or as defined in an applicable municipal zoning ordinance.

Footcandle - The unit of illumination when the foot is the unit of length, as shown as an isofootcandle diagram, where all points on the line represent the same level of illumination.

Freeboard - A vertical distance between the elevation of the designed high water level and the top of a dam, levee, tank, basin, or diversion ridge. The space is required as a safety margin in a pond or basin.

Frontage – That side of a lot abutting on a street measured along the front lot line at the front building setback line.

Governing Body – The Board of Commissioners of Union County or the elected officials of any municipality under jurisdiction of this ordinance.

Grade - A slope, usually of a road, street, other public way, channel or natural ground specified in percentage change in elevation per horizontal distance and shown on plans as specified herein. (To) Grade-to manipulate the land surface and its slope through excavation, filling or leveling.

Grade, Existing – The surface of the ground or pavement as it exists prior to disturbance in preparation for activities regulated by this Ordinance.

Grade, Finished – The final elevation of the ground surface after development.

Grade, Natural - The elevation of the ground level in its natural state, before construction, filling, or excavation.

Grassed Waterway - A natural or constructed waterway, usually broad and shallow, covered with erosion-resistant grasses, commonly used to convey surface water from cropland.

Gross Floor Area - The sum of the gross horizontal areas of a structure measured by taking the outside dimensions of the building at each floor level intended for occupancy or storage.

Groundwater Recharge - Replenishment of existing natural underground water supplies.

Grout – A mixture of cement, water and sand used to seal wellheads and other structures to prevent the infiltration of liquids and solids.

Half Street – A street, generally parallel with and adjacent to a property line, having a lesser right-of-way and/or cartway width than required by this Ordinance for improvement as a street.

HEC-HMS (Hydrologic Engineering Center Hydrologic Modeling System) - The computer-based hydrologic modeling technique adapted to a particular watershed as part of an official Act 167 Watershed Plan (prepared under Act 167 of 1978, 32 P.S. 6801 et seq.) and calibrated to reflect actual recorded flow values by adjoining key model input parameters. For example, Miller Run sub-watershed of Bull Run, West Branch of the Susquehanna, and White Deer Creek Watersheds have calibrated HEC-HMS models.

Historic Resource/Feature - Any building, site, structure, object, district or area that is: listed on the National Register of Historic Places; has received a Determination of Eligibility for the National Register from the United States Department of Interior -National Park Service; is on the Pennsylvania Inventory, is listed in the Union County Historic Preservation Plan and/or Sites Register; or which is listed on any officially adopted municipal plan, registry or inventory of historic resources and features. This term shall include the site, principal structures, accessory structures, yards, vegetation, fences, road alignments, and signage associated with such resource/feature.

Homeowners Association - An incorporated or unicorporated nonprofit, cooperative organization operating under recorded land agreements through which: (a) each lot and/or homeowner in a described land area is automatically a member; (b) each lot is automatically subject to a charge for a proportionate share of the expenses for the organization's activities, such as maintaining a common property (i.e. streets, open space, stormwater facility); and (c) the charge if unpaid becomes a lien against the property.

Impervious Surface - A surface that prevents the percolation of water into the ground. For the purposes of this Ordinance impervious surface shall include, but not be limited to, the following: concrete, asphalt, building coverage, water impoundments, gravel and crushed stone areas, highly compacted soil, etc.
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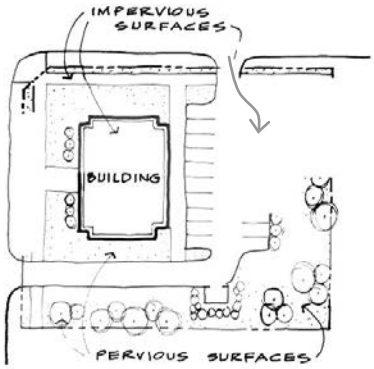


Improvement – Those physical additions and installations required and made to a property to render land suitable for an intended use, including but not limited to, buildings, streets, curbs and gutters, sidewalks, street signs and lights, walkways, sewage disposal and water supply facilities, monuments, markers, shade trees and landscaping, grading, stormwater management facilities, and the like.

Improvements Guaranty Agreement – A deposit of cash, a bond, a binding letter of credit, line of credit, escrow account, or negotiable securities and an agreement guaranteeing the developer will install all required improvements, which is forfeited to the county and municipality if the improvements are not installed in accordance with the approved plans.

Incidental – Occurring as a minor accompaniment. Liable to occur in consequence of or in connection with another.

Infiltration Structures - A structure designed to direct runoff into the ground (e.g. French drains, seepage pits, or seepage trenches).

Inlet - A surface connection to a closed drain. A structure at the diversion end of a conduit. The upstream end of any structure through which water may flow.

Karst – A type of topography that is formed over calcareous minerals such as limestone, dolomite, or gypsum by bedrock solution, and that is characterized by closed depressions or sinkholes, caves and underground drainage (from AGI, Glossary of Geology, 1972.).

Land Development – The development of property as specified below:

(a) The improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving:

1. A group of two or more residential or nonresidential buildings, whether proposed initially or cumulatively, or a single nonresidential building on a lot or lots regardless of the number of occupants or tenure; or

2. The division or allocation of land or space, whether initially or cumulatively, between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups, or other features.

(b) Any subdivision of land.

(c) "Land Development" shall not include:

1. The conversion of an existing single family detached dwelling or single-family semi-detached dwelling into not more than three residential units, unless such units are intended to be a condominium;

2. The addition of an accessory building, including farm buildings, on a lot or lots subordinate to an existing principal building; or

3. The addition or conversion of buildings or rides within the confines of an enterprise which could be considered an amusement park. For purposes of this subclause, an amusement park is defined as a tract or area used principally for permanent amusement structures or rides. This exclusion shall not apply to newly acquired acreage by an amusement park until initial plans for the expanded area have been approved.

Land Development, Campground – A land development as defined herein, the principal use of which is designed and intended for the improvement of land for the purpose of providing a space or spaces for travel trailers, recreational vehicles, tents or other forms of living accommodations for camping purposes regardless of whether a fee has been charged for the leasing, renting or occupancy of such space.

Land Development, Commercial – A land development as defined herein, the principal use of which is designed and intended for commercial purposes, including but not limited to, retail stores, shopping centers, motels, offices, sports stadiums, golf courses, racetracks, and similar structures and uses.

Land Development, Industrial – A land development as defined herein, the principal use of which is designed and intended for industrial purposes, including but not limited to, industrial parks, multi-tenant facilities, manufacturing plants, and similar structures and uses.

Land Development, Institutional – A land development as defined herein, the principle use of which is designed and intended for institutional purposes, including but not limited to, schools, hospitals, nursing homes, sheltered care facilities, prisons, municipal buildings, or other similar structures and uses.

Land Development, Mobile Home – A land development as defined herein, the principle use of which is designed and intended for the improvement of land, normally under single ownership, for the placement of non-transient mobile homes, consisting of two or more mobile home spaces.

Land Development, Mixed Use – A land development as defined herein, where a combination of different land uses are planned to occur on the same lot, including nontraditional accessory uses. In the case of a school, house of worship or other non-profit entity nontraditional accessory uses might include, but not be limited to, retail sales, residential uses, amusement parks, and sports and entertainment facilities as an integrated part of the development.

Land Development, Residential – A land development as defined herein, the principle use of which is designed and intended for full-time residential purposes and occupancy, including but not limited to single multiple family dwellings, housing developments, planned residential developments or other similar structures and uses.

Land/Earth Disturbance - Any activity involving grading, tilling, digging, or filling of ground or stripping of vegetation or any other activity that causes an alteration to the natural condition of the land.

Landowner – The legal or equitable owner or owners of land including the holder of an option or contract to purchase (whether or not such option or contract is subject to any condition), a lessee if he is authorized under the lease to exercise the rights of the landowner, or other person having a proprietary interest in land.

Land Use – Any activity, business, function, or purpose for which any piece of land or structure is used or intended to be used.

Land Use Incompatibility - Land uses that are adjacent or in proximity to one another that do not go well together due to detrimental impacts from a particular use such as noise, lighting, traffic, odor, emissions etc. and would generally not be considered complementary and congruous. An example would be the location of a noisy or smoky factory in a residential neighborhood.

Landscape Architect – A professional landscape architect licensed by the Commonwealth of Pennsylvania.

Landscape Screen - Any combination of hedges, architectural walls, trees, or earthen berms arranged to create a continuous visual barrier.

Lateral – A utility line between a main line, located in a utility easement or street right-of-way, and the building the line serves.

Leveling Area – A safe stopping area at the intersection of streets or the intersection of a driveway and a street.

Level of Service (LOS) – A measure of the effect of traffic on the capacity of a road, describing conditions within a traffic stream; generally described in such factors as speed, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. Levels of service are designated A through F, with LOS A indicating the best service and LOS F indicating the worst. Further defined in 2000 Highway Capacity Manual (HCM 2000) published by the Transportation Research Board.

Limestone – A rock that is chiefly formed by the accumulation of organic remains, consisting mainly of calcium carbonate.

Lot – a designated parcel, tract or area of land established by a plat or otherwise as permitted by law and to be used, developed or built upon as a unit.

Lot Area – The computed area contained within the property lines of a lot as shown on a plan, excluding space within a street right-of-way but including the area of any easement.

Lot, Corner – A lot abutting the intersection of two or more streets. Corner lots have two front yards and require the necessary front yard setbacks for each yard.

Lot, Depth – The mean (average) distance measured between the front and rear lot lines.

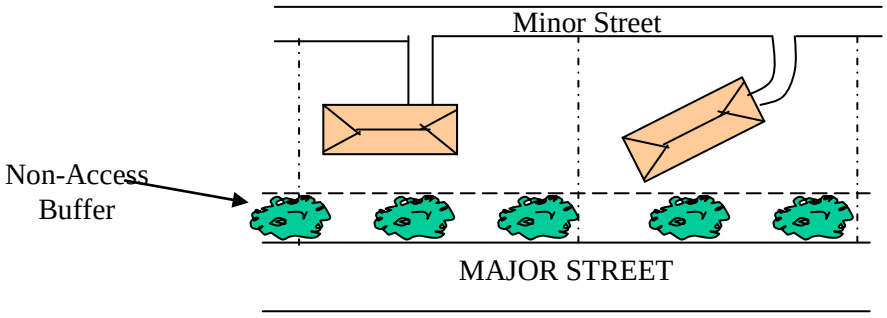
Lot, Double Frontage – A lot with street frontage at both the front and rear.

Lot, Frontage – The length of the front lot line measured at the street right-of-way line.

Lot, Interior – A lot other than a corner lot with only one frontage on a street.

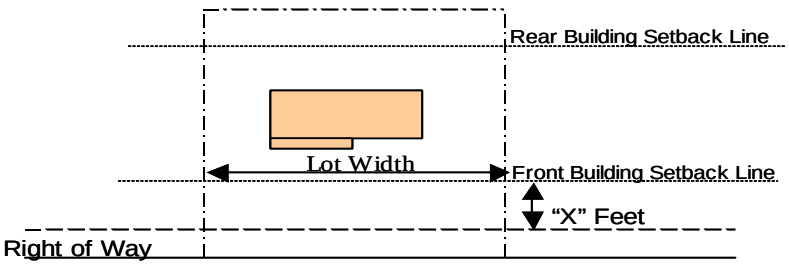
Lot, Reverse Frontage – A lot with front and rear street frontage where vehicular access is prohibited to and from the higher intensity street.

Lot with Reverse Frontage



Lot, Open Space – A parcel intended not to be developed or encumbered with structures.

Lot, width – The horizontal distance between the side lot lines measured at the shortest distance between the front and rear building lines as determined by the prescribed front and rear yard requirements.



Lot Lines – The property lines bounding the lot.

a. **Lot Line, Front** – The line separating the lot from a street.

b. **Lot Line, Rear** – The lot line opposite, nearly parallel to and most distant from the front lot line.

c. **Lot Line, Side** – Any lot line other than a front or rear lot line.

Lot Line Marker – A metal plate or pin set by a professional land surveyor to permanently identify curves along property lines, angles in property lines, and lot line intersections.

Lot of Record – Any lot which individually or as part of an approved subdivision has been recorded in the Office of the Union County Recorder of Deeds.

Mediation – A voluntary negotiating process in which parties in a dispute mutually select a neutral mediator to assist them in jointly exploring and settling their differences, culminating in a written agreement, which the parties themselves create and consider acceptable.

Maintenance Guarantee – A deposit consisting of cash, a bond, a binding letter of credit, line of credit, escrow account, or negotiable securities and an agreement insuring that improvements constructed as part of an approved subdivision or land development have been properly installed and guaranteeing their integrity for a specified time period not to exceed 18 months from the date of acceptance of dedication.

Manning Equation in (Manning formula) - A method for calculation of velocity of flow (e.g. feet per second) and flow rate (e.g. cubic feet per second) in open channels based upon channel shape, roughness, depth of flow and slope. "Open channels" may include closed conduits so long as the flow is not under pressure.

Mobile Home – A transportable, single family dwelling intended for permanent occupancy, contained in one unit, or in two or more units designed to be joined into one integral unit capable of again being separated for repeated towing, which arrives at a site complete and ready for occupancy except for minor and incidental unpacking and assembly operations, and constructed so that it may be used without a permanent foundation. A mobile home shall be constructed to remain a mobile home, shall not be a part of the real estate, and shall be subject to all regulations applying thereto, whether or not wheels, axles, hitch, or other appurtenances of mobility are removed regardless of the nature of the foundation provided. This term does not include recreation vehicles and travel trailers.

Mobile Home Lot – A parcel of land in a mobile home park, improved with necessary utility connections and other appurtenances necessary for the erection thereon of a single mobile home.

Mobile Home Pad – The part of a mobile home lot that is stabilized space reserved for the placement of the mobile home.

Mobile Home Park – A parcel or contiguous parcels of land which has been so designated and improved that it contains three or more mobile home lots for the placement thereon of mobile homes.

Modification – A process for alleviating specific requirements imposed by this Ordinance, the procedure for which is outlined in Article VIII Section 803 of this Ordinance.

Monument – For the purposes of this Ordinance a monument shall be defined to mean a reinforced concrete monument, stone, or other permanent object containing magnetic material, set by a professional land surveyor to permanently identify surface elevation and/or survey reference points such as the intersection of lines forming angles in the boundary of a lot or tract, rights-of-ways of streets and utilities or at other locations determined appropriate by the Planning Commission for the purpose of reference in land and property surveys.

Municipal Authority - A body politic or corporate created pursuant to the Act of May 2, 1945 (P.L. 382, No. 164) known as the "Municipal Authorities Act of 1945".

Municipal Engineer – A professional engineer licensed as such in the Commonwealth of Pennsylvania, duly appointed as the engineer for a municipality, planning agency or joint planning commission.

Municipal Governing Body – The council in cities and boroughs, the board of commissioners in townships of the first class, the board of supervisors in townships of the second class, or any other similar body as may be designated in law providing for the form of government with the final decision making, budgeting, and appointing authority of a general purpose unit of government.

Municipal Planning Commission – The planning agency appointed by the municipal governing body.

Municipality – Any city of the second class A or third class, borough, incorporated town, township of the first or second class, county of the second class through eighth class, home rule municipality, or any similar general purpose unit of government which currently exists or shall hereafter be created by the Pennsylvania General Assembly in Union County.

Municipalities Planning Code – The Pennsylvania Municipalities Planning Code, Act 247 of 1968, P.L. 805, (53 P.S. 10101 et seq.), as from time to time reenacted and amended.

Nonconforming Lot - A lot area or dimension of which was lawful prior to the adoption or amendment of this Ordinance and/or applicable zoning ordinance, but which fails to conform to the requirements of this Ordinance and/or zoning ordinance by reasons of such adoption or amendment.

Nonpoint Source Pollution - Pollution that enters a body of water from diffuse origins and does not result from discernible, confined, or discrete conveyances.

NRCS - Natural Resource Conservation Service (Previously Soil Conservation Service--SCS).

Official Map – A map adopted by ordinance pursuant to Article VI of the Pennsylvania Municipalities Planning Code, Act 247 of 1968 P.L. 805, (53 P.S. 10101 et seq.) as from time to time reenacted and amended

Open Channel - A drainage element in which stormwater flows within an open surface. Open channels include, but shall not be limited to, natural and man-made drainage ways, swales, streams, ditches, and canals.

Open Space - An area that is intended to provide land free of development and is designed for environmental, scenic or recreation purposes. Open space may include but is not limited to lawns, decorative plantings, walkways, active and passive recreation areas, playgrounds, fountains, wooded areas and watercourses. Open space shall not include driveways, parking lots or other surfaces designed or intended for vehicular travel, or detention and retention ponds. In addition no area of future road right-of-way shall be counted as open space.

Ordinance – The Union County Subdivision and Land Development Ordinance.

Outfall - Point where water flows out from a conduit, pipe, stream, or drain; such as the point of discharge for a stormwater detention basin.

Outlet - Points of water disposal from a stream, river, lake, tidewater or artificial drain.

Overbank and Extreme Event Flood Protection Volume - See Release Rates.

Parent Tract – The original lot or tract of land from which a new lot is being subdivided.

Parcel – A lot or tract of land. (See lot).

Park – A tract of land dedicated and used by the public for active and passive recreation.

Parking Aisle – The clear space for traffic movement and maneuvering between rows of parking spaces.

Parking Area/Lot – Any public or private land area designated and used for parking of vehicles including parking lots, garages, private driveways, and legally designated areas of public streets.

Parking Aisle Treatment - Internal parking lot landscaping that separates rows of parking spaces to provide a buffer and visual relief from the negative impacts of parking infrastructure.

Parking Space - An off-street parking area available and designated for the parking of a single vehicle.

Pavement – A sub-base, base course, or surface course placed on a sub-grade to support traffic load.

Pedestrian Way – A specified easement or right of way, publicly or privately owned, in the form of a walkway, path, sidewalk or other reservation which is designed and designated for the exclusive use of pedestrians.

PA DEP – Pennsylvania Department of Environmental Protection.

Peak Discharge - The maximum rate of stormwater runoff from a specific storm event.

Peak Hour – The hour during which the heaviest volume of traffic occurs on a street or road.

PennDOT– Pennsylvania Department of Transportation.

Penn State Runoff Model (PSRM) - The computer-based hydrologic modeling technique adapted to a particular watershed as part of an official Act 167 Watershed Plan and calibrated to reflect actual recorded flow values by adjoining key model input parameters. Portions of the Bull Run Watershed not impacted by the Plan update of 2002 and the Buffalo Creek Watershed have calibrated PSRM models.

Performance Guarantee – See Improvements Guaranty Agreement.

Pipe - a culvert, closed conduit, or similar structure including appurtenances that convey stormwater.

Plan – A map or plat of a subdivision or land development complete with a drawing and supplementary data, whether sketch, preliminary, or final.

a. **Plan, Sketch –** An informal plan, not necessarily to exact scale, indicating salient existing features of a tract and its surroundings and the general layout of a proposed subdivision or land development as prepared in accordance with this Ordinance.

b. **Plan, Preliminary –** A plan of a proposed subdivision or land development, including all supplementary information required by this Ordinance or applicable municipal ordinance, to obtain preliminary approval and prepared in accordance with this Ordinance.

c. **Plan, Final –** A complete and exact subdivision or land development plan, including all supplementary data, prepared in accordance with this Ordinance for official approval and recording.

d. **Plan, Lot Addition(Add-on) –** A complete and exact subdivision plan, including all supplementary data, prepared in accordance with this Ordinance that is intended to convey a parcel of ground located immediately adjacent to other property owned by the intended grantee, that is being added to the grantee's existing lot of record.

e. **Plan, Lot Consolidation -** A plan whereby the entire area of two or more adjacent existing lots of record are combined or consolidated to effectually eliminate one or more original lots into one new lot.

f. **Plan, Record –** A final plan which contains the original endorsement of the municipality and the Union County Planning Commission, which is intended to be recorded with the Union County Recorder of Deeds Office.

Planning Commission – Union County Planning Commission and its staff.

Planned Residential Development (PRD) – an area of land, controlled by a landowner, to be developed as a single entity for a number of dwelling units, or combination of residential and nonresidential uses, the development plan for which does not correspond in lot size, bulk, type of dwelling, or use, density, or intensity, lot coverage and required open space to the regulations established in any one district created, from time to time, under the provisions of a municipal zoning ordinance.

Plat – The map or plan of a subdivision or land development, whether preliminary or final.

Power Generation Facility - A facility, structure or group of structures designed and intended to generate energy for the distribution and/or sales of electricity or other power source. This includes but is not limited to coal fired, natural gas fired, cogeneration, nuclear, solar, water and wind power. It however shall not include an individual home that has erected solar or wind energy generation equipment for personal use.

Preservation or Protection – When used in connection with natural and historic resources, shall include means to conserve and safeguard these resources from wasteful or destructive use, but shall not be interpreted to authorize the unreasonable restriction of forestry, mining, or other lawful uses of natural resources.

Private Driveway Access Easement – Any existing, recorded, or proposed easement for private driveways in which a private right-of-way agreement properly executed between the landowners granting access and all affected parties abutting the easement.

Private Street – All streets which are not public, including but not limited to, streets maintained by private agreements, by private owners or an association of private property owners or for which no

maintenance responsibility has been established; and including all private driveway access agreements or rights-of-way for access.

Probable Maximum Flood (PMF) - The flood that may be expected from the most severe combination of critical meteorological and hydrological conditions that is reasonably possible in any area. The PMF is derived from the probable maximum precipitation (PMP) as determined based on data obtained from the National Oceanographic and Atmospheric Administration (NOAA).

Publication 408 – Pennsylvania Department of Transportation Publication containing highway construction specifications, as supplemented.

Public Grounds – Include:

a. Parks, playgrounds, trails, paths, other recreational areas and other public areas;

b. Sites for schools, sewage treatment, water treatment, and other publicly owned or operated facilities; and

c. Publicly owned or operated scenic and historic sites.

Public Hearing – A formal meeting held pursuant to public notice by a governing body or planning agency, intended to inform and obtain public comment, prior to taking certain actions in accordance with the Pennsylvania Municipalities Planning Code or prior to amending this ordinance.

Public Meeting – A forum held pursuant to notice under 65 Pa. C.S. A. 701 et seq., (Relating to open meetings).

Public Street – Streets ordained or maintained or dedicated and accepted by a Township, Borough, County, State, or Federal Government and open to public use.

Rational Formula - A rainfall to runoff relation used to estimate peak flow.

Recharge Volume (Re_v) - The volume of stormwater runoff from a site that must be infiltrated into the soil to promote the maintenance of groundwater recharge rates that existed prior to development.

Recreational Vehicle – A vehicular type of portable structure without a permanent foundation, which can be towed, hauled, or driven and is primarily designed as temporary living accommodation for recreational, camping and travel use, including travel trailers, truck campers, camping trailers, and self propelled motor homes.

Recreational Vehicle Park – Any site upon which two (2) or more recreational vehicles are, or are intended to be located for the purposes of camping, whether or not a fee is charged for such use.

Release Rate - The predevelopment peak rate of runoff from a site or subarea to which the post development peak rate of runoff must be reduced to protect downstream areas.

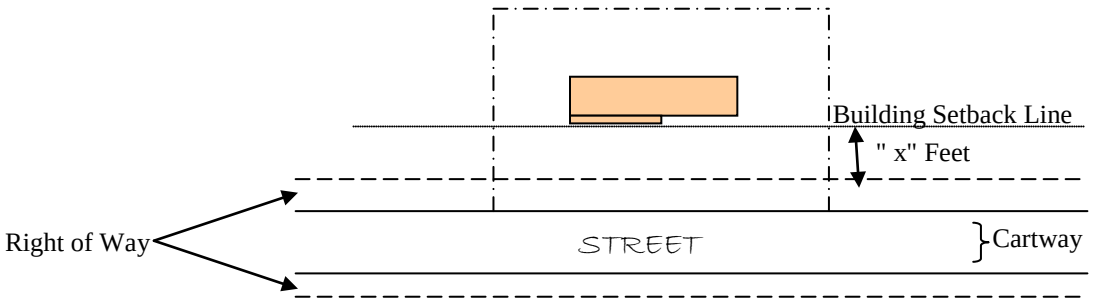
Renewable Energy Source – Any method, process or substance whose supply is rejuvenated through natural processes and, subject to those natural processes, remains relatively constant, including, but not limited to, biomass conversion, geothermal energy, solar and wind energy and hydroelectric energy and excluding those sources of energy used in the fission and fusion processes.

Resort – A group or groups of buildings containing guest rooms and furnishing services customarily provided by a hotel, including a restaurant and convention facilities and providing outdoor recreational activities on a large portion of the site such as horseback riding, tennis, skiing, swimming, shuffleboard, and golf.

Resubdivision – The subdivision or division of a tract or parcel of land that itself was part of a previously approved subdivision.
Retention Basin - An impoundment in which stormwater is stored and not released during a storm event. Stored water may be released from the basin at some time after the end of a storm.

Return Period - The average interval, in years, within which a storm event of a given magnitude can be expected to recur. For example, the 25-year return period rainfall would be expected to recur on the average once every twenty-five years, or in other words it would have a four percent (4%) statistical probability of occurring in any given year.

Right-of-Way – A corridor of land reserved or dedicated, in whole or part, intended to be occupied as a street, alley, pedestrian way, or other means of public or private transportation and access; or for an electric transmission line, oil or gas pipeline, water main, sanitary or storm sewer, or other similar use. A right-of-way includes the entire area reserved or dedicated for the use.



Rigid Pavement – A pavement structure that distributes loads to the subgrade having as one course a Portland cement concrete slab of relatively high bending resistance.

Riser - A vertical pipe extending from the bottom of a pond that is used to control the discharge rate from the pond for a specified return period (design storm).

Rooftop Detention - Temporary ponding and gradual release of stormwater falling directly onto flat roof surfaces by incorporating controlled-flow roof drains into building design.

Runoff - Any part of precipitation that does not enter the soil but runs across the surface of the land.

Safe Passage – The routing of peak runoff events, usually the 100-year design event, safely through a structure without failure of that structure.

Screen – A visual obstruction or suitable fence or wall at least six feet high or attractive, maintained shrub, hedge, or other appropriate vegetation a minimum of four feet high intended as a barrier to visibility, glare, and noise between adjacent properties.

Sediment Basin - A barrier, dam, and retention or detention basin located and designed to retain rock, sand, gravel, silt, or other material transported by water.

Sediment Pollution - The placement, discharge or any other introduction of sediment into the waters of the Commonwealth occurring from the failure to design, construct, implement or maintain control measures and control facilities in accordance with the requirements of this Ordinance.

Sedimentation – The process by which soil or other surface material is accumulated or deposited by wind, water, or gravity.

Seepage Pit/Seepage Trench - An area of excavated earth filled with loose stone or similar coarse material, into which surface water is directed for infiltration into the ground.

Select Granular Material or 2 RC – A material meeting the specifications in the Pennsylvania Department of Transportation Publication 408, when placed and compacted.

Setback Line – See Building Setback Line.

Sewage Enforcement Officer - The official of the local municipality who issues and reviews permit applications and conducts such investigations and inspections as are necessary to implement the rules and regulations of the Pennsylvania Sewage Facilities Act, Act 537 of 1966 (35 P.S. 750.1, et seq.).

Sewage System – Facilities developed and approved by the municipal Sewage Enforcement Officer and the PA DEP for the treatment and/or disposal of sewage.

Sewage System, Public or Community – A sewer collection and treatment system which serves facilities on a community, area-wide, or regional basis in which sewage is collected from buildings and piped by means of a conveyance system to a sanitary sewage treatment plant that is designed, approved, and permitted in accordance with the requirements of the PA DEP. Such systems shall include municipal and public treatment facilities as well as those systems installed, owned and maintained by private developers.

Sewage System, On-Lot – A sewage system serving a single residence, building, or user located on the same lot as the residence, building, or user being served which must be approved by the municipal Sewage Enforcement Officer and the PA DEP.

Sheet Flow - Runoff that flows over the ground surface as a thin, even layer, not concentrated in a channel.

Shoulder – The improved or graded portion of the highway, contiguous to the traffic lanes, for accommodation of stopped vehicles, emergency use, or lateral support of base and surface courses or pavements.

Sidewalk - A level improved concrete surface built in accordance with Article V of this Ordinance that is typically separated from, but located adjacent to a roadway, intended for pedestrian travel.

Sight Distance – The amount of unobstructed distance required to be provided at a street or driveway intersection which is considered adequate for a driver to be able to see in order to proceed in a safe manner. Sight distances shall be measured in accordance with PennDOT standards.

Sinkhole – A localized, gradual or rapid sinking of the land surface to a variable depth, occurring in areas of carbonate bedrock; generally characterized by a roughly circular outline, a breaking of the ground surface and a downward movement of soil into bedrock voids.

Soil-Cover Complex Method - A method of runoff computation developed by the NRCS that is based on relating soil type and land use/cover to a runoff parameter called Curve Number (CN).

Soil Group, Hydrologic - A classification of soils by the Soil Conservation Service (now NRCS) into four runoff potential groups. The groups range from A soils, which are very permeable and produce little runoff, to D soils, which are not very permeable and produce much more runoff.

Soil Survey of Union County – The most recent edition of a series of aerial photographs on which soils are classified according to a variety of characteristics and accompanying explanatory text, prepared by the United States Department of Agriculture, Soil Conservation Service (now NRCS).

Spillway - A depression in the embankment of a pond or basin that is used to pass peak discharge greater than the maximum design storm controlled by the pond.

Square Footage – The unit of measure used to express the area of a lot, tract, or parcel involved in a subdivision or land development; the length of a lot, in feet, times the width of a lot in feet (l x w = square footage area).

Stabilization – The proper placing, grading, and/or covering of soil, rock, or earth to insure their resistance to erosion, sliding, or other movement.

Staff – The staff of the Union County Planning Commission.

Storage Indication Method - A reservoir routing procedure based on solution of the continuity equation (inflow minus outflow equals the change in storage) with outflow defined as a function of storage volume and depth.

Storm Frequency - The number of times that a given storm "event" occurs, is expected to occur, or is exceeded on the average in a stated period of years. See "Return Period".

Storm Sewer - A system of pipes and/or open channels that convey intercepted runoff and stormwater from other sources, but excludes domestic sewage and industrial wastes.

Stormwater - The total amount of precipitation reaching the ground surface.

Stormwater Hotspot - A land use or activity that generates higher concentrations of hydrocarbons, trace metals, or toxicants than are found in typical stormwater runoff, based on monitoring studies. Typical Stormwater Hotspots are listed in Article V, Section 523 of this Ordinance.

Stormwater Management Credits - Incentive based non-structural stormwater management applications that can be incorporated into the site design process to promote water quality, groundwater recharge, volume control and other stormwater objectives. These include conservation of natural areas, disconnection of rooftop runoff, disconnection of non-rooftop runoff, sheet flow to buffers, grass channels and environmentally sensitive or low impact development.

Stormwater Management Facility - Any structure, natural or man-made, that, due to its condition, design, or construction, conveys, stores, or otherwise affects stormwater runoff. Typical stormwater management facilities include, but are not limited to, detention and retention basins, open channels, storm sewers, pipes, swales, and infiltration structures.

Stormwater Management Plan - The plan prepared by the Developer or her/his representative indicating how stormwater runoff will be managed, including data and calculations, at the particular site of interest according to this Ordinance.

Stormwater Management Plan, Act 167 - The plan for managing stormwater runoff in a particular watershed adopted by Union County and approved by the PA DEP as required by the Act of October 4, 1978, P.L. 864, Act 167 of 1978 (32 P.S. 680.1 et seq.).

Stream Enclosure - A bridge, culvert or other structure in excess of 100 feet in length upstream to downstream which encloses a regulated water of this Commonwealth.

Street – Includes street, avenue, boulevard, road, highway, freeway, parkway, lane, alley, viaduct and other ways used or intended to be used by vehicular traffic or pedestrians whether public or private.

a. **Street, Alley** – A street, usually located to the rear or side of properties otherwise abutting a street, used primarily for vehicular service access and a secondary means of access to abutting lots.

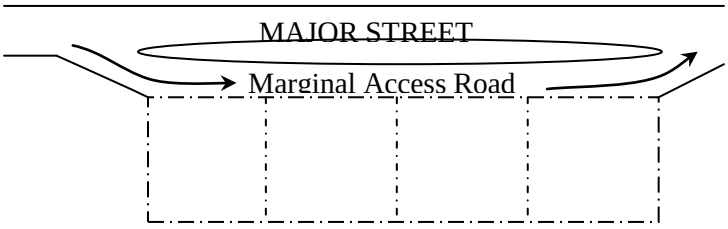
b. **Street, Arterial** – A major street with fast or heavy traffic of considerable continuity used primarily as a traffic artery connecting two or more neighborhoods or areas.

c. **Street, Collector** – A major street that carries traffic from local streets to arterial streets.

d. **Dead-end Street** – A street with only one means of vehicular traffic ingress and egress.

e. **Street, Local** – Any street that is not defined herein as either an arterial, collector street, or alley.

f. **Street, Marginal Access** - A local street parallel and adjacent to a major street (but physically separated from it) which provides both access to abutting properties and control of intersections with the major street.



g. **Street, Private** – All streets which are not public, including but not limited to, street maintained by private agreements, by private owners or association of property owners for which maintenance responsibility has been established; and including all private driveway access agreements or right-of-way for access.

h. **Street, Public** – Streets ordained or maintained or dedicated and accepted by a municipality, state, or federal government and open to public use.

Street Grade – The overall slope of a street or road between two points typically expressed as a percentage.

Structure – Any man-made object having an ascertainable stationary location on or in land or water, whether or not affixed to the land.

Subarea - The smallest drainage unit of a watershed for which stormwater management criteria have been established in the Stormwater Management Plan.

Subbase – The layers of specified or selected material of designed thickness placed on a subgrade to support a base course. Refer to Article V, Section 512, Figure 3 for typical roadway section diagram.

Subgrade – The top surface of a roadbed upon which the pavement structure and shoulders including curbs are constructed. Refer to Article V, Section 512, Figure 3 for typical roadway sections diagram.

Subdivider – Any landowner, agent of such landowner or tenant with the permission of such landowner who makes or causes to be made a subdivision of land or a land development.

Subdivision - The division or re-division of a lot, tract, or parcel of land by any means into two or more lots, tracts, parcels or other divisions of land including changes in existing lot lines for the purpose, whether immediate or future, of lease, partition by the court for distribution to heirs or devisees, transfer

of ownership or building or lot development: Provided, however, that the subdivision by lease of land for agricultural purposes into parcels of more than ten acres, not involving any new street or easement of access or any residential dwellings, shall be exempt.

a. **Lot Addition/Consolidation Subdivision –** Any subdivision that creates a lot that is to be added to an existing contiguous lot of record of separate ownership and where no new building lot or land development is proposed. It is solely intended to convey a parcel of ground located immediately adjacent to other property owned by the intended grantee, which is being added to the grantee's existing lot. The size of one lot will increase in an equal amount by which the size of an adjacent lot(s) will decrease. In the case of a Consolidation the entire area of one or more lots is added to an adjacent lot thereby in effect eliminating one or more original lots.

b. **Major Subdivision –** Any subdivision as defined herein involving six (6) or more lots, parcels of land or other divisions of land whether or not they involve new streets, additional utilities, or other improvements; all subdivisions not considered minor subdivisions for plan processing purposes.

c. **Minor Subdivision –** Any subdivision abutting an existing public street or road, cumulatively involving no more than five (5) lots, parcels of land, or other divisions of land from the same parent tract as of the effective date of the County Subdivision and Land Development Regulations (June 10, 1969), which does not require a new street, access easements, or the installation of any other improvements.

Subject Tract – The lot, parcel, or site proposed for a subdivision or land development.

Subordinate – Of lesser importance or rank operating under the control or authority of another.

Substantially Completed – When, in the judgment of the Commission and/or municipality holding escrow, at least ninety percent (90%) (based on the cost of the required improvements for which financial security was posted) of those improvements required as a condition for final approval have been completed in accordance with the approved plan, so that the project will be able to be used, occupied, or operated for its intended use.

Surface Course – One or more layers of a pavement structure designed to accommodate the traffic load, the top layer of which resists skidding, traffic abrasion, and the disintegrating effects of climate. The top layer is sometimes called: "Wearing Course".

Surveyor – A licensed professional land surveyor registered by the Commonwealth of Pennsylvania authorized to measure the boundaries of tracts of land, establish locations, and perform the requirements of a survey.

Swale - A low-lying stretch of land that gathers or carries surface water runoff.

Tack Coat – An application of bituminous material to an existing surface to provide bond with a superimposed course.

Technical Release 20 (TR-20) - Project Formulation-Hydrology , Computer Program. NRCS.

Technical Release 55 (TR-55) - Urban Unit Hydrology for Small Watersheds. NRCS.
Tent - A portable lodging unit generally made of skins, canvas, plastic or strong cloth stretched and usually sustained by poles, and dependent upon separate toilet and lavatory facilities.

Time of Concentration (Tc) **-** The time for surface runoff to travel from the hydraulically most distant point of the watershed to a point of interest within the watershed. This time is the combined total of overland flow time and flow time in pipes or channels, if any.

Topography – The general configuration of a land surface or any part of the earth's surface, including its relief and position of its natural and man-made features. The natural or physical surface features of a region, considered collectively as to its form.

Tract – See lot.

Traditional Neighborhood Development (TND) - An area of land developed for a compatible mixture of residential units for various income levels and nonresidential commercial and workplace uses, including some structures that provide for a mix of uses within the same building. Residences, shops, offices, workplaces, public buildings, and parks are interwoven within the neighborhood so that all are within relatively close proximity to each other. TND is relatively compact, limited in size and oriented toward pedestrian activity. It has an identifiable center and a discernible edge. The center of the neighborhood is in the form of a public-park, commons, plaza, square or prominent intersection of two or more major streets. Generally there is a hierarchy of streets laid out in a rectilinear or grid pattern of interconnecting streets and blocks that provides multiple routes from origins to destinations and are appropriately designed to serve the needs of pedestrians and vehicles equally.

Tract Residual or **Tract Remainder** – The lot or parcel created through subdivision that is the remaining portion of the parent tract after subdivision occurs. The residual property shall be considered as an integral part of the proposed subdivision and shall be required to meet the standards of this Ordinance.

Travel Trailer – See Recreational Vehicle.

Travel Trailer Park – See Recreational Vehicle Park.

Trip – A single or one-directional vehicle movement.

Unbuildable Site – A portion of a tract of land which due to physical or environmental conditions cannot support or is inappropriate for construction of a road, structure, or any other man-made improvement. Examples include wetlands, flood prone areas, sinkholes, landslide prone areas, endangered species habitats, and hazardous waste dumps.

Undeveloped Condition – Land in its natural state before development.

Watercourse - A permanent or intermittent stream of water; river; brook; creek; or a channel or ditch for water, whether natural or manmade.

Water Quality Volume (WQ_v) - The storage needed to capture and treat the runoff from 90% of the average annual rainfall. For Union County the depth of rain associated with 90% capture rate is 1.2 inches. Meaning on average that 90% of all annual rainfall events are 1.2 inches or less in volume.

Watershed – The entire region or area drained by a river or other body of water, whether natural or artificial, a drainage basin or sub-basin.

Waters of the Commonwealth - Any and all rivers, streams, creeks, rivulets, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs, and all other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

Water Supply System – A system for the collection, treatment, storage and distribution of potable water from the source of supply to the consumer.

Water Supply System, Public or Community - A water collection, treatment and distribution system which serves facilities on a community, area-wide, or regional basis in which water is collected and treated by means of a treatment plant that is designed, approved, and permitted in accordance with the

requirements of the PA DEP and from which treated water is then distributed to end users. Such systems shall include municipal and public treatment facilities as well as those systems installed, owned and maintained by private developers.

Water Supply, On-Lot - A water supply system serving a single residence, building, or user located on the same lot as the residence, building, or user being served. It typically takes the form of a well.

Wetland - Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, including swamps, marshes, bogs, fens, and similar areas.

Wind Farm - A single wind turbine exceeding 75 feet in height above grade or two (2) or more wind turbines of any size proposed and/or constructed by the same person or group of persons on the same or adjoining parcels for the purposes of generating power for other than personal consumption.

Wind Turbine - Any machine used to produce electricity by converting the kinetic energy of wind to electrical energy. Wind turbines consist of the turbine apparatus and any other buildings, support structures, or other related improvements necessary for the generation of electric power.

Wireless Telecommunications Site - A tract, parcel or leasehold of land that contains or is intended to contain a cellular communications antenna, its support structure, accessory buildings, parking, appurtenances, and other associated uses ancillary to cellular communications transmissions.

Woodland – A community of plants characterized by areas, groves, or stands of trees.

Zoning Ordinance - Zoning Ordinance enacted by the governing body of the county or a municipality within the county pursuant to the provisions of the Pennsylvania Municipalities Planning Code.

ARTICLE III

Plan Processing Procedures

ARTICLE III

PROCESSING, REVIEW, APPROVAL AND RECORDING OF PLANS

300 GENERAL

The procedures established in this Article shall apply to all subdivisions and land developments that require the approval of the Union County Planning Commission or require advisory review by the Commission in accordance with the Pennsylvania Municipalities Planning Code for those municipalities that have enacted subdivision and land development regulations, including those municipalities that have adopted this ordinance by reference but do not designate the Union County Planning Commission as their agency for approval.

301 CLASSIFICATION

Subdivisions and Land Developments are classified within this Ordinance and any Subdivision or Land Development must fall within one of the classifications prescribed herein. For each plan classification listed below please refer to Article IV for plan drafting requirements/contents and to Appendix A for a plan submission checklist.

A. Minor Subdivision – A minor subdivision is any subdivision abutting an existing public street or road, involving no more than five (5) lots, parcels of land, or other divisions of land from the same parent tract as of the effective date of the Union County Subdivision and Land Development Regulations (June 10, 1969), which does not require a new street, access easements, or the installation of any other improvements.

B. Major Subdivision – A major subdivision is any subdivision involving six (6) or more lots, parcels of land or other divisions of land whether or not they involve new streets, additional utilities, or other improvements; in effect all subdivisions not considered minor subdivisions for plan processing purposes.

C. Lot Addition/Consolidation– Any subdivision creating a lot that is to be added to an existing contiguous lot of record of separate ownership and where no new building lot or land development is proposed. It is solely intended to convey a parcel of land located immediately adjacent to other property owned by the intended grantee, which is being added to the grantee's existing lot. The size of one lot will increase in an equal amount by which the size of an adjacent lot(s) will decrease. In the case of a Consolidation the entire area of one or more lots is added to an adjacent lot thereby in effect eliminating one or more original lots. These plans are processed as Minor Subdivision Plans.

D. Land Development – The improvement of one lot or two or more contiguous lots, tracts, or parcels of land for any purpose involving: (1) a group of two or more residential or nonresidential buildings, whether proposed initially or cumulatively, or a single nonresidential building on a lot or lots regardless of the number of occupants or tenure; or (2) the division or allocation of land or space, whether initially or cumulatively, between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups, or other features.

The applicant should refer to the applicable Sections within this Article for the processing procedures that apply to the proposed activity. The applicant is also encouraged to meet with staff to determine which classification may be applicable to the proposed activity prior to the submission of an application.

302 EXEMPTIONS

The following activities shall be exempted from the requirements of this Ordinance with staff concurrence. Staff shall determine whether the exemptions cited herein shall be applicable; the decision of the staff may be appealed to the Commission.

A. The conversion of an existing single-family detached dwelling or single-family semi-detached dwelling into not more than three residential units, unless such units are intended to be a condominium.

B. The addition of an accessory building, including farm buildings, on a lot or lots subordinate to an existing principal building.

C. The addition or conversion of buildings or rides within the confines of an enterprise which would be considered an amusement park. This shall not apply to newly acquired acreage by an amusement park until proper authorities have approved initial plans for the expanded area.

D. The division of land by lease for agricultural purposes into parcels of more than ten (10) acres, not involving any new street or easement of access or residential dwellings. Upon the request of the property owner and upon receipt of a signed statement or letter from the landowner and buyer stating that such lands to be leased shall be used solely for agricultural purposes and does/will not involve any new streets or easement of access or residential dwellings, the Commission will forward a statement of exemption to the above parties.

E. When the replacement of a building is necessitated due to unpreventable "Acts of God" (e.g. including but not limited to fire, flood, storm damage) and meets the following conditions: (1) the structure has been left essentially uninhabitable; (2) repair of the damage to the existing structure is significantly more costly than to replace; (3) replacement of the structure will result in relatively the same size (does not increase by more than 15%), dimensions, layout, and lot access approved under a previous land development application; (4) the applicant can provide written confirmation from local governing officials to indicate that the proposal meets or exceeds all applicable land use controls regulated locally; and (5) the applicant provides written confirmation from appropriate State officials that the proposal meets or exceeds all applicable state regulations.

303 PRE-APPLICATION CONFERENCE AND REVIEW

A. The purpose of the Pre-Application Conference and Review is to afford an applicant opportunity to receive the advice and assistance of Commission staff on subdivision and land development procedures, the requirements necessary to achieve conformity to the standards and provisions of this Ordinance, and to alert the applicant to other factors pertinent to the design and effectuation of the subdivision or land development.

B. Although not required, a Pre-Application Conference and Review is strongly recommended before submission of a formal plan, particularly for proposals that involve the creation of new streets or storm water facilities, or plans for nonresidential structures.

C. The Pre-Application Conference and Review shall not constitute the filing of an application for approval of a plat, and all such meetings and/or review shall be considered informal. At the discretion of the applicant a proposal may be presented at a Commission meeting for informal review and comment.

304 PLAN SUBMISSION DEADLINES AND FILING DATES

A. Plan Submission Deadlines

1. Minor Subdivision Plans - Minor Subdivision Plans and supporting documentation may be submitted to the Office of the Union County Planning Department with a completed application form accompanied by all applicable fees at any time during normal office hours.

2. Major Subdivision and Land Development Plans – Major Subdivision Land Development Plans and supporting documentation may be submitted to the Office of the Union County Planning Department with a completed application form accompanied by all applicable fees at anytime during normal office hours; however, plans submitted less than fifteen (15) calendar days prior to the next regularly scheduled Commission meeting shall not be reviewed at that meeting, but will be reviewed at the succeeding meeting.

B. Official Plan Filing Dates

1. Minor Subdivision Plans – Minor Subdivision Plans shall be considered officially filed on the date in which a completed application form, applicable fees, and the requisite number of plans and other supporting documentation are submitted to the Office of the Union County Planning Department, and are acknowledged by staff as complete applications.

2. Major Subdivision Plans and Land Development Plans – Major Subdivision and Land Development Plans shall be considered officially filed at the next monthly meeting of the Union County Planning Commission following the delivery of a completed application form, applicable fees, and the requisite number of plans and other supporting documents to the Office of the Union County Planning Department, once the staff acknowledges that the applications are complete. Should the next monthly meeting of the Union County Planning Commission be more than 30 days following the delivery of the completed application to the Office of the Planning Department, the date of plan receipt shall be the 30th day following the filing of the application.

C. Effect of Filing Date - After an application has been officially filed in accordance with Section 304.B and while a decision is pending, no change in any zoning, subdivision, or other local governing ordinance or plan shall effect the decision on the application adversely to the applicant; and the applicant shall be entitled to a decision in accordance with the provisions of the local governing ordinances and regulations effective on the official plan filing date.

305 SKETCH PLAN

A. **Sketch Plan Applications**. Applicants are encouraged to submit a Sketch Plan during or after the Pre-Application Conference and Review in order to present the overall development concept of a particular tract before preparing and submitting a formal preliminary or final plan.

B. The Sketch Plan, like the Pre-Application Conference and Review, is not mandatory but is strongly recommended.

C. Presentation of a Sketch Plan shall not constitute the filing of an application for approval of a plat. The applicant may present the Sketch Plan at a Commission meeting for informal review and comment.

D. No formal action will be taken on a Sketch Plan submission, but the Planning Commission staff may, after review and evaluation of the proposal, notify the applicant in writing of findings and recommendations regarding preparation of preliminary or final plans.

E. The Planning Commission staff may complete a review of Sketch Plans within 30 days of delivery to the Planning Department Office and may communicate findings to the applicant within 15 days of completing the review; however, if such review is not conducted and findings are not communicated within these timeframes, no vested rights shall be deemed to accrue to the developer.

306 PRELIMINARY PLANS

A. **Preliminary Plan Applications.** With the exceptions specifically noted in this Ordinance, a Preliminary Plan is required for applications that meet any of the following conditions:

1. New streets, sanitary sewers, stormwater management facilities, or other improvements are proposed and are being offered for public dedication.

2. An applicant opts to forgo posting an improvements guaranty in accordance with Article VII of this Ordinance and intends to construct improvements prior to Final Plan approval and the sale of lots.

3. In all cases where an applicant proposes phasing of construction activities.

B. **Application Requirements.** All Preliminary Plan Applications shall include the following:

1. Twelve (12) copies of the Preliminary Plan in either black on white or blue on white prints. Additional copies shall be submitted if the proposed site fronts on or is intended to have a street access to a state highway or is a project of regional significance. The applicant is also responsible for providing the necessary copies for sewage planning review.

2. Three (3) copies of all reports, deed covenants, notifications, regulatory permit applications and reviews, and certifications which are not provided on the Preliminary Plan, including but not limited to, traffic engineer reports, stormwater management narrative and calculations, maintenance and use agreements, and sewage percolation test results.

3. Applications must include one (1) completed "Union County Subdivision and Land Development Application" form with all information legible and bearing the required signatures. An application form is contained in Appendix B.

4. Appropriate filing fee in the form of a check or money order made payable to the Union County Treasurer for an amount established by a fee schedule adopted by resolution of the Union County Board of Commissioners, which is available from the Union County Planning Department Office.

5. **Incomplete Applications**. The Director of the Union County Planning Department or the Director's designee shall have seven (7) days from the date an application was delivered to check the plans and accompanying documents to determine if on their face they are in proper form and contain all the information required by this Ordinance. If incomplete the application will be returned to the applicant with a statement that the application is incomplete within the seven (7) day period; otherwise the application shall be deemed accepted for filing. Acceptance shall not constitute a waiver of any

deficiencies or irregularities. An applicant may appeal a decision by the Director to the Planning Commission in accordance with Section 804.A of this Ordinance.

C. **Distribution of Copies.** Upon receipt of a completed application the Planning Commission Staff shall refer one (1) copy of the Preliminary Plan and any related documentation to the following individuals and agencies, as appropriate, for their review and report.

1. Municipal Governing Body.

2. Municipal Planning Commission if established and active.

3. Municipal Zoning Officer

4. County Planning Commission Engineer.

5. Pennsylvania Department of Transportation when the subdivision or land development will front on or will have a street proposing access to a state highway.

6. Pennsylvania Department of Environmental Protection for any necessary report with respect to sewer and water facilities, stream encroachments, wetlands, contaminated sites, and other environmental regulations.

7. Union County Conservation District for review and approval of erosion and sedimentation pollution control plan and other applicable regulations.

8. Union County Emergency Communications Center

9. Fire Company or protection district.

10. Water supplier.

11. Sewage treatment supplier/Sewage Enforcement Officer.

12. Municipalities within ½ mile of the proposed site if the project is expected to generate 200 or more vehicle trips per day or is otherwise deemed to be of regional significance.

D. **Phased Development.** If an applicant intends to develop land in phases, the Preliminary Plan application shall encompass the entire land area proposed for development and shall serve as a master plan.

E. **Optional Hearing**. The Commission may conduct a public hearing pursuant to public notice in order to inform the public and obtain comment prior to taking action on a preliminary plan application.

F. **Commission Action**. The Commission shall review and render a decision to approve the preliminary plan as submitted, to approve the plan subject to conditions specified by the Commission, or to disapprove the plan at a scheduled public meeting not later than ninety (90) days after such application for preliminary approval was officially filed, unless the applicant and the Commission mutually agree in writing to an extension of time or the applicant(s) voluntarily withdraws the plan from consideration. See Appendix C for a Time Extension Request Form.

G. **Written Decision**. The applicant shall be notified in writing of Commission action within fifteen (15) consecutive days following the decision. Said notice will be mailed to the last known address on file at the Planning Department Office with a copy of said notification provided as appropriate to the following:

1. Landowner if different from applicant.

2. Firm that prepared the plan.

3. Municipal governing body.

4. Municipal planning commission

5. Municipal zoning officer.

6. Municipal Sewage Enforcement Officer.

7. Union County Planning Commission Solicitor

8. Union County Planning Commission Engineer

9. Union County Conservation District

10. Other appropriate Federal, State, County and Local agencies.

H. **Acceptance of Conditions**. If an application for a Preliminary Plan is approved subject to conditions, such conditions shall be specified by the Commission and shall be accepted by the applicant in writing within 15 days after the written decision of the Commission was mailed or delivered to the applicant or the approval shall be automatically rescinded.

I. **Approval Pending Receipt of Additional Information**. When a Preliminary Plan is conditionally approved the applicant shall submit revised plans and necessary documents to the Commission for approval by the staff within 45 days of acceptance of the conditions. Failure to meet the conditions of plan approval within 45 days shall constitute an automatic disapproval of the plan unless the Commission and the applicant mutually agree upon a time extension. For plans conditionally approved, the date of official plan approval shall be the date on which all conditions are met.

J. **Specified Defects**. If an application for a Preliminary Plan is disapproved as filed, the decision shall specify the defects found in the application and shall identify the requirements that have not been met; citing the provisions of the statute or ordinance relied upon.

K. **Deemed Approval**. Failure of the Commission to render a decision and communicate it to the applicant in the manner prescribed herein shall be deemed approval of the application as presented.

L. **Preliminary Plan Certification.** After receipt of Preliminary Plan approval and compliance with all conditions of approval, the Commission will execute the plan approval certification with one (1) copy being retained by the Commission, one (1) copy for the applicant, and one (1) copy to be provided to the municipal governing body.

M. **Effect of Preliminary Approval.**

1. Approval of the Preliminary Plan application by the Commission shall constitute approval of the proposed subdivision and/or land development in regard to general design, character and intensity of development, general arrangement of streets, lots, structures, and other planned facilities, but shall not constitute final plan approval.

2. A Preliminary Plan shall not be accepted for recording in the office of the Union County Recorder of Deeds.

3. Preliminary Plan approval will be effective for a five (5)-year period from the date of the Commission's approval of the Preliminary Plan application; thereafter Final Plan application(s) for the entire project shall be made within five (5) years of Preliminary Plan approval unless the Commission grants a waiver by extending the effective time period of the approval.

4. After receipt of Preliminary Plan approval the applicant may proceed to construct the improvements required by this Ordinance and shown on the approved Preliminary Plan. The applicant shall indicate the intent to construct improvements in writing to the Commission prior to the start of construction.

5. Preliminary Plan approval shall not authorize the sale of lots or occupancy of proposed buildings shown on the plan regardless of whether or not proposed improvements have been installed.

307 FINAL PLANS

A. **Final Plan Applications.** An application for Final Plan review and approval may be submitted when the following conditions have been met:

1. The applicant has unconditional Preliminary Plan approval from the Commission.

2. Application is not required to be preceded by a Preliminary Plan in accordance with Section 306 of this Ordinance.

3. The improvements required by this Ordinance have been completed and acknowledged by the Commission and municipality as having been completed correctly as shown on the preliminary plan when said improvements are not assured by a type of guarantee as provided in Article VII of this Ordinance.

B. **Application Requirements.** All Final Plan Applications shall include the following:

1. Twelve (12) copies of the Final Plan in either black on white or blue on white prints. Additional copies shall be submitted if the proposed site fronts on or is intended to have a street access to a state highway or is a project of regional significance. The applicant is also responsible for providing the necessary copies for sewage planning review.

2. Three (3) copies of all reports, deed covenants, notifications, regulatory permit applications and reviews, and certifications which are not provided on the Final Plan, including but not limited to, traffic engineer reports, stormwater management narrative and calculations, improvements guaranty, maintenance and use agreements, and sewage percolation test results.

3. Applications must include one (1) completed "Union County Subdivision and Land Development Application" form with all information legible and bearing the required signatures. An application form is contained in Appendix B.

4. Appropriate filing fee in the form of a check or money order made payable to the Union County Treasurer for an amount established by a fee schedule adopted by resolution of the Union County Board of Commissioners, which is available from the Union County Planning Department office.

5. **Incomplete Applications**. The Director of the Union County Planning Department or the Director's designee shall have seven (7) days from the date an application was delivered to check the plans and accompanying documents to determine if on their face

they are in proper form and contain all the information required by this Ordinance. If incomplete the application will be returned to the applicant with a statement that the application is incomplete within the seven (7) day period; otherwise the application shall be deemed accepted for filing. Acceptance shall not constitute a waiver of any deficiencies or irregularities. An applicant may appeal a decision by the Director to the Planning Commission in accordance with Section 804.A of this Ordinance.

6. **Conformance with Preliminary Plan**. Final Plans shall conform in all-important respects with the approved Preliminary Plan; otherwise the plan submitted shall be considered as a revised Preliminary Plan.

7. **Improvements.** No Final Plan shall be approved unless the applicant has satisfactorily installed all improvements required by this Ordinance or has alternatively filed with the Commission an adequate financial guarantee in accordance with Article VII of this Ordinance to insure proper installation and construction of said improvements.

C. **Distribution of Copies.** Upon receipt of a completed application the Planning Commission Staff shall refer one (1) copy of the Final Plan and any related documentation to the following individuals and agencies, as appropriate, for their review and report.

1. Municipal Governing Body.

2. Municipal Planning Commission if established and active.

3. Municipal Zoning Officer

4. County Planning Commission Engineer.

5. Pennsylvania Department of Transportation when the subdivision or land development will front on or will have a street proposing access to a state highway.

6. Pennsylvania Department of Environmental Protection for any necessary report with respect to sewer and water facilities, stream encroachments, wetlands, contaminated sites, and other environmental regulations.

7. Union County Conservation District for review and approval of erosion and sedimentation pollution control plans and other applicable permits.

8. Union County Emergency Communications Center

9. Fire Company or protection district.

10. Water supplier.

11. Sewage treatment supplier/Sewage Enforcement Officer.

12. Municipalities within ½ mile of the proposed site if the project is expected to generated 200 or more vehicle trips per day or is otherwise deemed to be of regional significance.

D. **Phased Development**. The Final Plan may be submitted in phases as long as the following conditions are met:

1. Each phase shall cover a reasonable portion of the entire proposed subdivision or land development as shown on the approved Preliminary Plan.

2. Each phase, except for the last section, shall contain a minimum of twenty-five percent (25%) of the total number of units of occupancy as depicted on the approved Preliminary Plan unless the Commission approves a lesser percentage for one of the phases.

3. A schedule shall be submitted indicating the intended submission of final plans for remaining phases.

4. Final Plan approval for all phases shall be within five (5) years of Preliminary Plan approval.

E. **Commission Action**. The Commission shall review and render a decision to approve the Final Plan as submitted, to approve the plan subject to conditions specified by the Commission, or to disapprove the plan at a scheduled public meeting not later than ninety (90) days after such application for Final Plan approval was officially filed or after order of the court remanding an application, unless the applicant and the Commission mutually agree in writing to an extension of time or the applicant(s) voluntarily withdraws the plan from consideration. See Appendix C for a Time Extension Request Form.

F. **Written Decision**. The applicant shall be notified in writing of Commission action within fifteen (15) calendar days following the decision. Said notice will be mailed to the last known address on file at the Planning Department Office with a copy of said notification provided as appropriate to the following:

1. Landowner if different from applicant.

2. Firm that prepared the plan.

3. Municipal governing body.

4. Municipal planning commission

5. Municipal zoning officer.

6. Municipal Sewage Enforcement Officer.

7. Union County Planning Commission Solicitor

8. Union County Planning Commission Engineer

9. Union County Conservation District

10. Other appropriate Federal, State, County and Local agencies.

G. **Acceptance of Conditions**. If an application for a Final Plan is approved subject to conditions such conditions shall be specified by the Commission and shall be accepted by the applicant in writing within 15 days after the written decision of the Commission was mailed or delivered to the applicant, or the approval shall be automatically rescinded. It should be noted that it will be the general policy of the Commission to not give approval subject to conditions on Final Plans except when a state permit or approval is required or other minor deficiencies exist.

H. **Approval Pending Receipt of Additional Information**. When a Final Plan is conditionally approved the applicant shall submit revised plans and necessary documents to the Commission for approval by the staff within 45 days of acceptance of the conditions. Failure to meet the conditions of plan approval within 45 days shall constitute an automatic disapproval of the plan, unless the Commission and the applicant mutually agree upon a time extension. For plans

conditionally approved, the date of official plan approval shall be the date on which all conditions are met.

I. **Specified Defects**. If an application for a Final Plan is disapproved as filed, the decision shall specify the defects found in the application and shall identify the requirements that have not been met; citing the provisions of the statute or ordinance relied upon.

J. **Deemed Approval**. Failure of the Commission to render a decision and communicate it to the applicant in the manner prescribed herein shall be deemed approval of the application as presented.

K. **Final Plan Certification.** After receipt of Final Plan approval and compliance with all conditions of approval, the Commission will execute the plan approval certification with one (1) copy being retained by the Commission and one (1) copy to be provided to the municipal governing body. No Final Plan shall be recorded with the Office of the Union County Recorder of Deeds without bearing an original signature of the Planning Commission Chairperson and/or the Planning Director (in the case of plans not requiring Commission action) denoting approval of the plan.

L. **Assignment of Uniform Parcel Identifier**. Prior to the acceptance of a plan for recording by the Union County Recorder of Deeds the applicant shall obtain and show on the plans a Uniform Parcel Identifier for each parcel assigned by the Union County Tax Assessment Office.

M. **Recording**. Approval of the Final Plan application by the Commission shall entitle the applicant to record the plan in the Office of the Union County Recorder of Deeds once necessary approval signatures and certificates are executed. All Final Plans approved by the Commission shall be recorded by the applicant in the Office of the Union County Recorder of Deeds within ninety (90) days of the Commission approval date noted on the plan. Failure of the applicant to record the plan within this time shall render the plan null and void unless a time extension is requested by the applicant in writing and is granted by the Commission in writing prior to the expiration date. Under no circumstances shall a plan be recorded as an attachment to or an exhibit of the instrument of conveyance.

N. **Sale of Lots**. The sale of lots and/or construction and occupancy of proposed buildings in a subdivision or land development shall not commence until the approved Final Plan is filed and recorded with the Union County Recorder of Deeds Office. The Commission may seek preventive remedies, injunction or enforcement action in accordance with Article VIII, Sections 809, 810 and 811of this Ordinance if lots are sold or occupancy of buildings occurs prior to Final Plan approval.

O. **Effect of Ordinance Changes on Approval**. When an application has been granted Final Plan approval, no change in this Ordinance or in any applicable municipal ordinance shall affect adversely the right of the applicant to commence and to complete any aspect of the approved development in accordance with the terms of such approval within five (5) years. Where Final Plan approval is preceded by Preliminary Plan approval, the five (5) year period shall be counted from the date of Preliminary Plan approval.

308 MINOR SUBDIVISION

A. **Plan Applications**. For Minor Subdivision Plans as defined in this Ordinance the applicant may apply directly for Final Plan approval in accordance with the Final Plan processing procedures set forth in Section 307 with the exceptions herein noted. However when multiple Minor Subdivisions consisting of more than five (5) lots within any given tract have been or are expected to be effected, or when other circumstances warrant, the Commission may require

additional plan submissions, including those meeting full Preliminary and Final Plan procedures and requirements.

B. **Staff Approval**. A proposal subject to Minor Subdivision or Lot Addition, Consolidation, and Replot Plan classification may be approved, approved with additional conditions specified, or disapproved by Commission Staff when the following conditions are met:

1. No lot or tract of land shall be created or sold which is neither smaller than the minimum nor larger than the maximum lot sizes under this Ordinance or the applicable zoning ordinance.

2. Drainage easements or rights-of-way shall not be changed.

3. Existing accesses to affected parcels shall not be changed.

4. The proposed lots shall front on an existing public street and shall provide vehicular access that does not interfere with normal movement of traffic.

5. Street alignments are not changed.

6. In the case of Add-On, Lot Consolidation and Replot Plans, no new lots are created.

7. All applicable Ordinance provisions can be fully met. Staff shall not be authorized to grant modifications to this Ordinance; therefore, any application that includes a request for a modification shall not be processed as a minor subdivision under this Section. The same shall be the case if staff determines that a modification request is needed.

The intent of this provision is to expedite the process of reviewing certain Subdivision Plans by granting discretionary powers to the staff. The staff shall ensure that such proposals meet all applicable requirements of this Ordinance. The staff shall have 90-days to render a decision on plans processed under this Section; however, a reasonable attempt will be made to have a decision communicated to the applicant within 30 days.

C. A listing of all subdivisions approved utilizing this procedure during the preceding month will be provided to the full Commission at each monthly meeting for review.

D. Any applicant aggrieved by a decision of the Commission staff under this Section shall have the right to appeal such decision to the full Commission at their next regularly scheduled meeting. Requests for an appeal to a staff decision shall be submitted to the Commission in writing 15 or more days prior to the next regularly scheduled meeting using the form provided in Appendix D.

309 NON-JURISDICTIONAL PLAN PROCESSING REQUIREMENTS

The procedures set forth in this Section shall be followed by all applications where the Commission's jurisdiction is that of review rather than approval in those municipalities that have adopted their own Subdivision and Land Development Ordinance or a Subdivision Ordinance.

A. All review requests shall be accompanied by the following:

1. At least two (2) copies of the Plan that has been submitted to the municipality by the applicant, one (1) copy of which will be retained by the Commission as a file copy.

2. One (1) copy of all reports, notifications, and certificates that are not provided on the Plan, and which have been submitted to the municipality. This may include but not be limited to the stormwater narrative, E & S Plan approvals, and street name approval by Union County Emergency Services Department.

3. One (1)-review request signed by the municipal secretary or other authorized municipal official.

4. Appropriate filing fee if applicable.

B. A municipality shall not approve applications for Preliminary or Final Plan approval prior to receiving a report and a signed copy of the plan with the Commission Review Certification (See Appendix E-1) executed and/or "Review" stamp affixed, or until the expiration of the 30 days from when the plan was received by the Commission.

C. If a municipality acts upon any plan application prior to receipt of the County review or prior to the expiration of the 30 day period, the Commission shall not review, sign the Review Certification nor affix any applicable "Review" stamp to said plans.

D. **Plan Requirements**. All plans shall be prepared in conformance with the prevailing regulations of the applicable municipality and the Commonwealth of Pennsylvania, and all other relevant requirements of law.

E. **Staff Approval**. Upon receipt of complete copies of the plans, reports, and application the Commission staff will evaluate the plan based upon the applicable laws, sound planning principles, consistency with the County Comprehensive Plan, and probable effects of development. Commission staff generally ***will not*** review the plan for compliance with the municipal zoning ordinance and/or subdivision and land development ordinance unless specifically requested by the municipality. A review will be completed within thirty (30) days of receipt and provided to the following:

1. Municipal Planning Commission

2. Municipal Governing Body

3. Municipal Review Officer*

4. Applicant

5. Landowner if different than applicant

6. Firm that prepared the plan

*Where a municipality has a designated Review Officer the Commission may elect to only provide a copy of the review to that individual.

F. **Commission Certification**. After completion of the Commission's review a Preliminary or Final Plan may be presented to the Commission for signature at which time the Review Certification will be executed and/or a "Reviewed" stamp will be affixed to the Plan. See Appendix E-1.

G. **Deemed Review**. A plan that has not been reviewed within 30 days from the date of receipt from the municipality due to failure of the Commission staff to respond shall be signed to execute the Review Certification and/or affixed with a "Review" stamp once the plan is returned bearing municipal approval.

H. **Recording**. In accordance with the Pennsylvania Municipalities Planning Code the Union County Recorder of Deeds shall not accept Final Plans for recording that do not bear the signature of the Commission and/or the Commission "Review" stamp.

310 REVIEWS BY ENGINEER OR OTHER QUALIFIED PERSON

A. The Commission Engineer and/or other consultant experienced in a particular discipline shall review any application that involves engineering or other specialized considerations, and any comments received from said engineer and/or other consultants shall be considered a part of the application review and incorporated therein. Costs of such review by the Commission Engineer and/or other consultants shall be borne by the applicant.

B. Where a conflict of interest arises due to an application being filed by the Commission Engineer or other consultant or their office, the Commission shall appoint an independent engineer or consultant to review said application.

C. The Commission Engineer and/or other consultant experienced in a particular discipline will not review any application that involves engineering or other specialized considerations for Non-Jurisdictional Plans, unless the municipality requests such a review in writing and a mutual agreement is made regarding payment of said engineering and/or other consultant review fees. The review of these items will be deferred to the Municipal Engineer and/or other municipal consultant.

311 SITE INSPECTIONS

The Commission and staff representatives may visit any site proposed for subdivision and/or land development before any action is taken to approve or disapprove a plan in order to evaluate a plan application on the basis of the information presented.

ARTICLE IV

Plan Requirements

ARTICLE IV

SUBDIVISION AND LAND DEVELOPMENT PLAN REQUIREMENTS

400 GENERAL

All plans submitted for approval by the Union County Planning Commission shall meet the requirements specified in the following sections. Applicants are encouraged to meet with the Commission staff for advisory information and an explanation of these requirements prior to filing an application.

401 SKETCH PLAN

Sketch Plans should contain sufficient information to clearly indicate the character and extent of the proposed subdivision or land development and its relationship to existing conditions and facilities within the area it is to be located. Six (6) copies of the Sketch Plans should be submitted and include the following data and information, legibly drawn, but not necessarily to scale or showing precise dimensions:

A. Location sketch with sufficient detail, showing roads and significant community facilities to enable the Commission to locate the property.

B. Existing tract boundaries accurately labeled with the names of adjacent landowners.

C. Title Block indicating the applicant and/or landowner, municipality, date, individual that prepared the plan, scale of the drawing or notation "Drawing Not to Scale".

D. North Arrow

E. Significant topographic and physical features (i.e. water bodies, floodplains, streets, structures)

F. Proposed general street, parking, building and lot layout including the acreage of the area to be developed.

G. Proposed land use; if multiple land uses are proposed the general location of each land use shall be shown.

H. Statement explaining the methods of water supply and sewage disposal to be used.

402 DRAFTING STANDARDS

All plans shall be prepared in accordance with the following drafting standards: (Sketch Plans submitted under Section 401 of this Ordinance are exempt from the drafting standards prescribed herein)

A. The preparation of all plans shall adhere to the laws of the Commonwealth of Pennsylvania, including but not limited to, the Engineer, Land Surveyor, and Geologist Registration Law, May 23, 1945, P.L. 913, No. 367 (63 P.S. 148 et seq.) and the Landscape Architects Registration Law, January 24, 1966, 1965 P.L. 1527, No. 535 (63 P.S. 901 et seq.) as from time to time reenacted and amended.

B. Plans shall be either black on white or blue on white prints with a sheet size no smaller than eighteen by twenty-two (18 x 22) inches and no larger than twenty-four by thirty-six (24 x 36) inches. If the plan is drawn in two (2) or more sections, a key map showing the location of the sections shall be placed on each sheet with the match lines showing. All sheets shall be the same

size and numbered to show the relationship to the total number of sheets in the plan, i.e. “Sheet 1 of ___, Sheet 2 of ____, Sheet 3 of _____, etc”.

C. The Plan shall be clearly and legibly drawn at a scale of one (1) inch equals fifty (50) feet or one (1) inch equals one hundred (100) feet. (1” = 50’ or 1” = 100’) or other suitable scale if approved by the staff.

D. Dimensions shall be in feet and decimals to the nearest 100th of a foot; bearings shall be in degrees, minutes, and seconds.

E. Lot line descriptions shall read in a clockwise direction.

F. Surveys and other professional services associated with plan preparation shall be consistent with prevailing professional standards and the Laws of the Commonwealth

403 PRELIMINARY PLANS

All Preliminary Plan applications shall be prepared in accordance with this Section to provide sufficient design information to demonstrate conformance with the requirements of this Ordinance.

A. **Project Description and Location** – For Preliminary Plan applications the following shall be shown on, or where appropriate accompany, the plan.

1. A brief narrative describing the proposed project.

2. Title Block containing the following:

   a. Project name or identifying title including the words "Preliminary Plan"
   b. Municipality in which it is located
   c. Plan date and dates of all revisions
   d. Name and address of the owner or applicant

3. Name, address, and telephone number of individual or firm preparing the plan, assigned project number, name signature, registration number, and seal of engineer, surveyor or landscape architect involved in preparation of the plan.

4. North arrow.

5. Graphic and Written Scale.

6. Site location map of a sufficient size and scale to clearly show the location of the property, its relation to the surrounding area, including roadway system, municipal boundaries, and community facilities within ½ mile of the project area. May be taken from a U.S.G.S. quadrangle map with sheet name identified.

7. Deed book and page number and tax parcel identification number of the tract to be subdivided or developed.

8. Total acreage of the entire existing tract.

9. The entire tract boundary with bearings and distances showing the relationship of the proposed development to the entire tract and all prior conveyances, including acreage made from the parent tract since the inception of Union County Subdivision and Land Development Regulations on June 10, 1969.

10. Owners names, deed book and page numbers, and parcel identification numbers of adjacent unplotted land and the names, deed book and page numbers of all abutting recorded subdivisions.

11. Schedule or table of zoning district requirements, including lot area and bulk regulations, density, building and impervious coverage, and yard requirements. Show zoning for adjacent lands if different for tract to be subdivided or developed.

12. [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

13. List, with supporting evidence for the request, of any modifications that are requested in accordance with Section 803 of this Ordinance. Modifications granted shall be so noted on the Final Plan.

B. **Existing Site Characteristics –** The following existing conditions shall be shown on the plan:

1. Topographic contours shown at five (5) foot vertical intervals for land with average undisturbed slope less than twenty-five percent (25%) and, at a minimum, vertical intervals of ten (10) feet for slopes greater than 25%. One (1) or two (2) foot topographic contours may be required for more densely developed projects or when deemed appropriate by the Commission. Contours shall be accompanied by the location of the benchmark and notation indicating the datum used.

2. Steep Slopes delineated as those areas 16 to 25 percent and those areas greater than 25 percent.

3. Soil types and boundaries as shown in the Union County Soil Survey.

4. Prominent natural and topographic features including but not limited to watercourses, wetlands, drainage channels, sinkholes, rock outcroppings, regulatory 100-Year floodplains and floodways, tree masses, plant and wildlife habitat for rare, threatened, or endangered species, areas identified in the Union County Natural Areas Inventory, and other pertinent elements that may influence design. Additionally the Preliminary Plan shall indicate any proposed disturbance, encroachment, or alteration to such features when located upon the site proposed for development.

5. General vegetative cover of the site including a brief description and type (i.e. meadow, woodland, transitional).

6. A note on the plan indicating whether the site is/is not underlain by carbonate geology (limestone and dolomite).

7. Location of quarry sites, solid waste disposal areas, illegal dumps, EPA Superfund sites, and other potentially hazardous conditions on the site and on adjacent tracts.

8. Show approximate location and cite source information for significant historic and cultural features such as cemeteries, burial sites, archaeological sites, historic buildings, structures, plaques, markers, or monuments on the subject tract and within 200 feet on adjacent tracts.

9. All existing or recorded streets, roads, alleys, or other means of access and easements on or adjacent to the tract; including name or number, jurisdiction of ownership, right-of-way or easement width, width and condition of pavement and grades and, in the case of easements, the purpose for which it was created.

10. The location, ownership, and width of associated right-of-way or easement for any of the following features: existing buildings, storm and sanitary sewers, water supply lines, culverts, natural gas lines, on-lot sewage facilities, petroleum or petroleum products lines, power transmission and telephone lines, fire hydrants, stormwater management facilities, cellular towers, railroads, trails, wellhead protection areas, and other significant man-made features on or adjacent to the site.

11. Location and material of all existing permanent monuments and lot line markers.

C. **Proposed Site Conditions** – The following proposed conditions shall be shown on the plan:

1. Tabulation of site data, including total acreage of land to be subdivided or developed, number of lots, proposed density, number of dwelling units, existing land use, proposed land use, acreage of any proposed open space or other public/common areas, amount of impervious area, and the amount of tract residual. Multi-Family and non-residential shall also show the total square footage of all proposed buildings, percent of lot coverage, number of parking spaces required, and the number provided.

2. All required yards and building setback lines, with distances from the street centerline or street right-of-way lines, whichever is required by this Ordinance or applicable municipal Ordinances.

3. Lot layout with lot lines, approximate dimensions, lot square footage and acreage.

4. Block and lot numbers in a consecutive and clockwise or left to right order.

5. Exact location, name, width, and grade of proposed streets, alleys, driveways, or other means of access.

6. Location and width of rights-of-way and cartways.

7. Delineation of clear sight triangles and sight distances.

8. Design information for horizontal curves (i.e. degree of curvature, point of tangents, radius, arc length, chords, etc.)

9. Length of tangents between reverse curves.

10. Curb radii at intersections and intersection equalities between streets.

11. Curbs and gutter location.

12. Location of sidewalks and/or trails showing width, grades, and ramps for ADA accessibility requirements.

13. Location of streetlights, street name signs, and traffic control devices and/or signs and pavement markings.

14. Location and type of vegetation to be planted between curb and shoulder and right-of-way line.

15. Location and species of shade trees within street rights-of-way.

16. Lighting plan in accordance with Sections 514 and 517 of this Ordinance indicating the types, size, quantity and location of light fixtures.

17. Proposed public buildings and areas, playgrounds, reserved areas, open space areas, and any related conditions or restrictions.

18. Identification of buildings and historic features proposed to be demolished.

19. Location, width, and intended use of utility, drainage, and all other proposed easements.

20. Location and pipe diameter (I.D.) of storm water, sanitary sewer, and water mains and laterals to each lot.

21. Location of fire hydrants and other operational water main infrastructure.

22. Location of all proposed stormwater management and erosion control facilities.

23. Deep-probe and soil percolation test sites and proposed absorption field areas if on-lot sewage disposal facilities are proposed, including the identification of applicable isolation distances.

D. **Other Required Information and Reports to be Submitted**

1. Copies of private deed restrictions, covenants, grants of easements, homeowner and business association agreements or other restrictions.

2. Preliminary design of proposed bridges and culverts.

3. Typical street cross-section for each proposed street, and typical cross section for any existing street that will be improved as part of the application. Each cross section shall include the entire right-of-way width and show materials for base and surfacing, and method of construction.

4. Street centerline profile for each proposed street showing finished grade at a scale of one inch equals fifty feet (1” = 50’) horizontal and one inch equals five feet (1” = 5’) vertical or other appropriate legible scales.

5. A grading plan showing all final topographic contours and cross sections for cut and fill areas for general site development activities including parking areas, buildings, stormwater facilities, etc.

6. Typical curb and gutter design, materials, and method of construction.

7. Typical sidewalk or trail design, materials, and method of construction.

8. A Sewage Facilities Plan and/or Engineering Feasibility Study and required documentation in accordance with Section 520 of this Ordinance.

9. A Water Facilities Plan and required documentation in accordance with Section 521 of this Ordinance.

10. For proposals to be served by an existing utility, water and/or sewer service provider(s), a letter of intent or an executed agreement to provide service shall be provided from the service provider(s).

11. A Stormwater Management and Drainage Plan and narrative including runoff calculations with complete hydrologic and hydraulic design and analysis of all conveyance and control facilities in accordance with Section 523 of this Ordinance.

12. When the Preliminary Plan covers only a part of the applicant's holdings, a sketch of proposed streets, sanitary and storm sewer and water lines for the remainder of the tract will be required.

13. Estimated cost of all improvements including an itemized list of components of work with quantities, unit cost, and total cost. See Appendix F for an example.

14. For a Preliminary Plan indicating phased installation of improvements, a schedule shall be filed detailing all proposed sections as well as deadlines when it is expected that applications for Final Plan approval for each section will be filed.

15. A landscaping plan in accordance with Section 518 of this Ordinance including the names, sizes, quantities, and approximate location of all proposed plant materials if required.

16. An Erosion and Sedimentation Pollution Control Plan and narrative showing all erosion and sedimentation control measures, temporary as well as permanent, and a letter from the Union County Conservation District stating that the proposed measures meet all state, federal and local requirements.

17. If any portion of the project is in a floodplain area, then documentation shall be submitted indicating compliance with all applicable laws and regulations of the municipality in which the project is located and of the Pennsylvania Department of Environmental Protection (PA DEP).

18. Copies of required permits from the PA DEP and/or other appropriate regulatory agencies for any proposed alteration, excavation, relocation, encroachment or obstruction of a watercourse.

19. A Community Impact Analysis, Natural Features Analysis and Traffic Engineering Study shall be submitted in accordance with Sections 510 and 532 of this Ordinance for all subdivision or land development proposals of 25 lots or more, or for a proposal that generates more than 200 vehicle trips per day.

20. When the tract contains a natural gas pipeline, petroleum or petroleum products pipeline, an electric transmission line, telecommunications line, or other utility, a letter shall accompany the application from the owner or lessee of such utility stating the minimum setback distance and other requirements pertaining to such features. A valid occupancy permit from such utility provider would also be acceptable.

21. A letter of zoning compliance from the municipal zoning officer.

22. A letter from the Union County Emergency Communications Center verifying approval of proposed subdivision and road names.

23. When the land included in the subject tract has agricultural, woodland, or other natural resource protection easement(s) located within the tract, the application shall be accompanied by a letter from the party holding the easement(s) stating any conditions on the use of the land.

24. For lots requiring access onto a state route or highway, a PennDOT Highway Occupancy Permit (HOP) or a letter from PennDOT indicating a HOP can be obtained shall be submitted. For lots requiring access onto a Township or Borough street the appropriate municipal Driveway Permit shall be submitted if applicable.

25. [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

26. When the proposed subdivision or land development site contains or formerly contained hazardous substances or groundwater contamination a geotechnical report and a remedial investigation/feasibility study shall be provided. For sites that formerly contained hazardous substances or groundwater contamination, a letter from applicable state and federal agencies verifying that the site meets the remediation standards for the proposed use will suffice in lieu of a remedial investigation/feasibility report.

27. All applicable plan processing applications and review fees in accordance with Article III of this Ordinance.

E. **Certification and Notification**

1. Certificate, signature and seal, of the professional land surveyor certifying the accuracy of the survey. See Appendix E-2.

2. Certificate, signature, and seal of the landscape architect, surveyor, or professional engineer that all other details on and accompanying the plan are correct. See Appendix E-3 and E-4.

3. Certification of Ownership in the form of a notarized statement by the owner(s) certifying ownership of the property. See Appendix E-5.

4. Preliminary Plan Certification of Notification for Municipal Governing Body. This is required when improvements are being offered for dedication. See Appendix E-6.

5. Preliminary Plan Approval Certification block for Union County Planning Commission. See Appendix E-7.

6. Notation on the plan of any modifications granted by the Commission pursuant to this Ordinance.

7. Notation on the plan of any variances granted in accordance with the applicable zoning ordinance.

SECTION 404 FINAL PLANS

All Final Plan applications shall be prepared in accordance with this Section to provide sufficient design information to demonstrate conformance with the requirements of this Ordinance.

A. **Project Description and Location** – For Final Plan applications the following shall be shown on, or where appropriate, accompany the plan.

1. A brief narrative describing the proposed project.

2. Title Block containing the following:

   a. Project name or identifying title including the words "Final Plan"
   b. Municipality in which it is located
   c. Plan date and dates of all revisions
   d. Name and address of the owner or applicant

3. Name, address, and telephone number of the individual or firm preparing the plan, including assigned project number, name signature, registration number, and seal of engineer, surveyor or landscape architect involved.

4. North arrow.

5. Graphic and Written Scale.

6. Site location map of a sufficient size and scale to clearly show the location of the property, its relation to the surrounding area, including roadway system, municipal boundaries, and community facilities within ½ mile of the project area. May be taken from a U.S.G.S. quadrangle map with sheet name identified.

7. Deed book and page number and tax parcel identification number of the tract to be subdivided or developed.

8. Total acreage of the entire existing tract.

9. The entire tract boundary with bearings and distances showing the relationship of the proposed development to the entire tract and all prior conveyances, including acreage made from the parent tract since the inception of Union County Subdivision and Land Development Regulations on June 10, 1969.

10. Owners names, deed book and page numbers, and parcel identification numbers of adjacent unplotted land and the names, deed book and page numbers of all abutting recorded subdivisions.

11. Schedule or table of zoning district requirements, including lot area and bulk regulations, density, building and impervious coverage, and yard requirements. Show zoning for adjacent lands if different for tract to be subdivided or developed.

12. [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

13. List, with supporting evidence for the request, of any modifications that are requested in accordance with Section 803 of this Ordinance. Modifications granted shall be so noted on the Final Plan.

B. **Existing Site Characteristics –** The following existing conditions shall be shown on the plan:

1. Topographic contours shown at five (5) foot vertical intervals for land with average undisturbed slope less than twenty-five percent (25%) and, at a minimum, vertical intervals of ten (10) feet for slopes greater than 25%. One (1) or two (2) foot topographic contours may be required for more densely developed projects or when deemed appropriate by the Commission. Contours shall be accompanied by the location of the benchmark and notation indicating the datum used.

2. Steep Slopes delineated as those areas 16 to 25 percent and those areas greater than 25 percent.

3. Soil types and boundaries as shown in the Union County Soil Survey.

4. Prominent natural and topographic features including but not limited to watercourses, wetlands, drainage channels, sinkholes, rock outcroppings, regulatory 100-Year floodplains and floodways, tree masses, plant and wildlife habitat for rare, threatened, or endangered species, areas identified in the Union County Natural Areas Inventory, and other pertinent elements that may influence design. Additionally the Preliminary Plan shall indicate any proposed disturbance, encroachment, or alteration to such features when located upon the site proposed for development.

5. General vegetative cover of the site including a brief description and type (i.e. meadow, woodland, transitional).

6. A note on the plan indicating whether the site is/is not underlain by carbonate geology (limestone and dolomite).

7. Location of quarry sites, solid waste disposal areas, illegal dumps, EPA Superfund sites, hazardous waste contamination, and other potentially hazardous conditions on the site and on adjacent tracts.

8. Show approximate location and cite source information for significant historic and cultural features such as cemeteries, burial sites, archaeological sites, historic buildings, structures, plaques, markers, or monuments on the subject tract and within 200 feet on adjacent tracts.

9. All existing or recorded streets, roads, alleys, or other means of access and easements on or adjacent to the tract; including name or number, jurisdiction of ownership, right-of-way or easement width, width and condition of pavement and grades and, in the case of easements, the purpose for which it was created.

10. The location, ownership, and width of associated right-of-way or easement for any of the following features: existing buildings, storm and sanitary sewers, water supply lines, culverts, natural gas lines, on-lot sewage facilities, petroleum or petroleum products lines, power transmission and telephone lines, fire hydrants, stormwater management facilities, cellular towers, railroads, trails, wellhead protection areas and other significant man-made features on or adjacent to the site.

11. Location and material of all existing permanent monuments and lot line markers.

C. **Proposed Site Conditions** – The following proposed conditions shall be shown on the plan:

1. Tabulation of site data, including total acreage of land to be subdivided or developed, number of lots, proposed density, number of dwelling units, existing land use, proposed land use, acreage of any proposed open space or other public/common areas, amount of impervious area and the amount of tract residual. Multi-Family and non-residential site plans shall also show the total square footage of all proposed buildings, percent of lot coverage, number of parking spaces required and the number provided.

2. All required yards and building setback lines, with distances from the street centerline or street right-of-way lines, whichever is required by this Ordinance or applicable municipal Ordinances.

3. Lot layout with lot lines, exact dimensions, lot square footage, lot acreage and location and material of all permanent monuments and lot line markers, including a note that all monuments and lot line markers are set.

4. Block and lot numbers in a consecutive and clockwise or left to right order.

5. Exact location, name, width, and grade of proposed streets, alleys, driveways, or other means of access.

6. Location and width of rights-of-way and cartways.

7. Delineation of clear sight triangles and sight distances.

8. Design information for horizontal curves (i.e. degree of curvature, point of tangents, radius, arc length, chords, etc.)

9. Length of tangents between reverse curves.

10. Curb radii at intersections and intersection equalities between streets.

11. Curb and gutter location.

12. Location of sidewalks and/or trails showing width, grades, and ramps for ADA accessibility requirements.

13. Location of streetlights, street name signs, and traffic control devices and/or signs and pavement markings.

14. Location and type of vegetation to be planted between curb and shoulder and right-of-way line.

15. Location and species of shade trees within street rights-of-way.

16. Lighting plan in accordance with Sections 514 and 517 of this Ordinance indicating the types, size, quantity and location of light fixtures.

17. Proposed public buildings and areas, playgrounds, reserved areas, open space areas, and any related conditions or restrictions.

18. Identification of buildings and historic features proposed for demolition.

19. Location, width, and intended use of utility, drainage, and all other proposed easements.

20. Location and pipe diameter (I.D.) of storm water, sanitary sewer, and water mains and laterals to each lot.

21. Final vertical and horizontal alignment for sanitary sewer, water distribution system, and storm sewer drainage systems. Manhole locations, size and type of material shall be shown.

22. Location of fire hydrants and other operational water main infrastructure.

23. Location of all proposed stormwater management and erosion control facilities.

24. Deep-probe and soil percolation test sites and proposed absorption field areas if on-lot sewage disposal facilities are proposed, including showing of applicable isolation distances.

25. Assigned tax parcel identification numbers from the Union County Tax Assessment Office and addresses for each parcel as issued by the Union County Emergency Communications Center.

D. **Other Required Information and Reports to be Submitted**

1. Copies of private deed restrictions, covenants, grants of easements, homeowner and business association agreements or other restrictions.

2. Final design of proposed bridges and culverts.

3. Typical street cross-section for each proposed street, and typical cross section for any existing street that will be improved as part of the application. Each cross section shall include the entire right-of-way width and show materials for base and surfacing, and method of construction.

4. Street centerline profile for each proposed street showing finished grade at a scale of one inch equals fifty feet (1” = 50’) horizontal and one inch equals five feet (1” = 5’) vertical or other appropriate legible scales.

5. A grading plan showing all final topographic contours and cross sections for cut and fill areas for general site development activities including parking areas, buildings, stormwater facilities, etc.

6. Typical curb and gutter design, materials, and method of construction.

7. Typical sidewalk or trail design, materials, and method of construction.

8. A Sewage Facilities Plan, Engineering Feasibility Study and required documentation in accordance with Section 520 of this Ordinance.

9. A Water Facilities Plan and required documentation in accordance with Section 521 of this Ordinance.

10. For proposals to be served by an existing utility, water and/or sewer service provider(s), a letter of intent or an executed agreement to provide service shall be provided from the service provider(s).

11. A Stormwater Management and Drainage Plan and narrative including runoff calculations with complete hydrologic and hydraulic design and analysis of all conveyance and control facilities in accordance with Section 523 of this Ordinance.

12. When the Final Plan covers only a part of the applicant’s holdings, a sketch of proposed streets, sanitary and storm sewer and water lines for the remainder of the tract may be required.

13. Final cost of all improvements, including an itemized list of components of work, with quantities, unit cost, and total cost. See Appendix F for an example.

14. A fully executed Improvements Guaranty Agreement, including required financial surety (i.e. irrevocable letter of credit), that sets forth the responsibilities of all parties regarding the installation and inspection of the required improvements as per Article VII of this Ordinance. See also Appendix G.

15. [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

16. A landscaping plan in accordance with Section 518 of this Ordinance, including the names, sizes, quantities, and approximate location of all proposed plant materials, if required.

17. An Erosion and Sedimentation Pollution Control Plan showing all erosion and sedimentation control measures, temporary as well as permanent, and a letter from the Union County Conservation District stating that the proposed measures meet all state, federal and local requirements.

18. If any portion of the project is in a floodplain area, then documentation shall be submitted indicating compliance with all applicable laws and regulations of the municipality in which the project is located and of the PA DEP.

19. Copies of required permits from the PA DEP and/or other appropriate regulatory agencies for any proposed alteration, excavation, relocation, encroachment or obstruction of a watercourse.

20. A Community Impact Analysis, Natural Features Analysis and Traffic Engineering Study shall be submitted in accordance with Sections 510 and 532 of this Ordinance for all subdivision or land development proposals of 25 lots or more, or for a proposal that generates more than 200 vehicle trips per day.

21. When the tract contains a natural gas pipeline, petroleum or petroleum products pipeline, an electric transmission line, telecommunications line, or other utility, a letter shall accompany the application from the owner or lessee of such utility stating the minimum setback distance and other requirements pertaining to such features. A valid occupancy permit from such utility provider would also be acceptable.

22. Letter of zoning compliance from the municipal zoning officer is required for Final Plan approval.

23. Letter(s) from the appropriate Union County agencies verifying approval of final subdivision or land development name and road names, assigned lot addresses and tax parcel identification numbers.

24. When the land included in the subject tract has agricultural, woodland, or other natural resource protection easement(s) located within the tract, the application shall be accompanied by a letter from the party holding the easement(s) stating any conditions on the use of the land.

25. For lots requiring access onto a state route or highway, a PennDOT Highway Occupancy Permit (HOP) or a letter from PennDOT indicating a HOP can be obtained shall be submitted. For lots requiring access onto a Township or Borough street the appropriate municipal Driveway Permit shall be submitted if applicable.

26. When the proposed subdivision or land development site contains or formerly contained hazardous substances or groundwater contamination a geotechnical report and a remedial investigation/feasibility study shall be provided. For sites that formerly contained hazardous substances or groundwater contamination, a letter from applicable state and federal agencies verifying that the site meets the remediation standards for the proposed use will suffice in lieu of a remedial investigation/feasibility report.

27. All applicable plan processing applications and review fees in accordance with Article III of this Ordinance.

E. **Certification and Notification**

1. Certificate, signature and seal, of the professional land surveyor certifying the accuracy of the survey. See Appendix E-2.

2. Certificate, signature, and seal of the landscape architect, surveyor, or professional engineer that all other details on and accompanying the plan are correct. See Appendix E-3 and E-4.

3. Certification of Ownership in the form of a notarized statement by the owner(s) certifying ownership of the property. See Appendix E-5.

4. Final Plan Certification for Notification of Municipal Governing Body. This is required when improvements are being offered for dedication. See Appendix E-6.

5. Final Plan Approval Certification block for Union County Planning Commission. See Appendix E-11.

6. A four inch (4") x two inch (2") space in the upper left hand corner to accommodate the Certification Block of the Union County Recorder of Deeds Office.

7. A certificate of dedication of streets, sidewalks, and other public property. See Appendix E-12.

8. A notification placed on the Plan indicating any area and/or improvement(s) that are not to be offered for dedication. See Appendix E-13.

9. Notation on the plan of any modifications granted by the Commission pursuant to this Ordinance.

10. Notation on the plan of any variances granted in accordance with the applicable zoning ordinance.

SECTION 405 MINOR SUBDIVISION PLANS

All Final Plan applications for Minor Subdivisions as defined in this Ordinance may be prepared in accordance with this Section for those plans that demonstrate conformance with the requirements of this Ordinance and do not significantly alter the character of the area being subdivided.

A. **Project Description and Location** – For all Final Plan applications for Minor Subdivisions the following shall be shown on, or where appropriate, accompany the plan.

1. A brief narrative describing the proposed project.

2. Title Block containing the following:

   a. Project name or identifying title including the words "Final Plan-Minor Subdivision"
   b. Municipality in which it is located
   c. Plan date and dates of all revisions
   d. Name and address of the owner or applicant

3. Name, address, and telephone number of the individual or firm preparing the plan, including assigned project number, name signature, registration number, and seal of engineer, surveyor or landscape architect involved.

4. North arrow.

5. Graphic and Written Scale.

6. Site location map of a sufficient size and scale to clearly show the location of the property, its relation to the surrounding area, including roadway system, municipal boundaries, and community facilities within ½ mile of the project area. May be taken from a U.S.G.S. quadrangle map with sheet name identified.

7. Deed book and page number and tax parcel identification number of the tract to be subdivided or developed.

8. Total acreage of the entire existing tract.

9. The entire tract boundary with bearings and distances showing the relationship of the proposed development to the entire tract and all prior conveyances, including acreage made from the parent tract since the inception of Union County Subdivision and Land Development Regulations on June 10, 1969.

10. Owners names, deed book and page numbers, and parcel identification numbers of adjacent unplotted land and the names, deed book and page numbers of all abutting recorded subdivisions.

11. Schedule or table of zoning district requirements, including lot area and bulk regulations, density, building and impervious coverage, and yard requirements. Show zoning for adjacent lands if different for tract to be subdivided or developed.

12. [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

13. List, with supporting evidence for the request, of any modifications that are requested in accordance with Section 803 of this Ordinance. Modifications granted shall be so noted on the Final Plan.

B. **Existing Site Characteristics –** The following existing conditions shall be shown on the plan:

1. Topographic contours shown at five (5) foot vertical intervals for land with average undisturbed slope less than twenty-five percent (25%) and, at a minimum, vertical intervals of ten (10) feet for slopes greater than 25%. One (1) or two (2) foot topographic contours may be required when deemed appropriate by the Commission. Contours shall be accompanied by the location of the benchmark and notation indicating the datum used. Interpolated U.S.G.S contours may be utilized with the prior authorization of Commission staff. This requirement may be waived by staff.

2. Steep Slopes delineated as those areas 16 to 25 percent and those areas greater than 25 percent.

3. Soil types and boundaries as shown in the Union County Soil Survey.

4. Prominent natural and topographic features including but not limited to, watercourses, wetlands, drainage channels, sinkholes, rock outcroppings, regulatory 100-Year floodplains and floodways, tree masses, plant and wildlife habitat for rare, threatened, or endangered species, areas identified in the Union County Natural Areas Inventory, and other pertinent elements that may influence design. Additionally the Plan shall indicate any proposed disturbance, encroachment, or alteration to such features when located upon the site proposed for development.

5. General vegetative cover of the site including a brief description and type (i.e. meadow, woodland, transitional).

6. [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

7. Location of quarry sites, solid waste disposal areas, illegal dumps, EPA Superfund sites, hazardous waste contamination, and other potentially hazardous conditions on the site and on adjacent tracts.

8. Show approximate location and cite source information for significant historic and cultural features such as cemeteries, burial sites, archaeological sites, historic buildings, structures, plaques, markers, or monuments on the subject tract.

9. All existing or recorded streets, roads, alleys, or other means of access and easements on or adjacent to the tract; including name or number, jurisdiction of ownership, right-of-way or easement width, width and condition of pavement and grades and, in the case of easements, the purpose for which it was created.

10. The location, ownership, and width of associated right-of-way or easement for any of the following features: existing buildings, storm and sanitary sewers, water supply lines, culverts, natural gas lines, on-lot sewage facilities, petroleum or petroleum products lines, power transmission and telephone lines, fire hydrants, stormwater management facilities, cellular towers, railroads, trails, wellhead protection areas and other significant man-made features on or adjacent to the site.

11. Location and material of all existing permanent monuments and lot line markers.

C. **Proposed Site Conditions** – The following proposed conditions shall be shown on the plan:

1. Tabulation of site data, including total acreage of land to be subdivided or developed, number of lots, proposed density, number of dwelling units, existing land use, proposed land use, acreage of any proposed open space or other public/common areas, amount of impervious area and the amount of tract residual.

2. All required yards and building setback lines, with distances from the street centerline or street right-of-way lines, whichever is required by this Ordinance or applicable municipal Ordinances.

3. Lot layout with lot lines, exact dimensions, lot square footage, lot acreage and location and material of all permanent monuments and lot line markers, including a note that all monuments and lot line markers are set.

4. Block and lot numbers in a consecutive and clockwise or left to right order.

5. Location and width of rights-of-way and cartways.

6. Delineation of clear sight triangles and sight distances.

7. Identification of buildings and historic features proposed to be demolished.

8. Location, width, and intended use of utility, drainage, and all other proposed easements.

9. Location of all proposed stormwater management and erosion control facilities.

10. Deep-probe and soil percolation test sites and proposed absorption field areas if on-lot sewage disposal facilities are proposed including applicable isolation distances.

11. Assigned tax parcel identification numbers from the Union County Tax Assessment Office and addresses for each parcel as issued by the Union County Emergency Communications Center.

D. **Other Required Information and Reports to be Submitted**

1. Copies of private deed restrictions, covenants, grants of easements, homeowner and business association agreements or other restrictions.

2. A Sewage Facilities Plan, Engineering Feasibility Study and required documentation, in accordance with Section 520 of this Ordinance.

3. A Stormwater Management and Drainage Plan and narrative, in accordance with Section 523 of this Ordinance if applicable.

4. An Erosion and Sedimentation Pollution Control Plan and narrative showing all erosion and sedimentation control measures, temporary as well as permanent, and a letter from the Union County Conservation District stating that the proposed measures meet all state, federal and local requirements.

5. If any portion of the project is in a floodplain area, then documentation shall be submitted indicating compliance with all applicable laws and regulations of the municipality in which the project is located and of the PA DEP.

6. Copies of required permits from the PA DEP and/or other appropriate regulatory agencies for any proposed alteration, excavation, relocation, encroachment or obstruction of a watercourse.

7. When the tract contains a natural gas pipeline, petroleum or petroleum products pipeline, an electric transmission line, telecommunications line, or other utility, a letter shall accompany the application from the owner or lessee of such utility stating the minimum setback distance and other requirements pertaining to such features. A valid occupancy permit from such utility provider would also be acceptable.

8. Letter of zoning compliance from the municipal zoning officer is required for Final Plan approval.

9. Letter(s) from the appropriate Union County agencies verifying approval of final assigned lot addresses and tax parcel identification numbers.

10. When the land included in the subject tract has an agricultural, woodland, or other natural resource protection easement located within the tract, the application shall be accompanied by a letter from the party holding the easement stating any conditions on the use of the land.

11. For lots requiring access onto a state route or highway, a PennDOT Highway Occupancy Permit (HOP) or a letter from PennDOT indicating a HOP can be obtained shall be submitted. For lots requiring access onto a Township or Borough street the appropriate municipal Driveway Permit shall be submitted if applicable.

12. When the proposed subdivision or land development site contains or formerly contained hazardous substances or groundwater contamination a geotechnical report and a remedial investigation/feasibility study shall be provided. For sites that formerly contained hazardous substances or groundwater contamination, a letter from applicable state and federal agencies verifying that the site meets the remediation standards for the proposed use will suffice in lieu of a remedial investigation/feasibility report.

13. All applicable plan processing applications and review fees in accordance with Article III of this Ordinance.

E. **Certification and Notification**

1. Certificate, signature and seal, of the professional land surveyor certifying the accuracy of the survey. See Appendix E-2.

2. Certificate, signature, and seal of the landscape architect, surveyor, or professional engineer that all other details on and accompanying the plan are correct. See Appendix E-3 and E-4.

3. Certification of Ownership in the form of a notarized statement by the owner(s) certifying ownership of the property. See Appendix E-5.

4. Final Plan Approval Certification block for Union County Planning Commission. See Appendix E-11.

5. A four inch (4") x two inch (2") space in the upper left hand corner to accommodate the Certification Block of the Union County Recorder of Deeds Office.

6. Notation on the plan of any modifications granted by the Commission pursuant to this Ordinance.

7. Notation on the plan of any variances granted in accordance with the applicable zoning ordinance.

SECTION 406 LOT ADDITIONS AND LOT CONSOLIDATIONS

Lot Addition and Lot Consolidation Plans shall be subject to the plan requirements in this Section. In addition, surveys to correct survey errors of existing lots of record and/or for property transfer purposes, when no new subdivision or land development activity is proposed, shall be prepared in accordance with this Section.

A. **Project Description and Location** – For all Final Plan applications for Lot Additions and Lot Consolidations the following shall be shown on, or where appropriate, accompany the plan.

1. A brief narrative describing the proposed project.

2. Title Block containing the following:

   a. Project name or identifying title including the words "Lot Addition or Consolidation"
   b. Municipality in which it is located
   c. Plan date and dates of all revisions
   d. Name and address of the owner or applicant

3. Name, address, and telephone number of individual or firm preparing the plan, assigned project number, name signature, registration number, and seal of engineer, surveyor or landscape architect involved in preparation of the plan.

4. North arrow.

5. Graphic and Written Scale

6. Site location map of a sufficient size and scale to clearly show the location of the property, its relation to the surrounding area, including roadway system, municipal boundaries, and community facilities within ½ mile of the project area. May be taken from a U.S.G.S. quadrangle map with sheet name identified.

7. Deed book and page number and tax parcel identification number of the subject tract(s) and/or those to be subdivided

8. Owners names, deed book and page numbers, and parcel identification numbers of adjacent unplotted land and the names, deed book and page numbers of all abutting recorded subdivisions.

9. Total acreage of the entire existing tracts.

10. The entire tract boundary with bearings and distances showing the relationship of the proposed development to the entire tract and all prior conveyances, including acreage made from the parent tract since the inception of Union County Subdivision and Land Development Regulations on June 10, 1969.

11. Schedule or table of zoning district requirements indicating lot area, width and density.

12. [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

B. **Existing Site Characteristics –** The following existing conditions shall be shown on the plan:

1. All existing or recorded streets, roads, alleys, or other means of access and easements on the subject tract(s); including name or number, jurisdiction of ownership, right-of-way or easement width, and in the case of easements, the purpose for which they were created.

2. Location and material of all existing permanent monuments and lot line markers.

C. **Proposed Site Conditions** – The following proposed conditions shall be shown on the plan:

1. Lot layout with lot lines, exact dimensions, lot square footage, acreage and location and material of all permanent monuments and lot line markers, including a note that all monuments and lot line markers are set.

2. Assigned tax parcel identification numbers from the Union County Tax Assessment Office and addresses for each parcel as issued by the Union County Emergency Communications Center if applicable.

D. **Other Required Information and Reports to be Submitted**

1. Copies of private deed restrictions, covenants, grants of easements, homeowner association agreements or other restrictions.

2. Letter of zoning compliance from the municipal zoning officer is required for Final Plan approval.

3. When the land included in the subject tract has an agricultural, woodland, or other natural resource protection easement located within the tract, the application shall be accompanied by a letter from the party holding the easement stating any conditions on the use of the land.

4. Letter(s) from the appropriate Union County agencies verifying approval of final assigned lot addresses and tax parcel identification numbers where applicable.

5. All applicable plan processing applications and review fees in accordance with Article III of this Ordinance.

E. **Certification and Notification**

1. Certificate, signature and seal, of the professional land surveyor certifying the accuracy of the survey. See Appendix E-2.

2. Certification of Ownership in the form of a notarized statement by the owner(s) certifying ownership of the property. See Appendix E-5.

3. Final Plan Approval Certification block for Union County Planning Commission. See Appendix E-11.

4. A four inch (4") x two inch (2") space in the upper left hand corner to accommodate the Certification Block of the Union County Recorder of Deeds Office.

5. Notation on the plan of any variances granted in accordance with the applicable zoning ordinance.

6. Appropriate notation for lot additions, lot consolidations, tract surveys, correction of previous survey errors, etc. See Appendix E-14.

7. Notation that a permit for sewage disposal has neither been requested nor granted for the lot and that the grantee, his heirs and assigns, accept the responsibility for obtaining a permit for sewage disposal facilities if, and at the time, same are necessary.

ARTICLE V

Design Standards

ARTICLE V
GENERAL DESIGN STANDARDS AND REQUIREMENTS

500 GENERAL REQUIREMENTS

A. The principles, standards, and requirements of this Article shall be applied by the Commission in evaluating and reviewing proposed subdivision and land development plans, and shall be considered the minimum standards in all municipalities where the Commission's jurisdiction is that of an approval body as prescribed in Section 105 of this Ordinance. The Commission may impose more restrictive standards where it is deemed appropriate or necessary in order to protect the public health, safety or welfare.

B. Land shall be suited to the purpose for which it is to be subdivided or developed.

C. Applicants are encouraged to utilize the *Conservation Subdivision Design: Four Step Process* and the design principles illustrated in Appendix H.

501 HAZARDOUS AREAS

Those lands which are subject to hazards of life, health, or property as may arise from fire, flood, disease, geologic conditions, excessive slopes, contamination by hazardous materials and substances, unstable soils or soils of inadequate weight bearing strength, sites with very poor access, or considered to be uninhabitable for other reasons shall not be approved for development unless the hazards have been eliminated or adequate safeguards and/or remediation have been taken to the satisfaction of the Commission to prevent further aggravation to and damage from such hazards.

502 PLANNING AND ZONING CONSISTENCY

A. The location and design of all subdivisions and land developments shall conform to, and be generally consistent with, the Union County Comprehensive Plan, the municipal comprehensive plan, and any and all other plans and official maps duly adopted by the county or municipality in which the subdivision or land development is situated.

B. New subdivisions and land developments shall be coordinated with all existing or proposed developments on adjacent properties in order to provide for the harmonious development of the entire area.

C. The location and design of all subdivision and land developments shall conform to any applicable municipal zoning ordinance. The Commission shall not grant plan approval until the municipal zoning officer certifies that the plan is consistent with local zoning requirements.

503 BLOCKS

A. Blocks for residential developments shall generally have a minimum length of 500 feet and a maximum length of 1,600 feet.

B. Residential blocks shall be of sufficient depth to accommodate two (2) tiers of lots. Exceptions to this may be permitted for double or reverse frontage lots that border an arterial or collector street or where a barrier such as a watercourse or railroad is present.

C. The depth and width of blocks in nonresidential areas may vary from Sections 503.A and 503.B and shall be determined by the nature of the use in order to serve the public convenience. Nonresidential blocks shall be adequate to provide for safe and convenient traffic circulation, off-

street parking and loading areas, setbacks, and landscaping, as required by this Ordinance and applicable municipal zoning ordinances.

504 LOT STANDARDS

A. General Lot Standards

1. Lots shall be laid out to provide buildable areas, reasonable access, usable yards and open space areas, with minimum disturbance to the site. The soil, geologic, and topographic conditions of the site should be compatible with proposed lot uses.

2. The configuration of lots shall be based upon the minimum and maximum lot area requirements, the salient natural features, existing improvements, proposed improvements, and the adjacent development pattern.

3. Lot configurations should provide for flexibility in building locations while providing safe vehicular and pedestrian circulation.

4. Lots that are two (2) or more times the minimum lot area requirements shall be designed with configurations that allow for additional subdivision.

B. Specific Lot Requirements

1. Wherever feasible lot lines shall follow municipal boundaries rather than cross them. Where a lot is divided by a municipal boundary the minimum standards of the each municipality shall apply.

2. Side lot lines shall be substantially at right angles or radial to street lines.

3. All lots shall front on and have access to an existing or proposed public street or a private street in accordance with Sections 509 through 516 of this Ordinance.

4. Lots that require access to an arterial or collector street shall be avoided. Where lots adjoin arterial or collector streets, access to said lots shall be from local streets, service or marginal access roads.

5. Lots shall be laid out and graded to provide proper drainage away from all buildings.

6. All portions of a tract being developed shall be taken up in lots, streets, public grounds, recreation areas or other proposed uses so that remnants and landlocked areas shall not be created.

7. Corner lots shall have additional width to permit sufficient setbacks from both streets.

8. Double frontage lots are prohibited except where provided as reverse frontage lots to reduce driveway intersections along a street with a high volume of vehicular movements.

505 LOT OR AREA REQUIREMENTS

A. The minimum lot or area requirements shall be determined by the applicable municipal zoning ordinance, or where local standards have not been officially established, the standards of Table 505-1 and this Ordinance shall apply.

B. The prescribed minimum lot or area requirements may be increased by the Commission in those areas with development limitations as described in Section 501and elsewhere in this Ordinance in order to assure the health, safety, and general welfare of the public.

TABLE 505-1 Lot Dimensions

Type of Dwelling or Use	Central Sewer and Water[1]		Central Sewer Only		Central Water Only[2]		On-Lot Sewage and Water[2]	
	Area (sq ft)	Width (ft)	Area (sq ft)	Width (ft)	Area (sq ft)	Width (ft)	Area (sq ft)	Width (ft)
Single Family[3]	10,000	70	21,780	75	33,000	80	43,560	100
Two-Family Housing[4]	5,000	70	10,500	75	16,500	80	21,780	100
Multi-Family Housing[5]	3,000	30	Not Permitted		Not Permitted		Not Permitted	
Open Space Subdivisions Traditional Neighborhood Mobile Home Parks Campgrounds & RV Parks			**See Article VI**					
Commercial Industrial Institutional	Lot area for Commercial, Industrial and Institutional land uses shall be of sufficient size to incorporate all design elements of this Ordinance (parking requirements, sewage disposal, water supply, buffers and landscaping, etc.). At a minimum, lot area shall be the area required for sewage disposal in accordance with the PA DEP or 25% over the impervious surface square footage proposed for the lot, whichever is greater. In no case shall the width to depth ratio of the lot exceed 1:4.							

[1] - Areas of 15% or greater slope shall adhere to the minimum lot size and dimensions outlined under "Central Water Only".
[2] - Additional lot area may be required for proper installation of an on-lot sewage disposal system in accordance with PA DEP.
[3] - Includes mobile homes not part of a mobile home park.
[4] - Lot area for Two-Family is per unit but lot width is not on a per unit basis.
[5] - Lot area and lot width is per unit for Multi-Family.

506 BUILDING SETBACK LINES

Building setback lines shall conform to any applicable zoning ordinance. Where no such ordinance exists, minimum setbacks from the edge of the existing or future right-of-way, whichever is greater, and from property lines shall be in accordance with this Section.

A. Minimum Building Setbacks

1. Front Yard: 25 Feet

2. Side Yard: 10 Feet

3. Rear Yard: 25 Feet

B. Setback criteria for special types of subdivisions and land developments (i.e. Open Space Subdivisions, Traditional Neighborhood, Mobile Home Parks, Campgrounds & RV Parks) shall follow the provisions established in Article VI of this Ordinance.

507 MONUMENTS AND MARKERS

A. All pins, monuments, and markers shall be established by a professional land surveyor licensed in the Commonwealth of Pennsylvania. The work shall be performed in accordance with criteria recognized by the professional licensing board. No existing property line evidence shall be disturbed or removed in the course of establishing and locating boundaries, but shall be located and identified on a property survey plan and labeled as is deemed necessary to delineate ownership.

B. Monuments, pins, or markers shall consist of the following materials and dimensions and shall be embedded no less than thirty inches (30”):

1. Monuments - Concrete shall be at least 4”x4”x36” or similar circular area with a permanent distinguishing magnetic mark identifying the point on the property.

2. Pins and Markers - Steel and other similar durable all weather permanent marker materials shall be at least 36" x 1/2" diameter. Railroad spikes or similar products can be used to locate intersections of streets and property corners within paved surfaces.

3. For newly erected monuments it is recommended that a brightly colored wooden stake at least 1”x2”x36” be placed near the monument and/or colored flagging be placed on the monument. Survey caps and underground magnetic markers may also be utilized in conjunction with bars used for markers.

C. It is encouraged that all boundary surveys and monuments be located in reference to the established control for the Union County GIS mapping. Surveys and subdivisions that are located within 1,500 feet of a Union County GIS Monument shall be tied to that monument with bearings to the nearest second and dimensions to the nearest 100th of a foot to identify the coordinates of at least two monuments and the remaining annotated property information.

D. Monuments shall be placed at all newly established property corners and right-of-way lines to identify the intersection of adjoining properties, separately deeded properties of the same ownership, and access, utility, and drainage easements. Curved lines shall be identified at the points of tangent and changing degree of curvature.

E. In subdivisions of 10 lots or greater, a minimum of two permanent reference monuments shall be established in the external boundary of the subdivision where the bar is set in concrete to meet the standards of a monument.

F. Monuments for new subdivision or land development projects shall be set prior to Final Plan approval. Monuments disturbed during construction shall be re-established by the professional land surveyor promptly at the completion of construction activities, but in all cases prior to any lot sale or building occupation.

G. Maintenance or Removal - It shall be the responsibility of the subdivider or developer to see that all monuments or markers are properly maintained until such time as the lot or tract is conveyed. Maintenance of such monuments or markers shall then become the responsibility of the new owner. Any monuments or markers that are removed shall be replaced by a registered professional land surveyor at the expense of the person(s) removing them.

508 EASEMENTS

Easements for sanitary sewer, water supply, stormwater drainage facilities, public or private utilities, and pedestrian access shall meet the standards of this Section.

A. Easements shall be adjacent to property lines and street right-of-ways to the fullest extent possible.

B. Nothing shall be placed, planted, set or put within an area of an easement that would adversely affect the function of the easement or conflict with the easement agreement.

C. Utility Easements. The location and size of utility easements shall be reviewed and approved by the applicable utility company, but such easements shall not be less than 15 feet in width.

D. Drainage Easements. Where a subdivision or land development is traversed by an existing or proposed watercourse, drainage way, channel, or stream, a drainage easement shall be provided that conforms substantially with the line of such feature at a width adequate to preserve the unimpeded flow of natural drainage without damaging adjacent property. The minimum width of drainage easements shall be 15 feet.

E. Stormwater Facility Easements. Easements shall be reserved where stormwater drainage facilities exist or proposed and shall have a minimum width of 15 feet extending from the top of bank of any basin, channel, or berm. They shall be adequately designed to provide an area for the collection and discharge of water, the maintenance, repair, and reconstruction of the drainage facilities, the passage of machinery for such work, and provide ingress and egress from a public right-of-way. The easement shall remain unobstructed at all times and excavation, the placing of fill, buildings or other permanent structures or any other alterations that may adversely affect the flow of stormwater within any portion of the easement shall be prohibited.

F. Right of Access and Maintenance. All easements shall clearly identify who has the right of access and the responsibility for maintenance.

G. Easements, including easement maintenance provisions, shall be prepared in a format suitable for recording and shall be referenced in the deeds of the lots.

509 STREET SYSTEM GENERAL ARRANGEMENT -The following criteria shall be considered in the design of streets (including private streets not dedicated) in all subdivisions and land developments:

A. The arrangement of streets shall minimize congestion, avoid hazardous intersections, provide convenient and safe access to the property. They shall conform to the circulation plan of the County and municipal comprehensive plans, to official maps, and to such County, Municipal, and State road and highway plans as have been duly adopted.

B. Proposed streets shall be coordinated with existing or proposed streets on adjacent properties and shall be planned and designed for the continuation of existing streets in adjoining areas, the proper projection of streets into adjoining undeveloped or unplatted areas and the continuation of proposed streets to the boundaries of the tract being developed. No subdivision or land development shall be approved that will result in a tract or parcel of land being landlocked.

C. Streets shall be laid out to be harmonious with the existing and proposed site characteristics including, but not limited to, slope, best use, parcel layout, runoff, soil capacity, water table, floodplain, sight distance, traffic volume and safety, pedestrian use, traffic control, and parking.

D. Curvilinear streets should be utilized only where their use will be consistent with adjoining development patterns, topography, and natural features of the site.

E. Curvilinear streets shall not be used immediately adjacent to an existing grid street system without providing a transition that continues and projects the historic grid.

F. Streets shall be laid out to preserve the integrity of their design.

G. Streets shall be laid out to conform as much as possible to the topography in order to permit efficient drainage and utility systems, to require the minimum number of streets necessary for convenient and safe access, and to result in usable lots and satisfactory street grades.

H. Streets which provide ingress and egress to residential areas of single and multiple family dwellings shall be laid out to discourage and minimize their use by through traffic and to discourage excessive speeds; however, street connectivity into and from adjacent areas is encouraged and will generally be required.

I. If lots resulting from a subdivision or land development, including the tract residual, are large enough for re-subdivision, adequate street right-of-way to permit further subdivision and land development shall be provided as necessary.

J. Where a subdivision or land development abuts a collector or arterial street the Commission may require an internal street system, marginal access street, rear service street, reverse frontage lots, shared driveways, or such other treatment as will provide protection for abutting properties, reduction in the number of intersections and driveways with the collector or arterial street, and separation of local and through traffic. Direct individual driveway access to SR 0015, SR0045, SR0104, SR0304 and SR0192 shall be prohibited except where the Commission determines no feasible alternative exists for access, see Section 516.A.6.

K. Adequate vehicular and pedestrian access shall be provided to all lots.

L. Where streets continue into adjacent municipalities the applicant shall coordinate the design of the street with both municipalities in order to ensure uniform cartway widths, pavement cross sections, and other public improvements.

M. All proposed connections to existing streets shall be approved by the jurisdiction owning the existing streets.

N. Streets shall be designed with drainage grates that are safe for crossing by bicycles and horse drawn vehicles.

O. All streets being offered for dedication must meet the Pennsylvania Department of Transportation (Penn DOT) requirements for liquid fuel allocation.

P. When streets are offered for dedication the applicant shall provide the required right-of-way, street geometry, street section, drainage facilities, and traffic control. Additional infrastructure may be required where design standards warrant further improvements based on traffic impact studies.

Q. Proposed private streets (those not offered for dedication) shall meet all the design standards of this Ordinance, including but not limited to right-of-way, curbs, sidewalks, drainage, construction, traffic control, and setbacks.

R. Where a subdivision or land development abuts or contains an existing street right-of-way of improper width or alignment, the Commission may require the dedication or reservation of additional land sufficient to widen the street or correct the alignment. Where an additional dedication or reservation is required, all building setback lines will be measured from such dedicated or reserved right-of-way line.

S. The Commission shall have the right to determine the classification of roadway and street systems. This determination, if necessary, should be obtained prior to the design process.

510 TRAFFIC ENGINEERING REPORT

A. The applicant shall prepare a Traffic Engineering Report where any of the following conditions exist:

1. It is estimated that the subdivision or land development will generate over two hundred (200) vehicle trips a day based upon the Institute of Transportation Engineers generation rates.

2. The subdivision or land development will result in the creation of twenty-five (25) or more lots.

3. Current traffic problems exist in the local area, such as a high accident location, confusing intersection, or a congested intersection that directly affects access to the subdivision or land development.

4. The ability of the existing roadway system to handle increased traffic or the feasibility of improving the roadway system to handle increased traffic is limited.

5. The proposed development alters the transportation patterns on a public street providing access to the development or proposes the removal or relocation of a street.

B. The Traffic Engineering Report shall be prepared under the supervision of qualified and experienced transportation engineers with specific training in traffic and transportation engineering and at least two (2) years of experience in preparing Traffic Engineering Reports for existing or proposed developments.

C. The Traffic Engineering Report shall at minimum be prepared in accordance with Penn DOT, Publication 201, “Engineering and Traffic Studies”.

D. The scope of the traffic study shall be reviewed and approved by the Commission and Commission Engineer prior to commencement. The scope shall include the proposed intersection and roadway, as well as the surrounding impacted transportation facilities.

511 REQUIRED RIGHT-OF-WAYS AND CARTWAYS

A. Right-of-way and cartway widths contained in this Ordinance are the minimum required for public streets based upon the need to provide efficient movement of vehicles, serve utilities, accommodate ponding runoff, storage of plowed snow, emergency parking, temporary roadway adjustments during maintenance and accidents, and to accommodate future improvements.

B. The applicant shall certify prior to final plan approval of a subdivision or land development that title to any street right-of-way is free and clear of all liens and encumbrances and that no prior right-of-way has been granted to any utility or any other person.

C. Right-of-way and cartway widths should not be less than those required for all elements of the design cross sections, utility accommodation, and appropriate border areas, such as in cul-de-sacs, and by the Penn DOT Liquid Fuels Regulations. All plans shall be designed to provide for the entire right-of-way and cartway widths. Refer to Table 512-1 of this Ordinance for the minimum local road requirements and PennDOT Publication 72 M for arterial and collector streets.

D. The Commission shall reserve the right to require a right-of-way width greater than Penn DOT specifications and the standards set forth in Table 512-1 of this Ordinance for reasons of public safety and convenience, for acceleration and deceleration lanes into parking lots, streets, or high density residential developments, or to provide for future service roads.

E. The right of way and cartway width of a new public street that is a continuation of an existing street shall in no case be continued at a width less than the existing street. Where the right-of-way and cartway width of the new street is greater than the existing street, a transition area shall be provided, the design of which is subject to Commission approval.

F. All of the right-of-way shall be graded similar to the street grade. The slope of banks along street centerlines shall be no steeper than the following:

1. One (1) foot of vertical measurement for three (3) feet of horizontal measurement for fills.

2. One (1) foot of vertical measurement for two (2) feet of horizontal measurement for cuts.

   Where a cut or fill abuts a sidewalk there shall be a two (2) foot level area adjacent to the sidewalk and the fill slope shall not exceed three to one (3:1) slope.

G. Private right-of-ways shall be in accordance with those requirements prescribed for private streets in Section 512.L.5.

H. Where a subdivision or land development adjoins undeveloped acreage, new streets or reserved rights- of- way shall be provided to the boundary lines of the development.

512 STREET DESIGN STANDARDS - The following design criteria shall be considered the minimum standards in the design of local roads serving all subdivisions and land developments. Design criteria and standards for arterials and collectors shall be in accordance with PennDOT Publication 70M.

A. Streets shall be designed for a twenty (20)-year service life. If a street is to be utilized prior to completion of construction, the utilized portion must be structurally designed to support all anticipated loading without significant loss of the designed service life of the street.

B. Special consideration for future bus and truck routes must be taken into account in the design of streets for pavement thickness and width, sight distances and curb radii.

C. Streets located in floodplain or flood prone areas shall be designed and constructed to meet the requirements of the applicable Floodplain Management Ordinance and Section 526 of this Ordinance.

D. The existing Level of Service (LOS) on any adjacent street and intersection that will be affected by a proposed subdivision or land development shall not fall below LOS C if it is currently at LOS A, B, or C and shall not be further reduced if it is at LOS D, E, or F.

E. Traffic calming techniques should be considered with projects that result in high vehicular or pedestrian traffic, areas of commercial development, and transition areas between commercial and residential development. Techniques shall be employed based on Penn DOT, Publication 383.

F. **Design Speed**. The maximum design speed for local roads shall be as shown in Table 512-1.

G. **Vertical Alignment**.

1. Vertical curves shall be used in changes of grade exceeding one percent. In order to provide proper sight distances, the minimum length (in feet) of vertical curves shall be as computed in accordance with the Commonwealth of Pennsylvania, Title 67, Transportation, Chapter 441as from time to time reenacted, amended, and/or replaced.

2. The minimum grade on all local streets shall be one half (0.5) percent. The maximum grade on any street shall not exceed twelve (12) percent; however, grades not more than sixteen (16) percent may be used for limited distances less than 300 feet and shall be subject to the approval of the Commission prior to design. Refer to Table 512-1.

3. Grades at intersections shall be as flat as possible. The grade of the approach where the traffic is required to stop shall not exceed four (4) percent grade change for forty (40) feet or greater depending on the stacking length of the vehicles caused by high traffic volume areas. Refer to Table 512-2 for further design requirements.

H. **Horizontal Alignment**

1. Alignment between control points should conform to topography, following closely the natural contours, consistent with the design speed, the traffic volumes to be served, the right-of-way and construction cost.

2. Horizontal curves shall be designed in accordance with Table 512-1.

I. **Intersections**

1. Streets shall intersect as nearly as possible at right angles, and no street shall intersect another at an angle of less than seventy-five (75) degrees, or more than one-hundred and five (105) degrees.

2. No more than two (2) streets shall intersect at the same point.

3. Street intersections shall be designed with a minimum of fifteen (15) foot radii, but should at all times be designed to safely accommodate the intended vehicular traffic such as combination trucks and buses. Refer to Table 512-2 for additional minimum curb radii.

4. The corner sight distances or clear sight triangle for each design speed shall be as specified in Table 512-2. The clear sight triangle shall be maintained as open space with no visual obstructions (Refer to Figure 1).

5. Sight distances for all intersection, horizontal alignments, or vertical alignments shall be designed to achieve the required minimum safe sight distances and safe stopping distances as specified in accordance with the Commonwealth of Pennsylvania, Title 67, Transportation, Chapter 441 as from time to time reenacted, amended and or replaced.

6. Any street intersecting with another street shall not be located closer than the distances specified in Table 512-2. Distances shall be measured from the centerline of the two intersecting streets along the centerline of said local, collector, or arterial street.

7. Where a subdivision or land development is provided access by a single street, the Commission may require a boulevard-type entrance that would consist of two streets having a width of 20 feet each separated by an island having a width of 10 feet within a right-of-way having a width of 70 feet.

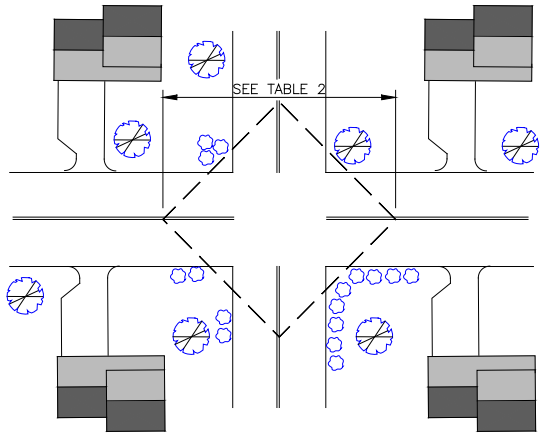


Figure 1

TABLE 512-1 – LOCAL ROAD DESIGN STANDARDS

CRITERIA/CONTEXT (See PennDOT Pub 70 M)	**Rural**	**Suburban Neighborhood**	**Town/Village**	**Private**
DESIGN SPEED	25 – 30 MPH	20-25 MPH	20-25 MPH	20-25 MPH
TRAVEL LANES	2	2	2	2
MINIMUM VERTICAL GRADE[1]	0.5%	0.5%	0.5%	0.5%
MAXIMUM VERTICLAL GRADE[2]	12%	12%	12%	12%
RIGHT-OF-WAY WIDTH (FEET)	50	50	50	50
CARTWAY WIDTH (FEET)	9	10	10	9
SHOULDER WIDTH (FEET)[3]	2	4	2	2
PARKING LANE WIDTH (FEET)	NA	8	8	NA
MINIMUM CROSS SLOPE	2%	2%	2%	2%
MAXIMUM CROSS SLOPE	6%	6%	6%	8%
HORIZONTAL CURVATURE (FEET)[3]	150	150	150	150
REVERSE CURVE OFFSET (FEET)	100	100	100	100
VERTICAL CURVES (FEET)	See (4)	See (4)	See (4)	See (4)

[1] – Streets constructed at minimum grades of 0.5% shall have a 3% cross slope minimum.
[2] –Maximum vertical grades in commercial and industrial areas shall not exceed 8%.
[3] –Shoulders in streets with curbs shall be constructed to cartway standards.
[4] – All sight distances shall be in accordance with the Commonwealth of Pennsylvania, Title 67, Transportation, Chapter 441 as from time to time reenacted and amended.

8. Any subdivision or land development, which can be expected to generate more than 200 vehicle trips per day shall provide any or all of the following facilities, as may be required to provide safe and efficient operation at any proposed driveway or street:

   a. acceleration or deceleration lanes;
   b. concrete median or median barriers;
   c. left-turn lanes;
   d. traffic signals;
   e. lane markers; and
   f. other such traffic control devices as may be necessary.

9. Turning lanes, medians, acceleration and deceleration lanes, traffic signals, lane markers and other such traffic control devices required shall be designed in accordance with Penn DOT Design Manuals.

J. **Roadway Cross Sections**

Minimum and desirable widths of roadway surface, shoulders, curbs, base, subbase material and surface courses shall be in accordance with the requirements specified in Table 512-1 and Table 512-3 below and Figure 2.

TABLE 512-2 - INTERSECTION DESIGN SPECIFICATIONS

DESCRIPTION	INTERSECTION TYPES				
	ARTERIAL WITH COLLECTOR	ARTERIAL WITH LOCAL[2]	COLLECTOR WITH COLLECTOR	COLLECTOR WITH LOCAL	LOCAL WITH LOCAL
MINIMUM DISTANCE BETWEEN CENTERLINES (Same Side/Opposite Side)	800'/800'	800'/300'	500'/300'	500'/300'	300'/150'
ANGLE OF STREET INTERSECTIONS[1]	90	90	90	75 TO 105	75 TO 105
LENGTH/GRADE CHANGE OF INTERSECTION APPROACHES	100'/4%	80'/4%	80'/4%	60'/4%	40'/6%
MINIMUM CURB RADIUS	50'	20'	35'	25'	20'
MINIMUM INTERSECTION SIGHT TRIANGLE DISTANCE[3]	300'	200'	200'	200'	150'

[1] – Angles should be designed to 90 degrees when possible.
[2] – Where the centerlines of local streets opening onto opposite sides of an arterial street are within 150 feet of each other, they shall be made to coincide by curving the streets to form a four-way intersection whenever possible.
[3] – This includes railroads. Refer to the detail for proper alignments.

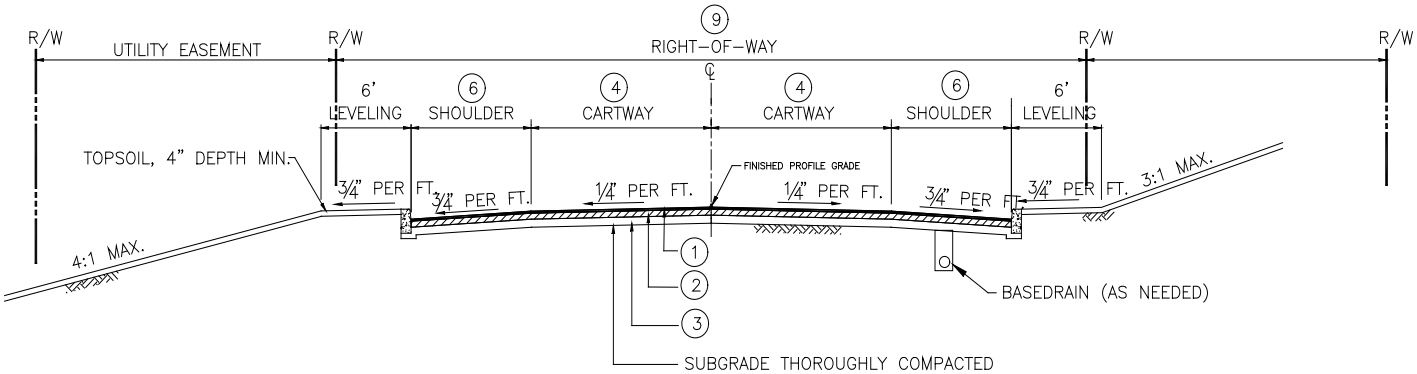
K. **Structures**

1. Bridges, culverts, walls, tunnels and other structures should be designed in accordance with the current AASHTO publication “Standard Specifications for Highway Bridges” and Penn DOT Design Manual, Part 4, “Structures”.

2. The design of all structures is subject to the review and approval of the Commission Engineer.

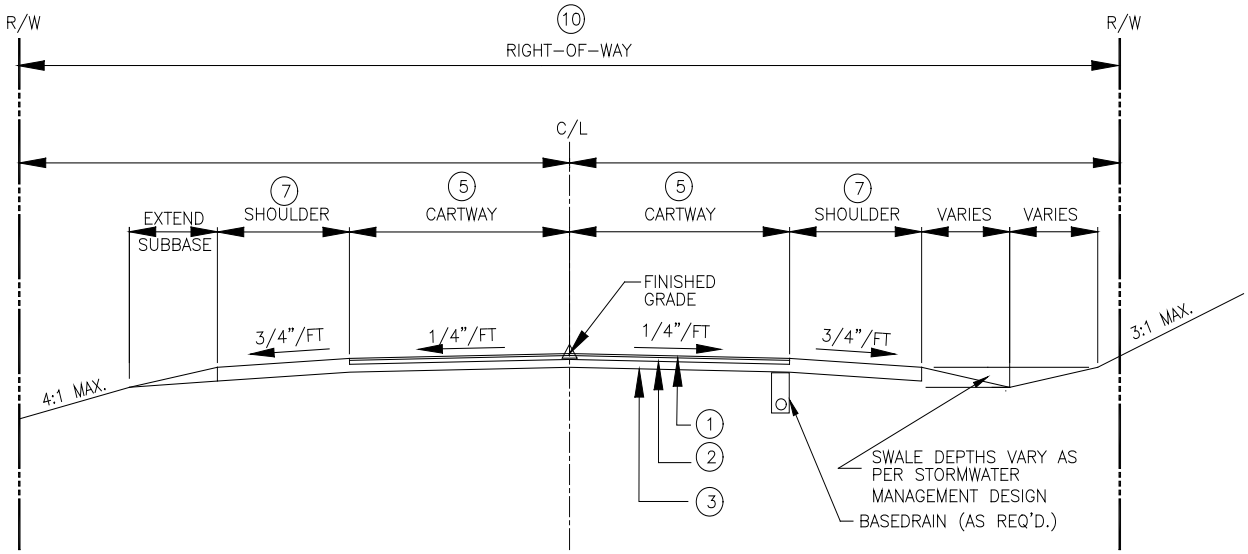
Figure 2

TYPCIAL ROADWAY SECTIONS



TYPICAL ROADWAY SECTION WITH CURBING

NOT TO SCALE



TYPICAL ROADWAY SECTION WITH SHOULDERS

NOT TO SCALE

(1) – ID-2 WEARING COURSE – SEE TABLE 3
(2) – BITUMINOUS CONCRETE BASE COURSE – SEE TABLE 3
(3) – 2A STONE SUBBASE – SEE TABLE 3
(4) – CARTWAY WIDTH (CURBED) – SEE TABLE 1
(5) – CARTWAY WIDTH (NON-CURBED) – SEE TABLE 1
(6) – SHOULDER WIDTH (CURBED) – SEE TABLE 1
(7) – SHOULDER WIDTH (NON-CURBED) SEE TABLE 1
(8) – PAVEMENT BASE DRAIN WHEN REQUIRED
(9) – RIGHT-OF-WAY LINE (CURBED)
(10) – RIGHT-OF-WAY LINE (NON-CURBED)

TABLE 512-3 – ROAD & PARKING AREA CONSTRUCTION STANDARDS

	TYPE[1]			
MATERIAL	**LOCAL**	**PRIVATE[2]**	**COMMERCIAL**	**INDUSTRIAL**
WEARING COURSE Superpave Asphalt Mixture Design, 9.5mm, PG 64-22, 0.0 to 0.3 million ESALS, SRL L[3]	1.5"	1.5"	1.5"	1.5"
BASE COURSE Superpave Asphalt Mixture Design, 25mm, PG 64-22, 0.0 to 0.3 ESAL's[4]	4"	3"	4.5"	4.5"
BINDER COURSE Superpave Ashpalt Mixture Design, 25 mm, PG 64-22, 0.3 to 3.0 million ESAL's	-	-	-	2"
COMPACTED 2A AGGREGATE SUBBASE	6"	6"	8"	8"

1 – Arterial and Collector Streets shall be constructed to PennDOT standards and approved by the Commission Engineer.
2 – Alternates as per PennDOT Publication 70M may be considered for private streets serving ≤5 lots and <100 ADT.
3 – Commercial and Industrial is 0.3 to 3.0 million ESAL's, SRL M
4 - Commercial and Industrial is 0.3 to 3.0 million ESAL's

3. For new construction projects, required bridge widths and design load structural capacities shall be designed using Penn DOT Design Manual, Part 2, "Rural Design Criteria Charts"

4. A 14'-0'' minimum vertical clearance, plus an allowance of six (6) inches to accommodate future resurfacing, shall be provided for all new and reconstructed facilities on or over collector and local road facilities.

5. A 16'-0" minimum vertical clearance, plus an allowance of six (6) inches to accommodate future resurfacing, shall be provided for all new and reconstructed facilities on or over Interstate, limited access, and arterial facilities.

6. For additional vertical clearance requirements refer to Penn DOT Design Manual, Part 2 and Penn DOT Design Manual, Part 4.

7. The minimum width criteria and minimum design load structural capacities shall be as indicated in the applicable Penn DOT Design Manual, Part 2, Design Criteria Charts.

L. **Special Streets**

1. Cul-de-Sacs

a. A cul-de-sac will not be permitted when a through street is feasible. The feasibility of a through street will be based on the physical features of the tract proposed for development, the potential for extension of the street to adjoining lands, restrictions imposed by other government regulations, and the ability to design to meet all other requirements of this Ordinance. When cul-de-sacs are proposed, the application shall be accompanied by a written analysis of the

merits of the design and the reasons that a through street would not be feasible. Approval of cul-de-sac streets shall be at the sole discretion of the Commission.

b. Cul-de-sacs shall not be used immediately adjacent to an existing grid street system without providing a transition that continues and projects the historic grid.

c. Cul-de-sacs shall be prohibited where it is possible to provide loop streets that provide better access for emergency vehicles, fewer restrictions on snow removal, and improved pedestrian access.

d. Permanently designed as such a cul-de-sac street shall not exceed one thousand (1,000) feet in length in a single family residential development, eight hundred (800) feet in length in commercial or industrial developments, and six hundred (600) feet in multi-family housing developments the length of which is measured from the centerline intersection with the through street to the center point of the turnaround.

e. Permanent cul-de-sac streets shall have a paved, circular turnaround with a minimum radius to the curb line of forty-five (45) feet and the minimum radius of the right-of-way lines shall be fifty (50) feet. Refer to Figure 3 for minimum geometrical requirements.

f. An interior island may be permitted in the cul-de-sac turnaround in residential areas at the discretion of the Commission.

g. The centerline grade on a cul-de-sac street shall not exceed ten (10) percent and the grade of the diameter of the turnaround shall not exceed four (4) percent.

h. Temporary cul-de-sacs may have circular, “T” shaped, or “hammerhead” shaped turnarounds. Turnarounds shall be constructed completely within the right-of-way. Restoration of paved areas within the right-of-way shall be the responsibility of the developer connecting to the temporary cul-de-sac.

i. Unless future extension is clearly impractical or undesirable and is clearly demonstrated by the applicant to the Commission, the turnaround right-of-way shall be placed adjacent to the tract boundary with sufficient additional width provided along the boundary line to permit extension of the street at full width.

TYPICAL CUL-DE-SAC DETAIL

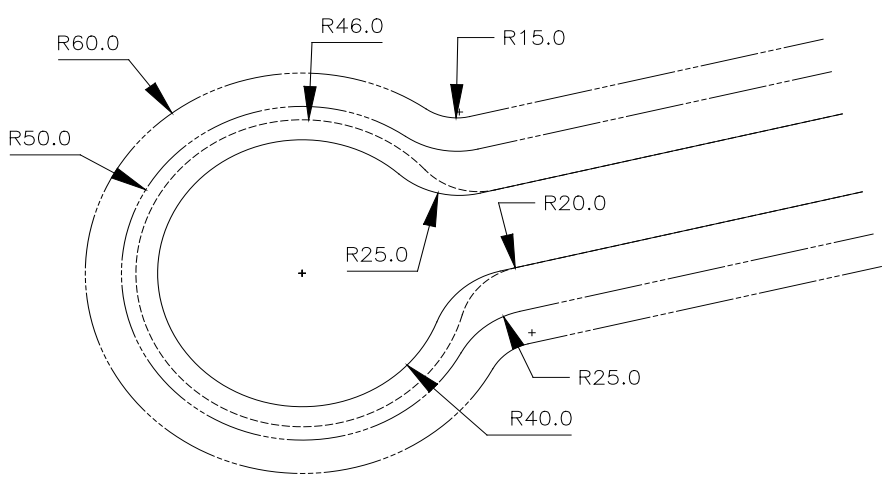


Figure 3

2. Dead End Streets

a. Dead end streets are prohibited unless designed as cul-de-sac streets or designed for future access to adjoining properties.

b. Any dead end street for access to an adjoining property or because of authorized phased development shall be provided with a temporary, all weather turnaround. The use of such turnaround shall be guaranteed to the public until such time the street is extended.

3. Half or Partial Streets - New half or partial streets are prohibited.

4. Alleys - Alleys may be permitted with the concurrence of the municipality in which they are located and shall comply with the following standards:

a. Alleys may not be used as the only means of access to a lot.

b. Alleys in residential developments shall have a minimum right-of-way width of 16 feet and a minimum cartway width of 12 feet.

c. Alleys in nonresidential developments shall have a minimum right-of-way width of 20 feet and a minimum cartway width of 16 feet. Where necessary, corners shall have a radius adequate to accommodate any large vehicles that may be expected to use the alley.

d. Dead end alleys shall not be permitted without an all weather turnaround, subject to the approval of the Commission and the Municipality.

e. The use of alleys for residential development shall be limited to PRD's, TND's, and Open Space Subdivisions with lot widths of 80 feet or less.

f. Alleys should be designed in accordance with the street standards in Section 512 of this Ordinance.

g. Alleys serving commercial developments should be sized to accommodate emergency vehicles and the vehicular turning movements desired.

5. Private Streets

a. All streets shall be planned to be offered for dedication as public streets.

b. Private streets shall be approved at the sole discretion of the Commission and shall not be approved without the concurrence of the governing body in the municipality in which the private streets are proposed.

c. Private streets shall be prohibited unless design objectives of the development warrant private ownership, and the municipality will not accept dedication of the street, and the following conditions are met:

1. The private street shall serve not more than five (5) lots;

2. A private right-of-way agreement shall be properly executed between the landowner granting the access and all affected parties abutting and adjoining said easement and shall create a private right-of-way not less than fifty (50) feet that shall run with the land and be available for the

use of all owners, present and future. This agreement at a minimum shall include all the provisions listed in Appendix I of this Ordinance and must be approved by the Commission and the Municipality prior to plan approval;

3. The adjoining landowners or an association of property owners must agree that the street(s) shall not be dedicated but shall be maintained by the adjoining landowners or association of property owners;

4. The adjoining landowners or association of property owners must agree to the maintenance of the private street in a mud-free condition and agree that the adjoining lot owners or an association of property owners will provide for repair, snow removal, and any other necessary maintenance;

5. The private street arrangement and agreement must be acceptable to the municipality in which it is situated; and

6. An agreement must be entered into by the adjoining landowners or an association of property owners that shall be recorded with the Union County Recorder of Deeds as part of the Final Plan and subsequently reflected in the deeds of all future lot owners. This agreement shall establish the conditions under which the street will be constructed and maintained as well as conditions controlling the offer of dedication and provisions for funds sufficient to restore the private street to the standards required for public streets should dedication occur. At a minimum the agreement shall stipulate the provisions contained in Appendix I of this Ordinance.

d. The private street system shall be designed and built to accommodate the type and volume of traffic anticipated to be generated and shall be constructed in accordance with the standards and criteria established in Sections 511, 512, 514 and 516 of this Ordinance.

e. A notation shall be included on the final plan and reflected in the deeds of sold lots identifying the street right-of-way as “Private” and identifying the entity responsible for maintenance.

f. All gates on private streets shall be located a minimum of thirty (30) feet from the public right-of-way and shall not open outward. Local fire department personnel shall have ready access to locking mechanisms on any gate restricting access.

g. Private streets shall be considered a required improvement and must be constructed prior to Final Plan approval or, in lieu of completion of improvements, the applicant must provide an acceptable guarantee to be approved by the Commission, Commission Engineer, Commission Solicitor, and the municipality in accordance with Article VII of this Ordinance.

513 STREET CONSTRUCTION STANDARDS

A. At a minimum all street construction activities shall be performed in strict accordance with Penn DOT, Publication 408 including all references, supplements, and revisions, with Table 512-3 of this Ordinance, and with applicable municipal ordinances and requirements in order to ensure proper serviceability.

B. **Liquid Fuels Requirement**. Any street or part thereof offered for dedication, or intended to be offered for dedication to a municipality for inclusion into the road system under this Ordinance, shall comply with the minimum requirements of Penn DOT covering the allocation of liquid fuel tax receipts and the standards outlined in this Ordinance.

C. All streets and related facilities shall be staked-out during construction by a qualified individual in the construction, engineering, or surveying field to ensure that infrastructure is constructed in accordance with the approved design drawings.

D. The applicant shall be responsible for implementing all necessary plans to control, mitigate, and eliminate any forms of pollution, disturbance, or destruction resulting from noise, odor, stormwater, and/or excessive loads or repetitions of loads that may occur during construction.

E. The applicant shall furnish the necessary guards, watchmen, warning lights and similar items necessary to maintain state highway and other street traffic in accordance with Penn DOT Publication 203 requirements. In general, the applicant shall not be permitted to interrupt traffic without specific arrangements for detouring traffic in accordance with Penn DOT requirements. When traffic cannot be detoured, a minimum of ½ the roadway width shall be open at all times with traffic control.

514 STREET IMPROVEMENTS

A. Curbs and Gutter

1. Curbing may be required by the Commission for:

    a. Stormwater management;
    b. Road stabilization;
    c. To delineate parking areas;
    d. Ten feet on each side of drainage inlets;
    e. At intersections;
    f. At corners; and
    g. At tight radii.

2. Curbs shall be required on public and private streets in subdivisions and land developments having lots 80 feet or less in width.

3. Curbs shall be constructed in accordance with Penn DOT Form 408 specifications as from time to time amended and /or replaced.

4. Concrete curb shall be eighteen (18) inches high, eight (8) inches wide, and have an exposed face of eight (8) inches. Refer to Figure 4. Alternative types of concrete curb can be approved at the Commission's discretion with the concurrence of the municipality.

5. Terminal concrete curbs or terminal radii shall be provided at the start or cut-off locations as needed for streets to transition from one pavement section to another.

6. Curbing shall be designed to provide a ramp for bicycles and/or wheelchair access at each intersection, at the principal entrances to buildings which front on parking lots, and at all crosswalks.

B. Shoulders

1. Paved shoulders and drainage swales shall be used instead of curbs when:

a. Shoulders are required by State or other law;

b. Soil or topographic conditions make the use of shoulders and drainage swales preferable; and

c. It is in the best interest of the community to preserve its rural character.

2. Shoulders shall be required on public streets where curbing is required. Refer to Figure 2.

3. The depth of shoulders shall be the combined depth of the surface and base courses. Refer to Figure 2 of Section 511 for the roadway pavement depths.

CURBING DETAIL

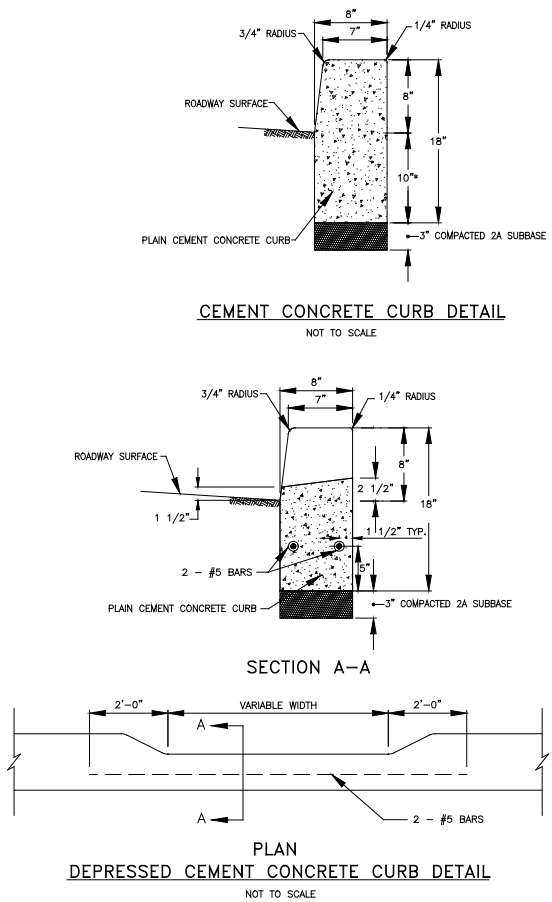


Figure 4

C. **Sidewalks and Pathways**

1. Sidewalks shall be required for streets where any of the following are met:

a. Distance to the nearest school is within State limits, which requires students to walk rather than be transported;

b. To continue existing sidewalks from adjoining subdivisions or land developments;

c. To provide access to community facilities such as schools, shopping centers, recreation areas, etc.;

d. In subdivisions and land developments with lots less than 80 feet in width, including planned developments; and

e. Within planned business, commercial, and industrial developments, apartment complexes, townhouses, condominiums, and mixed-use developments.

2. Subdivisions and land developments not requiring sidewalks that are located adjacent to or within a reasonable distance of an existing or future rails to trails, rails with trails, greenway or other public trail system, shall consider access from the proposed development to the greenway or trail system through a network of pathways in the design and layout of the plan.

3. Pedestrian way easements ten (10) feet wide may be required by the Commission through the center of blocks more than six hundred (600) feet long, to provide circulation or access to schools, playgrounds, shopping, or other community facilities.

4. Sidewalks, where provided, shall be located within and be parallel to the street right-of-way; however, alternative locations will be considered to preserve topographic features or to provide visual interest, provided the applicant shows that an alternative systems maintains safe and convenient pedestrian circulation to the satisfaction of the Commission.

5. Sidewalks, where provided, shall be on both sides of the street in front of all residential units. In lieu of sidewalks the Commission may alternatively approve pathways as part of a greenway network.

6. The minimum width of all sidewalks and pathways shall be five (5) feet. Wider widths may be necessary near major pedestrian generators and employment centers and to accommodate federal Americans with Disability Act (ADA) requirements.

7. There shall be a minimum four (4) foot planting strip of grass between the curb or shoulder and the sidewalk. This planting strip may be used for the location of underground utilities, streetlights, and street signs but shall not be used for the planting of street trees unless approval is granted by the local municipality.

8. The grades and paving of the sidewalks shall be continuous across driveways except in non-residential and high-density developments and in certain other cases where heavy traffic volume dictates special treatment.

9. The sidewalk shall be constructed of at least four (4) inches of Class AA concrete and a six (6) inch depth at intersections, and handicap and curb cut ramps and shall include rebar reinforcement. All curbs and sidewalks shall be underlain by four (4) inches of compacted crushed stone or gravel. Where sidewalks cross streets serving commercial and industrial uses the Commission may impose additional requirements.

10. Pathways may be constructed of other materials including pervious materials, provided that the proposed materials and construction are appropriate to the surrounding land use and to the expected volume of pedestrian traffic, and are approved by the Commission Engineer.

11. Sidewalks and pathways shall be laterally pitched at a slope toward the street not less than one eighth (1/8) inch per foot to provide for adequate surface drainage.

12. At corners and pedestrian street-crossing points, sidewalks shall be extended to the curb line with an adequate apron area for anticipated pedestrian traffic and curb cuts and ramps designed in accordance with ADA accessibility requirements.

13. Sidewalks and pathways shall not exceed a seven (7) percent grade. All sidewalks and ramps, e.g. slopes greater than five (5) percent, shall be designed in accordance with federal ADA accessibility requirements.

14. Minimum construction standards for sidewalks shall be in accordance with Penn DOT Form 408 specifications.

D. **Street and Parking Lot Lighting**

1. Street and parking lot lighting shall be provided in accordance with an illumination plan designed in conformance with the standards of the local electric utility company and coordinated with the local municipality.

2. Street lighting shall be provided by the applicant and shown on subdivision and land development plans as follows:

   a. At all new intersections in commercial and industrial areas;

   b. At all new intersections on existing arterial or collector streets;

   c. At the driveway, access, or entrance of any new commercial or residential development with ten lots or more or which enters onto an arterial road.

3. A lighting plan shall be provided to illustrate the locations of all free standing and wall mounted luminaries and the photogrametric contours at 0.1 intervals of candlepower.

4. Street lighting shall be provided in parking areas, along sidewalks, and between buildings as needed for public safety and convenience.

5. The placement, height, and shielding of lighting standards shall provide adequate lighting without hazard to drivers or nuisance to nearby residents and the design of the lighting standard shall be of a type appropriate to the development and the municipality. Refer to Table 514-1 for the design requirements.

6. Lighting types and levels shall be designed based on recommended intensities specific to the area being lighted; however, in no case shall lighting leaving the property exceed 0.5 foot-candles intensity.

7. All light fixtures, standards, and foundations shall be approved by the Commission and all lighting plans shall be prepared by a person qualified in the design field.

TABLE 514-1 - LIGHTING REQUIREMENTS						
DESCRIPTION	FIXTURE TYPE					
	NON-SHIELDED FIXTURES[1]		SHIELDED FIXTURES - 90° CUTOFF		SHIELDED FIXTURES - <90° CUTOFF	
	MAX. PERMITTED ILLUMINATION (FOOTCANDLES)	MAX. PERMITTED HEIGHT	MAX. PERMITTED ILLUMINATION (FOOTCANDLES)	MAX. PERMITTED HEIGHT	MAX. PERMITTED ILLUMINATION (FOOTCANDLES)	MAX. PERMITTED HEIGHT
RESIDENTIAL	0.20	10	0.30	15	0.50	15
AGRICULTURAL/ CONSERVATION	0.20	15	0.50	15	1.0	20
COMMERICAL/ INDUSTRIAL	0.30	20	1.50	20	4.0	25
INSTITUTIONAL	0.30	20	1.50	25	4.0	30
STREET LIGHTING	AS PER PENN DOT REQUIREMENTS					

[1] To be used for decorative lighting only.

E. **Street Signs**

1. Design and placement of traffic control, regulatory, and street signs shall be provided by the applicant as needed and shall follow the requirements specified in Penn DOT Publication 236M, Handbook of Approved Signs.

2. At least two street name signs shall be placed at each four-way street intersection and one at each "T" intersection. Signs shall be installed under light standards (where applicable) and be free from visual obstruction.

3. The design of street name signs shall be consistent, of a style appropriate to the municipality, of a uniform size and color, and erected in accordance with municipal standards.

4. Private streets shall be provided with street name signs in accordance with this Section and the plan shall note that it is the responsibility of the developer to install the street name signs for private streets.

5. The owner/developer shall be responsible to obtain and install all necessary street signs and posts in accordance with the materials and workmanship prescribed in Penn DOT Publication 408 and all other applicable federal, state, county and local requirements.

F. **Street Trees**

1. A minimum of two (2) street trees with a minimum caliper of two and one half inches (2 ½) shall be planted for every 100-feet of street on both sides of the street in an alternating manner in residential developments with densities greater than one (1) dwelling unit per acre and in commercial land developments.

2. The trees shall be of sound nursery stock and shall consist of species suitable for the site conditions and tolerant of roadside conditions. Native species are preferred and under no circumstances will any species recognized as invasive be permitted. See Appendix M for a list of invasive and native species.

Table 514-2 - [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

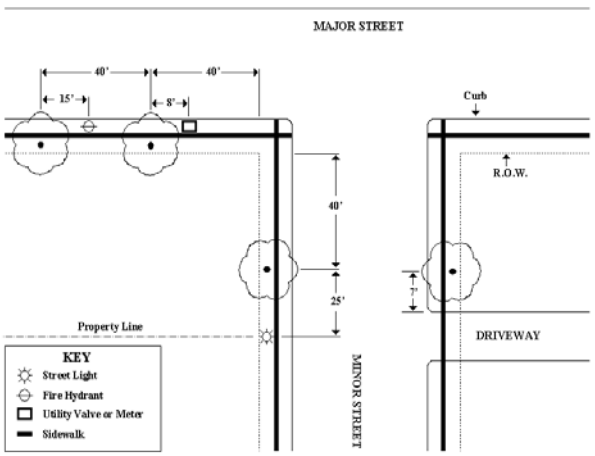


Figure 5

Figure 6

3. Tree selection shall follow the recommend selection criteria based on the site characteristics and species in Table 514-3 and Figures 5 and 6.

4. Trees shall be placed along right-of-way lines or setback from streets in a sufficient manner to maintain sight distance and safety.

515 STREET NAMES

A. All streets shall be named.

B. Continuations of existing streets shall be known by the same name.

C. Names for new streets shall not duplicate or closely resemble names of existing streets or approximate such names by the use of suffixes such as “lane”, “way”, “drive”, “court” or “avenue”.

D. All new street names are subject the to review and approval of the Union County Emergency Services Department and shall be consistent with the County Street Naming and Addressing Ordinance, policies, rules and/or regulations.

E. Notice from the Union County Emergency Services Department that the proposed new street names are acceptable shall be submitted prior to plan approval.

516 LOT ACCESS AND DRIVEWAYS

A. **Lot Access** – Access to any lot, tract, parcel, subdivision or development shall be provided in a manner that promotes a safe and efficient ingress and egress to a public street, limits the number of driveways, and promotes common points of ingress and egress that are adequate for existing and future growth, and in accordance with the following:

1. The Commission may disapprove any point of ingress or egress to any lot, tract, parcel, or development from any street or highway when the proposed ingress or egress would create unsafe conditions, reduce the capacity of the adjoining street or highway, or result in substandard circulation and impaired vehicle movement.

2. The Commission may require the applicant to provide ingress and egress to a particular lot or tract through the remainder of his property or other properties over which the applicant has control.

3. In approving ingress and egress from any State road or highway, the Commission can only approve those access points that are not in conflict with safety standards of the Penn DOT. A Highway Occupancy Permit is required for each access point onto a state highway.

4. The receipt of a Highway Occupancy Permit does not assume direct approval of the Commission. The Commission may require the applicant to reapply for a permit if the location of the Penn DOT approved access is in conflict with any provision of this Ordinance or if the Commission feels the location of the access will hinder the safe and efficient movement on any State road or highway or the proper development of the site.

5. In instances where access onto a municipal street is proposed as part of a subdivision or land development proposal, in a municipality which has an access or driveway permit requirement, the applicant shall include a copy of such driveway permit as part of the plan submission, or a disclaimer signed by the applicant acknowledging this permit requirement shall be placed on the plans.

6. Direct individual driveway access to SR 0015, SR 0045, SR 0104, SR 0304, and SR 0192 is highly discouraged and in most cases will be prohibited. However on a case-by-case basis direct access may be allowed if, in the sole discretion of the Commission: no other feasible access is available, the proposed driveway complies with Table 516-1 of this Ordinance, there is adequate sight distance in accordance with Section 516.C.8 of this Ordinance, and unsafe conditions are not otherwise created.

B. **Access over the lands of others.** Generally the same road construction specifications should apply within the easement/right-of-way over lands of others as shall apply within the property being subdivided/developed. It shall be the applicant's responsibility to make any required improvements subject to obtaining the necessary rights to do so over lands of others. When a "landlocked" parcel exists which is proposed to be developed or subdivided, the applicant shall give notice to prospective buyers that the access is not a public street.
A notice shall be given in three (3) forms:

1. A letter shall be submitted from the developer's attorney and shall contain specific identification of the plan by name and number and a statement that the developer has authorized the letter. The letter should also specify the following:

   a. Identify the location of the access road, describe the existing/proposed features: i.e. right-of-way width, length, cartway width, type of construction, etc.

   b. A list of all construction and design standards as specified in this Ordinance that cannot be met and reasons why the normal and customary standards cannot be met.

   c. A clear opinion of the developer's attorney that the applicant and all prospective purchasers will have either an easement or right-of-way across intervening lands of others. There must be a statement that access is not restricted in any manner, other than such limitation expressly contained in the letter.

2. Notation on the plan to be recorded shall reflect the above situation and be in a prominent location in larger and bolder type than customary plan notes. The note shall describe the location and design of the access road over land of others, identify all normal

construction or design standards which are not met, and describe the legal nature of the applicant's use (i.e. easement or right-of-way). Such note shall also relieve the County and the Municipality of any liability with respect to the provision of an access road by a statement placing such responsibility on either the seller and/or the buyer.

3. Preparation of proper legal documentation concerning the easement rights and responsibilities for that portion of the access easement over lands of others, for recording in the Union County Recorder of Deeds Office.

C. **Driveways** - Proposed driveways shall conform to any municipal standards that may exist within the applicable zoning ordinance or separately adopted driveway ordinance. Additionally, all driveways shall, at a minimum, be designed in accordance with the following:

1. All proposed lots shall be situated in such a fashion that safe and efficient driveway access can be provided onto a public or private street in accordance with this Section in order to facilitate the design of common points of ingress and egress that are adequate for existing and future growth.

2. Driveways shall not interfere with the normal traffic movement nor be inconsistent with the design, maintenance, and drainage of the street.

3. The Commission may require the joint or shared use of driveways to provide ingress and egress when such design would increase traffic safety by decreasing the potential for vehicular conflicts. In such cases a shared driveway maintenance and use agreement must be entered into by the respective property owners and recorded with the subdivision or land development plan.

4. In general all private driveway access shall be to a public street; however, private driveway access to private streets or across the lands of another shall only be permitted in the following circumstances:

   a. Private driveway access shall be permitted to private streets when said streets are permitted under Section 512.L.5 of this Ordinance.

   b. Private driveway access over lands of another shall be permitted only where:

      1. Not more than two (2) lots are involved;

      2. A complete right-of-way or easement agreement is prepared in a form acceptable to the Commission;

      3. The total number of lots involved shall include all existing and/or proposed lots utilizing the private driveway for access; and

      4. All of the other requirements of this Ordinance are met.

5. Requirements for private driveway access agreement(s) are as follows:

   a. The private driveway access easement shall be designed to provide a driveway to accommodate traffic volumes of 25 vehicles per day or less and shall be constructed to provide a sound, all-weather driving surface, reasonably smooth and free from mud, dust or standing water. In no case shall the materials have less than an eight (8) inch depth of 2A or 2RC aggregate subbase.

   b. A private right-of-way agreement shall be properly executed between the landowner granting access and all affected parties abutting and adjoining said easement and shall create a private right-of-way which shall be covenant running

with the land. This agreement shall, at a minimum, include the provisions contained in Appendix I of this Ordinance and shall be recorded with the Union County Recorder of Deeds as part of the Final Plan and subsequently reflected in the deeds of all future lot owners.

c. Additional design requirements shall be in compliance with Sections 511, 512, and 513 of this Ordinance.

6. **Driveway Classifications**. For the purposes of this Section driveways are separated into the following four classifications:

a. Minimum Use Driveway – A driveway normally used by not more than 25-vehicles per day (See Figures 7 & 8), such as: Single family dwellings, duplexes; or apartments with five units or less.

DESCRIPTION	SINGLE UNIT TRUCKS & PASSENGER CARS				BUSES AND COMBINATION TRUCKS			
	ROADWAY SPEED				ROADWAY SPEED			
	< 45 MPH		> 45 MPH		< 45 MPH		> 45 MPH	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
WIDTH (W)	10'	20'	10'	20'	12'	15'	12'	20'
RADIUS (R)	5'	15'	10'	25'	35'	50'	40'	55'

R = RADIUS

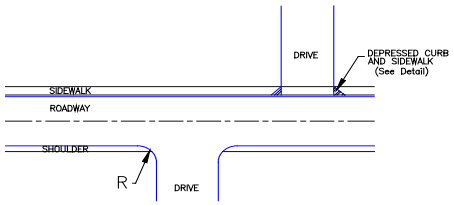


Figure 7

MINIMUM USE DRIVEWAY

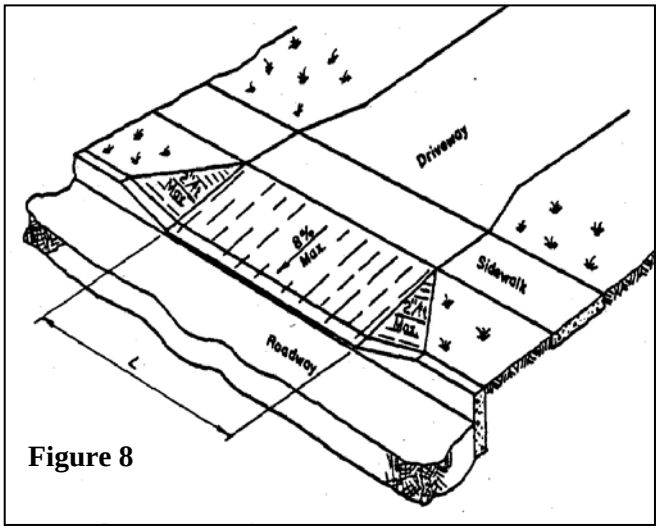
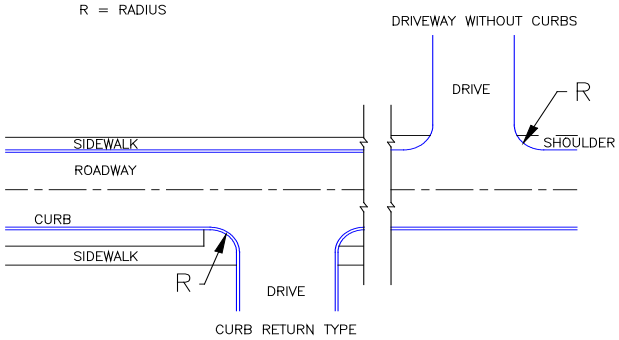


Figure 8

b. Low Volume Driveway – A driveway normally used by more than 25 vehicles per day but less than 750 vehicles per day (see Figure 9), such as: office buildings; elementary and junior high schools; or car washes.

DESCRIPTION	SINGLE UNIT TRUCKS & PASSENGER CARS				BUSES AND COMBINATION TRUCKS			
	ROADWAY SPEED				ROADWAY SPEED			
	< 45 MPH		> 45 MPH		< 45 MPH		> 45 MPH	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
W – ONE WAY	10'	20'	12'	20'	12'	15'	12'	20'
W – TWO WAY	20'	24'	20'	24'	22'	24'	22'	24'
RADIUS (R)	10'	15'	15'	25'	35'	50'	45'	55'

R = RADIUS



LOW VOLUME DRIVEWAY

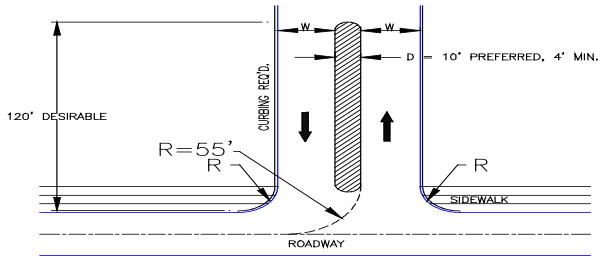
Figure 9

c. Medium Volume Driveway – A driveway normally used by more than 750 vehicles per day but less than 1,500 vehicles per day, which does not normally require traffic signalization (See Figure 10), such as: motels; Fast food restaurants; or service stations and small shopping centers or plazas.

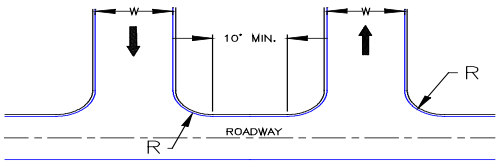
d. High Volume Driveway – A driveway normally used by more than 1,500 vehicles per day, which often requires traffic signalization (See Figure 11), such as: large shopping centers; or multi-building apartment or office complexes.

DESCRIPTION	SINGLE UNIT TRUCKS & PASSENGER CARS				BUSES AND COMBINATION TRUCKS			
	ROADWAY SPEED				ROADWAY SPEED			
	< 45 MPH		> 45 MPH		< 45 MPH		> 45 MPH	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
WIDTH (W)	14'	28'	14'	28'	14'	28'	14'	28'
RADIUS (R)	15'	30'	15'	25'	45'	55'	50'	55'

R = RADIUS



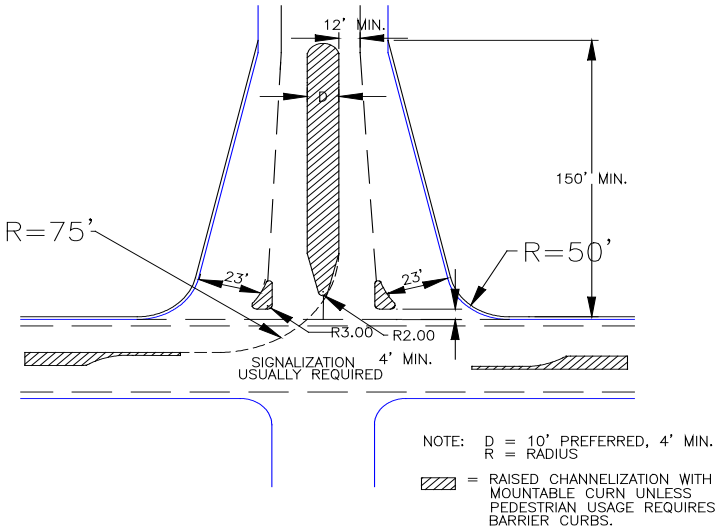
TWO WAY ENTRANCE WITH MEDIAN DIVIDER



TWO WAY ENTRANCE – SEPARATED DRIVEWAYS

MEDIUM VOLUME DRIVEWAY

Figure 10



HIGH VOLUME DRIVEWAY

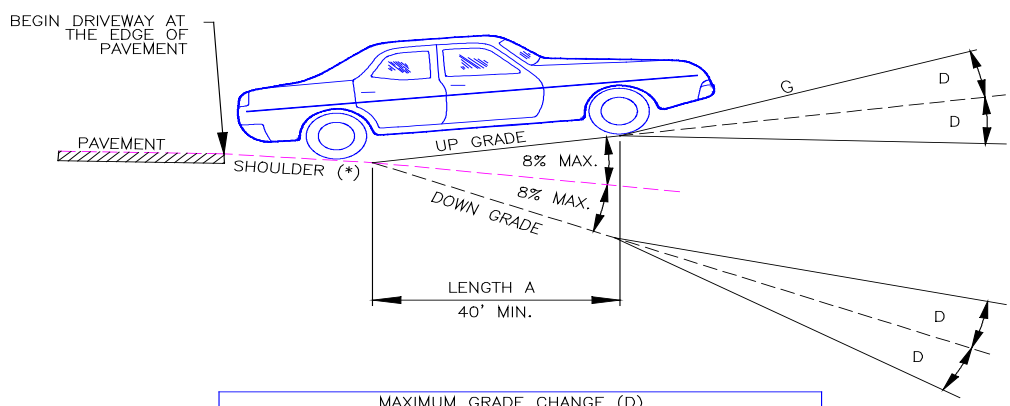
Figure 11

7. **Driveway Design Standards**. Driveways shall be designed in accordance with Table 516-1, Figure 12 and all other geometric design standards not presented in Table 516-1 shall be in accordance with Sections 511, 512, and 513 of this Ordinance.

a. Driveways shall have a throat width, length, and curb return radii based on the volume and type of traffic and in accordance with Figures 7 through 11.

TABLE 516-1 - DRIVEWAY REQUIREMENTS

STREET DESIGNATION	MIN. DISTANCE BETWEEN DRIVEWAYS	MAX. DRIVEWAYS PER LOT	MINMUM SETBACK	
			INTERSECTIONS	PROPERTY LINES
LIMITED ACCESS HIGHWAY OR PRINCIPAL ARTERIAL	600'	1	600'	10'
MINOR ARTERIAL	400'	1	400'	10'
MAJOR COLLECTOR	200'	1	200'	10'
LOCAL	100'	1	100'	10'



MAXIMUM GRADE CHANGE (D)		
DRIVEWAY TYPE	DESIRABLE	MAXIMUM
HIGH VOLUME DRIVEWAY	0%	3%
MEDIUM VOLUME DRIVEWAY	3%	6%
LOW VOLUME DRIVEWAY	6%	*

* = CONTROLED BY VEHICLE CLEARANCE

DRIVEWAY SLOPE CRITERIA

NOTES:

1. THE SHOULDER SLOPE USUALLY VARIES FROM ½"/FT. (4%) TO ¾"/FT. (6%). HOWEVER, THE SHOULDER SLOPE SHOULD BE MAINTAINED WHEN CONSTRUCTING THE DRIVEWAY.
2. VERTICAL CURVES SHALL BE PROVIDED FOR GRADE CHANGES EXCEEDING A 1% ALGEBRAIC DIFFERENCE.
3. GRADES (G) SHALL BE LIMITED TO 15% FOR MINIMUM USE DRIVEWAYS AND FROM 8% FOR LOW, MEDIUM, OR HIGH VOLUME DRIVEWAYS.

Figure 12

8. Driveways shall be located at a point within the property frontage that provides at least the minimum sight distance as prescribed below.

   a. Sight distances shall be in accordance with the "Formula Sight Distance Measurement" Forms as presented in Appendix J of this Ordinance but in no case shall the sight distances be less than the minimum Safe Stopping Sight Distance as computed in accordance with Commonwealth of Pennsylvania, Title 67, Transportation, Chapter 441 as from time to time reenacted, amended, and/or replaced.

   b. If sight distance requirements specified in this Section cannot be met, the Commission may:

      1. Prohibit left turns by exiting vehicles;

      2. Restrict turning movements to right turns in and out of a driveway;

      3. Require installation of a right turn acceleration or deceleration lane;

      4. Require installation of a separate left turn standby lane;

      5. Alter the horizontal or vertical geometry of the roadway;

      6. Require the removal of the physical obstruction from the line of sight; or

      7. Deny access to the highway.

   c. Items in 516.C.8.b above shall be at the expense of the Applicant.

9. Driveways shall be constructed in the following manner:

   a. All driveway cartways shall be constructed of a suitable stone base material appropriately compacted and graded to provide a permanent, sound, all-weather driving surface, reasonably smooth and free from mud, dust or standing water, designed to facilitate stormwater drainage patterns.

   b. Driveways shall not be less than ten (10) feet in width and shall meet the design requirements depicted in Figures 7, 8, 9, 10, 11 and 12 and Table 516-1 of this Section.

   c. All driveways shall be constructed so as not to impair drainage within the right-of-way, alter the stability of the improved area, or change the drainage of adjacent areas.

   d. Where a drainage ditch or swale exists the applicant shall install adequate pipe under the driveway in accordance with Penn DOT Publication 408. Drainage pipe installed under driveways shall meet the design requirements of applicable County and DEP approved Act 167 Stormwater Management Plans, municipal stormwater management ordinances, and/or stormwater management provisions contained in this Ordinance.

   e. The side slopes for driveway embankments within the right-of-way shall not be steeper than ten (10) to one (1).

f. Driveways that are gated shall have gates located a minimum of thirty (30) feet from the public right-of-way and shall not open outward. Fire department personnel shall have ready access to locking mechanisms on any gate restricting access.

517 OFF STREET PARKING AND LOADING REQUIREMENTS

Subdivisions and land developments shall provide off-street parking and loading areas designed to promote orderly and safe parking of vehicles and deliveries in accordance with the applicable municipal zoning ordinance or, where local zoning does not exist, the requirements of this Section.

A. **General Design.**

1. To the maximum extent practical parking and loading areas shall be provided at the side or rear of buildings in order to eliminate the visual impact of vast areas of pavement.

2. Adequate provision shall be made for ingress and egress to all parking and loading spaces and areas.

3. Customer Parking and circulation shall be separated from delivery service drives and loading areas.

4. Parking and loading areas shall be located entirely on the lot being served except where shared parking facilities are developed to serve multiple adjacent lots.

5. Off-street parking and loading areas shall be designed so that vehicles do not back or park over or into public walkways, sidewalks, and rights-of-way.

6. Curb radii or aisle treatments in parking areas shall be four (4) feet or greater to promote efficient turning movements.

7. All dead end parking lots shall be designed to provide, when necessary, sufficient back-up at stalls.

8. **Setback Distance**. Parking and loading areas shall be set back a minimum of fifteen (15) feet from street right-of-way lines and a minimum of ten (10) feet from side and rear property lines.

9. **Access**. Access to off-street parking areas shall be limited to a minimal number of well-defined entrance and exit lanes that are separated by dividers, planting islands, or in the case of low volume facilities, pavement markings. In no case shall unrestricted access along the length of a street upon which the parking abuts be permitted.

10. Painted lines, arrows, dividers and signs shall be provided to delineate and control parking, loading areas and internal circulation.

11. Any lighting used to illuminate off-street parking or loading areas shall be mounted and shielded in such a manner to effectively eliminate direct glare on adjacent properties or upon public streets.

12. All parking and loading areas shall include a minimum landscaped buffer of five (5) feet between the parking or loading area and right-of-way in accordance with Landscaping and Buffer Requirements in Section 518 of this Ordinance.

13. Where parking areas for nonresidential and multi-family uses contain five (5) or more spaces and are adjacent to residential or institutional developments, a solid screen of attractive fencing or evergreen vegetation shall be provided to a minimum height of five (5) feet.

14. Large parking areas containing more than forty (40) spaces shall be broken down into sections, where possible. Landscaped dividing strips, berms, and similar elements shall separate large parking areas.

B. **Construction Material**. Parking and loading areas, service drives, and exit and entrance lanes shall be designed and constructed in accordance with Section 512 of this Ordinance. The Commission may, on a case-by-case basis, permit parking areas for certain smaller land developments considered to have minimum use and low volume entrances to be surfaced with a dust free all weather material such as compacted limestone. In such cases the area within the street right of way or a length of 15 feet, whichever is greater, of exit and entrance lanes shall be paved.

C. **Off-Street Parking Requirements**.

1. **Spaces Required**. The number of parking and loading spaces required shall be furnished in accordance with Table 517-2.

2. **Parking Space Dimensions**. Individual off-street parking spaces shall be nine feet by eighteen feet (9'x18') with the following exceptions:

   a. Angled off street parking spaces shall measure nine (9) feet wide by nineteen (19) feet long (9' x 19').

   b. Parallel parking spaces shall measure eight (8) feet wide and be a minimum of twenty-three (23) feet long (8' x 23').

   c. Parking spaces for the physically handicapped shall be twelve (12) feet wide.

3. Parking facilities shall be located within the distances specified herein for the intended land use as measured from the furthest parking space, but in no case shall the distance exceed any requirements set forth by the Americans with Disabilities Act (ADA) or by the Pennsylvania Department of Labor and Industry (L&I).

   a. Commercial and Industrial Development - a maximum of one thousand (1,000) feet for employee parking and five hundred (500) feet for customer parking.

   b. Single Family or Two-Family Structures - off-street parking shall be provided behind the right of way line and may take the form of attached or separate garage(s), carport(s), or driveway(s).

   c. Multi-Family structures - off-street parking shall be located within one hundred (100) feet of the structure.

D. **Parking Facilities for Mixed-Use Developments.** For mixed-use developments the applicant can request approval from the Commission for shared parking following the methodology described in the publication *Shared Parking* by the Urban Land Institute and Barton Aschman-Associates, Inc. (Urban Land Institute, 1983) and *Shared Parking Planning Guidelines* by the Institute of Transportation Engineers, (1995).

E. **Phased Parking and Parking Oversupply.**

1. Where the total number of off-street parking spaces required may not be immediately required for a particular use, a phased parking plan may be permitted by the Commission, requiring that a portion of the parking area, not less than sixty-five (65 %) percent of the required spaces, be completed initially.

2. The site plan shall clearly indicate both the portion of the parking area to be initially paved and the remaining parking needed to provide the number of required spaces.

3. The site plan shall provide for adequate drainage of both the partial and total parking areas.

4. The portion of the parking area not to be paved initially shall be landscaped.

5. The applicant shall post a separate performance guarantee, in addition to the performance guarantee required for other improvements, which shall reflect the cost of installing the additional parking necessary to provide the total number of parking spaces required.

6. Prior to the expiration of a two (2) year period, the applicant may either install the additional parking shown on the site plan, or apply to the Planning Commission after the use has been in operation for eighteen (18) months for a determination as to whether or not the initial parking area provided is adequate. If the Planning Commission determines that the parking facility is adequate as originally constructed, the parking performance guarantee shall be released. If, however, the Planning Commission determines that the partial off-street parking area is not adequate, the applicant shall be required to construct the additional parking facilities in accordance with the terms of the performance guarantees. The Commission will require the applicant to provide a parking study prepared by a licensed professional engineer.

7. **Parking Oversupply.** Where the strict application of the parking space requirements presented in Table 517-2 would result in an oversupply of parking spaces, based upon a parking analysis conducted by a licensed professional engineer experienced in the construction and design of parking facilities, the applicant may request that the Commission, with approval of the Commission Engineer, permit a reduced number of parking spaces to be constructed, with the balance set aside in a natural state and a parking easement in place for future expansion if at some point it is necessary. As an alternative the applicant may request that a percentage of the parking area be delineated as peak or overflow parking, permitted to be constructed with a grass paver, reinforced turf grass, or other pervious construction methods approved by the Commission Engineer.

F. **Handicapped Parking Requirements**.

1. All non-residential and multi-family off-street parking areas shall provide spaces for use by motor vehicles that transport physically disabled persons in accordance with ADA standards.

2. Accessible parking spaces shall be located on the shortest accessible route of travel from adjacent parking to an accessible entrance. In buildings with multiple accessible entrances with adjacent parking, accessible parking spaces shall be dispersed and located closest to the accessible entrances.

3. All spaces shall be clearly identified with pavement markings and a sign that includes the international symbol for barrier free environments. The sign shall include a statement

informing the public that the parking space is reserved for use by physically disabled persons and what the fines are for illegally parking in spaces reserved for physically disabled persons.

4. **Space Dimensions**. Parking spaces reserved for use by the physically disabled shall be designed and constructed in accordance with ADA requirements but in no case shall they be less than twelve (12) feet in width.

5. **Required Spaces.** Where buildings are required to be accessible as per ADA or PA L&I requirements accessible spaces shall be provided in accordance with Table 517-1.

Table 517 - 1

Total Spaces In Lot	Handicap Accessible Spaces Required
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2% of total
1001 and over	20 plus 1 for each 100 over 1,000

G. **Bicycle Parking Facilities.** Non-residential land uses that could be visited by bicyclists or could have employees commute to work on bicycles shall provide bicycle-parking facilities in accordance with this section.

1. Five percent (5%) of the first fifty (50) vehicular spaces shall be for bicycle use. If more than fifty (50) spaces are to be provided, at least three percent (3%) of the number of spaces over fifty (50) shall be for bicycle use.

2. Each bicycle space shall be equipped with a device to which a bicycle frame and one (1) wheel can be attached using a chain or cable. There shall be adequate separation between adjacent bicycles to be attached or removed without moving other bicycles. The appearance of such devices shall be consistent with nearby urban design features.

3. Bicycle parking spaces shall be convenient to the structure for which they are provided and shall be visible from at least one (1) entrance to the structure.

4. Bicycle parking devices shall permit at least two (2) feet of free space between any device and the edge of the curb or sidewalk.

H. **Loading Area Requirements**.

1. All non-residential uses shall provide adequate loading area spaces to accommodate the intended needs of the proposed land use either inside or outside of a building.

2. All loading area spaces shall not be less than twelve (12) feet in width and shall have an overhead clearance of not less than fourteen (14) feet.

3. Loading areas adjacent to residential or institutional land uses shall provide a solid screen of attractive fencing or evergreen vegetation to a minimum height of six (6) feet.

4. Loading areas shall be designed to accommodate easy ingress and egress of all delivery vehicles and shall be designed to prevent interference with the flow and safety of traffic and pedestrians.

5. Loading spaces shall be provided at the minimum rate of one space (1) per 20,000 square feet of gross floor area (GFA) or portion thereof. Buildings over 50,000 square feet GFA shall provide two (2) spaces and one (1) for each additional 50,000 square feet of GFA.

Table 517-2

LAND USE	REQUIRED OFF-STREET PARKING SPACES
AGRICULTURE	
Landscape Nursery	(1) Space per 200 Square feet (SF) of Gross Floor Area (GFA)
Concentrated Animal Operations	(1) Space per employee
Farm Operation	(1) Space per employee, plus (1) space per licensed vehicle
Market or Auction House	(1) Space per every 100 SF GFA, and (2) spaces per vendor
COMMERCIAL	
Amusement/Entertainment:	
Bowling Alley	(5) Spaces per lane
Dance Halls	(1) Space per 50 SF GFA
Marina	(1) Space per boat slip, plus (10) spaces per launch
Theaters	Space per 3-Seats
Heavy Retail Services:	
Auto Sales and Service	(1) Space per 1,000 SF GFA
Vehicle Repair and Maintenance	(1) Space per 400 SF GFA
Offices/Professional Uses:	
Banks	(1) Space per 200 SF GFA, plus (1) space per drive-in lane & employee
Offices, General	(1) Space per 250 SF GFA, plus (1) space per employee
Medical Offices	(5) Spaces per doctor, plus (1) space per employee
Retail Services:	
Beauty or Barber Shop	(1) Space per every 100 SF GFA or (2) spaces for each operator
Convenience Market/ Gas Station	(1) Space per every 250 SF GFA (4 per 1,000 GFA)
Funeral Home	(1) Space per every (4) seats, or (25) spaces per chapel unit
Grocery or Supermarket	(5) Spaces per every 1,000 SF GFA
Hotel and Motel	(1) Space per guest room, plus (10) space per 1,000 SF GFA
Personal Services	(1) Space per 200 SF basement and first floor, and (1) per 300 SF GFA other, plus (1) per employee
Rental Storage	(1) Space per every 20 units, plus (1) space for every 300 SF
Repair Services	(1) Space per 300 SF GFA
Restaurant, Fast-Food w/ Drive-in	(2) Spaces per 3-seats
Restaurant, Standard	(1) Space per 3-seats, plus (1) space per every 100 SF GFA
Shopping Center	(5) Spaces per every 1,000 SF GFA
Tavern, Night Club, Lounge	Greater of (1) space per 50 SF GFA or (1) per 2-seats
INDUSTRIAL	
Manufacturing	Greater of (1) space per 1,000 SF, or (1) space per employee maximum shift
Truck Terminal	(1) Space per driver and (1) space per each resident employee maximum shift

LAND USE	REQUIRED OFF-STREET PARKING SPACES
Wholesale or Warehouses	(1) Space per employee maximum shift, plus (1) space per company vehicle
INSTITUTIONAL	
Church	(1) Space per every 4-seats
Day or Nursery School	(1) Space per employee, plus (1) space for every (6) visitors or students
Hospitals:	
General Services	(2) Spaces per every 3-beds, plus (1) space per employee on largest shift
Out Patient Services Only	(1) Space per employee, plus (1) space for every (6) visitors or students
Libraries and Museums	(1) Space per 250 SF GFA, or (1) space per 4-seats
Monasteries or Convents	(1) Space per 6 residents, (1) space per employee, and (1) space per 5-chapel seats
Nursing Home	(1) Space per every 6-beds, Plus (1) space per employee of largest shift
Prisons	(1) Space per employee of largest shift, plus 1 space per every (4) seats in visitation room
Cemetery	(1) Space per acre
Public Service Uses - Banquets, Gathers, Etc.	(1) Space per 3-Seats, plus (1) per 1,000 SF GFA
Schools:	
Elementary or Junior High	(1) Space per employee, plus (2) spaces per classroom, plus (1) per 4-audotorium seats
Senior High	(1) Space per employee, plus (4) space for classroom, plus (1) per 4-audotorium seats
Athletic - Outdoor	(6) Spaces per 1,000 SF of playing area
Athletic - Indoor	(4) Spaces per 1,000 SF of playing area
University - Off-Campus Housing	(1) Space per employee, plus (1) per 2-students
University - Campus Housing	(1) Space per employee, plus (1) per 4-students
RECREATION	
Out Door Recreation:	
Day Camps	(1) Space per staff, plus (5) space per 10-guests
Golf Course	(4) Spaces per hole, plus added spaces per restaurant uses if applicable
Outdoor Swimming	(1) Space per 75-SF of water surface
Tennis Court	(3) Spaces per court
Athletic/Sports Fields	(1) Space per player and 1 space per 3 persons of capacity
Community Parks	(1) Space per 4-projected users, (1) space per employee, and (1) space per 1,000 SF GFA
Indoor Recreation:	
Courts, Gyms, etc	(1) Space per 250 SF GFA and (1) space per every 3 projected patrons
Recreational or Community Center	(1) Space per 3-proected uses, plus (1) per 1,000 SF GFA
RESIDENTIAL	
Apartments and Condominiums	(2) Spaces per unit excluding garages
Mobile Homes	(2) Spaces per unit, plus (1) space per every 3-units
Single Family	(1) Space per bedroom excluding garages
Townhouse	(2) Spaces per unit excluding garages

518 LANDSCAPING AND BUFFER REQUIREMENTS

A. **General.**

1. Suitable and attractive landscaping shall be required:

   a. Around buildings
   b. Within and around the perimeter of parking areas
   c. As a buffer between adjacent roads
   d. Between land uses of different intensities
   e. As a buffer between a proposed use and adjacent land

2. Applicants shall submit a landscape plan that includes the botanical names, common names, size, quantity, and general remarks for each plant proposed.

3. All landscaping and buffer yards shall be installed on the subject tract at the time of its development. Existing plant material to be preserved may be counted as contributing to the requirements contained herein.

4. Open storage areas, exposed machinery, service loading and trash disposal areas (such as dumpster or compactor sites) shall be effectively screened so as not to be visible from parking areas, roadways, or adjacent properties. Such areas shall be screened with architectural masonry, fencing, or landscaping with a height of at least six (6) feet.

5. Buffer yards may be used for passive recreation and for pedestrian, bicycle, or equestrian trails, provided that adequate plant material is retained to achieve the buffer effect, the total width of the buffer yard is maintained, and all other Ordinance requirements are met. The buffer yard is the applicable building setback area plus any additional buffer requirements required by Section 518.D and Table 518-1.

6. All landscape plantings shall be selected, considering the proper species and growth characteristics, to ensure adequate health and character with the existing and proposed conditions, such as overhead utilities, light, moisture, tolerance of road salts, leaf and fruit litter and confinements.

7. Plant species utilized in parking lots shall be tolerant of urban conditions.

8. Where possible, a hardy mix of native tree, shrub, and grass species shall be utilized for landscaping, and in no case shall plants identified as invasive species be used. Refer to Appendix M for more information on native and invasive species and recommended tree species for communities.

9. Plantings and other landscape treatments (i.e. architectural masonry walls, fences, berms) shall be appropriately located, clustered and spaced at strategic locations along all property lines, road frontage and within parking areas to provide the maximum screening, buffering and aesthetic appeal. The exact placement of required plants and structures is the decision of each applicant, except that the following conditions shall be met:

   a. Where a combination of plant materials and fencing is used the fence shall be located to the interior or toward the more intensive use, and the plant material shall be located toward the less intensive use.

   b. Landscape plantings shall be installed in such a manner as to provide clear sight distance triangles at all road and driveway intersections.

c. The applicant may establish, through a written and recorded agreement, that the immediately adjacent property owner(s) agree to allow a portion or the entire required buffer yard or landscape treatment on immediately adjacent portions of their land.

10. Applicants are encouraged to integrate stormwater management into landscaping areas in the form of bio-retention and infiltration areas and other Best Management Practices (BMPs).

11. The requirements of this Section are in addition to applicable street tree requirements contained in Section 514 of this Ordinance.

12. All new plantings, and existing plant material credited toward meeting the requirements of this Section, shall be maintained and shall be replaced by and at the expense of the developer or responsible maintenance entity when they become diseased, fail to deliver the intended landscaping and buffer effect, or die.

13. Landscaping and screening for agricultural uses shall be decided by Department Staff on a case-by-case basis. Staff may consult the Commission as needed.

B. **Classification of Plant Materials.** For the purposes of this Ordinance, plant materials are classified into four (4) types: deciduous trees, evergreen trees, deciduous shrubs and evergreen shrubs. The Penn State Cooperative Extension Office and the Pennsylvania Department of Conservation and Natural Resources Service Forester should be able to provide assistance in determining tree species compatible with Union County climate and soil conditions that are suitable for buffer yard, parking lot and general landscaping use. Appendix M contains information pertaining to native and invasive plant species and provides a listing of recommended community trees.

C. **Required Plantings –** The number and quality of trees and shrubs for each development site shall be determined as follows:

1. Deciduous trees shall have a minimum caliper measurement of two and one half (2 ½) inches, measured a minimum of six (6) inches above the soil line and shall have a minimum height of six (6) feet.

2. Evergreen trees shall have a minimum height of six (6) feet.

3. Evergreen shrubs, except for those used in low ground covers, shall have a minimum height of twenty-four (24) inches, except that where used in combination with an earthen berm approved by the Commission, the height may be reduced to eighteen (18) inches.

4. Deciduous shrubs shall have a minimum height of twenty-four (24) inches, except that where used in combination with an earthen berm approved by the Commission, the height may be reduced to eighteen (18) inches.

5. Each site shall have a minimum of twelve (12) deciduous or fifteen (15) evergreen trees and three (3) deciduous shrubs or six (6) evergreen shrubs for each one (1) acre of the development, or any combination of the above that meets the intent of this Section (e.g. 6 deciduous trees and 8 evergreen trees plus 2 deciduous shrubs and 2 evergreen shrubs per acre). As an alternative, ten (10) deciduous trees or twelve (12) evergreen trees for each one (1) acre of the development shall be required if deciduous trees are four (4) inches in caliper or greater and evergreen trees are nine (9) feet in height or greater. Sites less than one (1) acre shall provide a proportionate number of the required per acre plantings.

6. Five (5) deciduous shrubs may be substituted for one deciduous tree and/or five evergreen shrubs may be substituted for one evergreen tree for a maximum of twenty percent (20%) of the tree requirement. The preservation of existing trees may also satisfy this requirement. A tabulation of this requirement shall be summarized on each landscape plan submitted.

7. Applicants may substitute the use of earthen berms and fencing for a portion of the required plantings, as permitted on a case-by-case basis by the Commission. Earth berms can vary in height and width, but should not be less than six (6) feet in height including planting types selected.

8. The Commission will require additional planting densities and structural treatments where appropriate, due to land use incompatibility and visual impacts resulting from the proposed development. The Commission will increase the required plantings specified in 518.C.5 as per Section 518.D of this Ordinance.

D. **Additional Landscaping and Buffer Yard Requirements.** Visual, noise, lighting, and other impacts of new development can often have a negative effect on community character, aesthetics, and property values. Additional landscaping and buffer yard is a combination of the required building setback and a visual buffer or barrier, together with required landscaping, designed to ameliorate nuisances between disparate or incompatible land uses caused by subdivisions and land developments. Additional landscaping and buffer yard requirements are based upon the intensity of the proposed land use and the adjacent property.

1. Buffer yards shall be located along the outer perimeter of a lot or parcel and shall extend to the lot or parcel boundary line.

2. Buffer yards shall not be located on any portion of an existing or dedicated public or private-street or right-of-way nor any access drive serving a lot or parcel.

3. Where woodlands, floodplains and drainage ways, and wetlands are in the buffer yard, the following rules shall apply:

   a. Woodland areas shall be left undisturbed to the width of the buffer yard. The trees in the woodland and the length of the woodland area shall be deducted from all buffer yard requirements.

   b. Floodplain and drainage ways shall be treated as any other buffer yard except that all plant material shall be tolerant of very wet conditions.

   c. Wetland areas in buffer yards shall be protected in accordance with PA DEP requirements. Plantings shall be selected that meet the intent of the size and type required but are tolerant of the wetland conditions.

4. Buffer yard in addition to the building setback requirements is not required if the land use is the same on both sides of a property boundary (i.e. two single family residences). If the land uses differ (i.e. a factory and a single family residence) a buffer yard shall be required and the intensity classes shall be determined.

5. The applicant shall first determine if any portion or property line of the site constitutes a boundary between different land use intensity classes. Land uses fall within the following intensity classes for determining buffer requirements:

   Class I Agricultural, Undeveloped and Vacant uses

Class II Single Family Residential, Passive Recreation

Class III Multi-Family, Townhouse, Mobile Home Parks

Class IV Commercial, Institutional and Light Industrial uses having less than 50% impervious lot coverage.

Class V Commercial, Institutional and Light Industrial uses having 50% or greater impervious lot coverage.

Class VI Heavy Industry, Extraction Operations, and Waste Processing, Storage, Treatment or Disposal Facilities.

6. Using Table 518-1 determine the buffer yard distance requirement between the different land use intensity classes for each property line or segment thereof for the subject parcel.

7. All buffer yard areas shall be seeded with lawn or native/naturalized ground cover unless such vegetation is already fully established.

8. The Commission will require additional landscape plantings and/or a combination of plantings and structural treatments, depending on the severity of the impact of a proposed site and its use compared to uses adjacent to the site. The following formula will be used to calculate the additional landscaping that is required.

   a. Determine the land use intensity of the proposed use of the site and all adjacent land uses.

   b. Measure each property line in feet and divide by 100. Repeat for all property lines.

   c. Subtract the land use intensity of the adjacent land use from that of the proposed use. For all property lines multiply this figure by the number obtained in step "b" above. A 50% reduction of this requirement may be taken for property lines adjacent to land uses that are considered Class I intensity in Section 518.D.

   d. Add the figures for all property line segments obtained from step "c" above. This figure is the additional percentage of landscape plantings that the Commission will require at the site.

   e. Multiply the base amount of landscaping (trees and shrubs) required by Section 518.C by the percentage obtained in step "d" above. This is then added to the base amount to determine the total minimum amount of landscaping required. All fractions of trees and shrubs shall be rounded to the nearest whole number.

Refer to Appendix L for two examples of how to apply the landscaping requirements of this Section.

Table 518-1 - Buffer Yard Requirement (Expressed in feet)

Proposed Intensity	**Adjacent Land Use Intensity**					
	Class I	**Class II**	**Class III**	**Class IV**	**Class V**	**Class VI**
Class I	-	-	-	-	-	100'
Class II	-	-	20'	30'	40'	200'
Class III	-	20'	-	15'	25'	100'
Class IV	-	30'	15'	-	20'	75'
Class V	30'	40'	25'	20'	-	50'
Class VI	100'	200'	100'	75'	50'	-

E. **Parking Lot Landscaping Standards**.

1. All residential and nonresidential parking lots with twenty (20) or more parking spaces shall contain a minimum amount of landscaping within the parking lot interior and adjoining entrance drives and circulation drives.

2. Parking aisles exceeding twenty (20) contiguous spaces shall be separated by a planting area.

3. 150 square feet of landscaped area shall be provided per twenty (20) parking spaces in the parking lot interior.

4. Parking and storage of vehicles in front yards of properties, other than lots in single-family subdivisions, shall be screened from the public right-of-way by an earthen berm and/or plant material which provides a dense visual screen.

F. **Landscaping and Buffer Yard Maintenance**

1. It shall be the responsibility of the developer, property owner or an association of property owners to permanently maintain required landscaping and buffer yards.

2. Any plant material that does not live shall be replaced within one (1) year.

3. In the event the developer, property owner, or an association of property owners, or their heirs, successors, and assigns fail to maintain the required landscaping and buffer yards, the municipality or the county may enter the property and take necessary and prudent action to maintain said landscaping and buffer yards, and to charge the costs of maintenance and/or repairs to the developer, property owner, or association of property owners. However, the municipality and the county are under no obligation to conduct said maintenance.

519 RESERVED

520 SEWAGE FACILITIES

A. General Requirements

1. All subdivisions and land developments shall be provided with sanitary sewage facilities in accordance with the official Act 537 Municipal Sewage Facilities Plan and the laws of the Commonwealth of Pennsylvania.

2. Applicants shall submit all necessary plans and specifications for the entire sanitary sewage disposal system, including the facilities related to collection, conveyance, and treatment.

3. Plan applications shall not be approved until the applicant has received all necessary sewage planning approvals from the municipality and the PA DEP.

4. Subdivisions and land developments shall be connected to an existing public sewer system unless the applicant can clearly demonstrate that such connection is not feasible, or the PA DEP recognizes an alternate method of disposal. The Commission may require the applicant to have a feasibility study prepared by a registered professional engineer to show that a connection is not feasible.

5. In those areas presently served by on-lot sewage disposal but are to be served by municipal sewer service within five (5) years, the Commission may require capped sewers, if recommended by the municipality, sewer service provider, other local responsible agency and/or the PA DEP.

6. All plans for sanitary sewer systems (both public and private) shall be designed by a registered professional engineer in accordance with the requirements of the PA DEP or other governing rules and regulations, and shall be approved by the local sewer authority, the municipal engineer and/or Commission Engineer, the municipality, and the PA DEP.

7. Subdivisions and land developments proposing no development of buildings or improvement of land for purposes requiring sewage facilities need not provide sanitary sewage facilities if the PA DEP has approved a non-building waiver request. Where a waiver is approved by the Sewage Enforcement Officer and PA DEP, the final plan for recording shall include the standard non-building notation. However, in all cases it shall be clearly demonstrated that either public sewer or on-lot sewage disposal can be achieved.

8. Lot additions and consolidations need not provide sanitary sewage facilities if the receiving tract(s) has an existing permitted method of sewage disposal or if the Sewage Enforcement Officer and PA DEP has approved a non-building waiver request. Where a waiver is approved by the PA DEP, the final plan for recording shall include the applicable notation required by the PA DEP.

9. All subdivision and land development plans shall contain appropriate notation indicating the method of sewage disposal.

B. Public Sanitary Sewer. Where connection to public sewer is proposed, the applicant shall obtain all required sewage planning approvals from the municipality and the PA DEP, and a letter from the sewer/municipal authority stating the following:

1. [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

2. The term of the reservation of capacity based on hydraulic load, organic loads and compliance with the influent parameters for collection, conveyance and treatment;

3. Capacity is for the entire development [partial capacity based upon phases of development will not be accepted]; and

4. Statement indicating approval of the plans for design, construction standards, installation, and financial guarantees.

C. Private Sanitary Sewer. Where connection to an existing public sewer system is not available, or has been determined to be unfeasible to the satisfaction of the Commission, the Commission may require the applicant to evaluate the installation of a privately owned sanitary sewer system. Where the use of a private sanitary sewer is proposed the applicant shall provide the following:

1. A detailed operations and maintenance plan;

2. All required sewage planning approvals from the municipality and the PA DEP.

3. Agreements or covenants, acceptable for recording, as deemed necessary by the Commission, the municipality, and/or the PA DEP, to guarantee the maintenance and operation of said facility;

4. A note on the plan and a clause in all deeds for lots referring to any maintenance agreements or covenants; and

5. Any terms stipulating conditions of metering, inspection, rights of access, minimum standards for materials and workmanship, testing and enforcement.

D. On-Lot Sewage Disposal. Where connection to an existing public sewer system or the installation of a private system is not feasible, the applicant may propose to utilize on-lot sewage disposal technology in accordance with this Section.

1. Applicant shall have soil percolation tests performed by the municipal Sewage Enforcement Officer, with no less than one test pit per lot shown on the plan, and where marginal conditions are discovered, satisfactory alternative sites shall be identified and preserved.

2. Each lot shall be of a size and shape to accommodate the necessary on-lot sewage disposal systems in accordance with setback and design standards established by the municipality or PA DEP. Such standards shall ensure safe distances from buildings, property lines, water supplies and other improvements affecting normal function. The on-lot sewage disposal system shall be located on and fully contained within the lot it is intended to serve.

3. The proposed on-lot sewage disposal system shall be approved by the PA DEP through the appropriate sewage planning review process, and written confirmation shall be received by the Commission prior to plan approval.

4. The Commission shall not approve any subdivision or land development where an application fails to meet the required on-lot sewage planning requirements of the municipality, the PA DEP, and this Ordinance and/or a sewage permit cannot be obtained.

521 WATER SUPPLY

A. General Requirements

1. All subdivisions and land developments shall be provided with an adequate and safe supply of water for all intended land uses, and said water supply shall meet all applicable federal, state, and local drinking water standards or be capable of economical treatment to attain such quality standards.

2. Applicants shall submit all necessary plans and specifications for the entire water supply system including the facilities related to sources, storage, treatment, and distribution.

3. For subdivisions and land developments not connecting to a public water supply, the Commission may require the applicant to demonstrate that a reliable, safe and adequate supply exists to support the water usage demands of the proposal without detrimental effects to future users and water sources of adjacent land uses. Such analysis would at a minimum contain information regarding estimated water demand, source of supply and capacity, source reliability, and source quality. The Commission reserves the right to require the applicant to drill a test well for the establishment of water quality and quantity in that area.

4. In areas where known groundwater problems exist, resulting from contamination or inadequate yields of potable supplies, the Commission may require the applicant to

provide a feasibility study by a licensed professional engineer or hydrogeologist to evaluate the adequacy of water quality and quantity for the proposed development.

5. Applications for plan approval shall not be granted until the applicant has received all necessary water supply approvals from the municipality, the water supplier, the PA DEP, and/or the Susquehanna River Basin Commission.

6. Subdivisions and land developments shall be connected to an existing public water supply unless the applicant can clearly demonstrate that such connection is not feasible. The Commission may require a feasibility study prepared by a registered professional engineer to show that a connection is not feasible.

7. In those areas presently served by on-lot water supply wells, but proposed to be served by a public water supply within five (5) years, the Commission may require the installation of a capped water distribution system if recommended by the municipality, the water service provider, other local responsible agency and/or the PA DEP.

8. All plans for water supply systems (both public and private) shall be designed by a registered professional engineer and shall conform to current regulatory requirements. The local water supplier, the municipal engineer and/or Commission Engineer, the municipality and the PA DEP shall approve them.

9. Fire hydrants shall be installed as an integral part of any public or private water supply system and the placement, design, and construction of such shall meet the specifications of the local fire company, the public water supplier, and the municipality when applicable.

10. Applicants shall present evidence that the subdivision or land development is to be supplied with water by a certified public utility, a bona fide cooperative association of lot owners, or a municipal corporation, authority or utility. A copy of a Certificate of Public Convenience from the Pennsylvania Public Utility Commission (PUC) or an application for such certificate, a cooperative agreement or commitment or agreement to serve the area, whichever is appropriate, shall be acceptable evidence. In addition applicants shall be responsible for obtaining applicable Water Extension Permits from the PA DEP.

11. All subdivision and land development plans shall contain appropriate notation indicating the method of water supply.

B. Public Water Supply. Where connection to public water supply is proposed the applicant shall provide a written statement from the public water supplier indicating that sufficient supply to serve the proposed development is available, and such notice shall:

1. Be dated within forty-five (45) days of the plan application;

2. Identify the term of the reservation of supply;

3. Provide water supply for the entire development [partial supply based upon phases of development will not be accepted]; and

4. Include a statement from the public water supplier indicating approval of the plans for design, construction standards, installation, and financial guarantees.

C. Private Water Supply. Where connection to an existing public water supply is not available or has been determined to be unfeasible to the satisfaction of the Commission, the Commission may require the applicant to evaluate the installation of a privately owned water supply system.

Where the use of a private water supply system is proposed the applicant shall provide the following:

1. A business plan consistent with the PA DEP, PUC, and/or American Waterworks Association (AWWA) guidelines to address all appropriate physical, operational, managerial, and financial issues necessary to determine system viability;

2. A detailed operations and maintenance plan that identifies the source of supply, source capacity, source reliability, source quality, proposed treatment, pumping and storage, distribution system, fire service, customer connections, system management, etc.

3. An operation, maintenance, and restoration fiscal plan that determines users fees for normal annual operations, upgrades and replacement based on the projected life and a contingency plan to address future treatment if the water source falls out of compliance with applicable safe drinking water regulations.

4. Evidence of approval from the municipality, municipal engineer, and the PA DEP;

5. Agreements or covenants acceptable for recording as deemed necessary by the Commission, the municipality, and/or the PA DEP to guarantee the maintenance of said facility; and

6. A note on the plan and a clause in all deeds for lots referring to any maintenance agreements or covenants.

D. On-Lot Water Supply. Where connection to an existing public water supply or the installation of a private water supply is not feasible the applicant may utilize on-lot water supply in the form of individual water wells in accordance with this Section.

1. Wells shall be installed according to applicable federal, state, and local well construction and permitting standards.

2. Wells shall be adequately isolated from on-lot sewage treatment facilities in accordance with the requirements of the PA DEP and the municipality and shall be safely isolated and protected from other potential sources of contamination.

522 OTHER UTILITIES

A. Electric, telephone, television cable, and other utilities, both main and service lines, shall be placed underground within easements or dedicated public rights-of-way, but not under cartways unless approved in writing by the municipality and utility provider,

B. All utilities shall be installed in accordance with the prevailing standards and practices of the utility or other companies and authorities providing such services and the laws of the Commonwealth.

C. Underground utility installation shall not be required for the following:

1. For service to industrial development; and

2. For a project where the local utility service provider determines that the physical conditions render such underground installation unfeasible.

D. Underground installation of the utility distribution and service lines shall be completed prior to street paving, storm drainage, and curbing and sidewalk installation.

E. The Commission may require the installation of utilities prior to final plan approval where the cost of installation, including the cost of excavation for underground utilities, will not be completely paid by the utility company. In each case the Commission shall also consider the procedures for the applicable utility company involved with the extension of services.

523 STORMWATER MANAGEMENT AND DRAINAGE

The purposes of this section are to control accelerated runoff, erosion and sedimentation; promote the utilization and preservation of desirable existing natural drainage systems; encourage groundwater recharge; maintain existing natural flows of streams, including quantity, peak flows, flow type, and quality; preserve and restore flood carrying capacity of streams; provide for proper maintenance of all permanent stormwater management structures; protection of wellhead areas and community water supplies, and protection of downstream properties from impacts resulting from increased development.

A. Stormwater Management Districts

For the purpose of managing stormwater Union County is divided into the following Stormwater Districts, which are shown on the map included in Appendix N of this Ordinance:

1. Bull Run (Limestone Run) Stormwater District - All subdivision and land development activity occurring within the Bull Run watershed shall comply with the requirements of this Ordinance and the *Bull Run Act 167 Stormwater Management Plan,* adopted by the County of Union and approved by the PA DEP.

2. Buffalo Creek Stormwater District - All subdivision and land development activity occurring within the Buffalo Creek watershed shall comply with the requirements of this Ordinance and the *Buffalo Creek Act 167 Stormwater Management Plan,* adopted by the County of Union and approved by the PA DEP.

3. Fishing Creek/Cedar Run District - All subdivision and land development activity occurring within the Fishing Creek/Cedar Run watershed shall comply with the requirements of this Ordinance and the *Fishing Creek/Cedar Run Act 167 Stormwater Management Plan*, adopted by the County of Union and approved by the PA DEP.

4. Penns Creek Stormwater District - All subdivision and land development activity occurring within the Penns Creek watershed shall comply with the requirements of this Ordinance and the *Penns Creek Act 167 Stormwater Management Plan,* adopted by the County of Union and approved by the PA DEP.

5. West Branch Susquehanna River Stormwater District - All subdivision and land development activity occurring within the West Branch Susquehanna River watershed shall comply with the requirements of this Ordinance and the *West Branch Susquehanna River Act 167 Stormwater Management Plan,* adopted by the County of Union and approved by the PA DEP.

6. White Deer Creek Stormwater District - All subdivision and land development activity occurring within the White Deer Creek watershed shall comply with the requirements of this Ordinance and the *White Deer Creek Act 167 Stormwater Management Plan,* adopted by the County of Union and approved by the PA DEP.

7. White Deer Hole Creek Stormwater District – All subdivision and land development activity occurring within the White Deer Hole Creek watershed shall comply with the

requirements of this Ordinance and the *White Deer Hole Creek Act 167 Stormwater Management Plan* adopted by the County of Union and approved by the PA DEP

A.a **Exemptions** [Added by Ordinance No. 2013-1 amending Ordinance 2003-3]

1. Any regulated activity on parcels generating less than 5,000 square feet of total impervious area may be granted an exemption from certain provisions of this Section. This criterion shall apply to total development even if development is to take place in phases and the date of December 17th, 2003 shall be the starting point from which to consider tracts as ”parent tracts” in which future subdivisions and land developments respective impervious area computations shall be cumulatively considered.

2. Exemptions shall be at the discretion of the Union County Planning Commission based upon a review and recommendation from the Commission Engineer that considers site conditions, topography, soils, and other factors deemed appropriate.

3. Prior to granting an exemption, the Applicant must provide documentation that the increased flows from the site leaves the site in the same manner as the pre-development condition, and that there will be no adverse impacts to properties along the path of flow(s), or that the increased flow(s) will reach a natural watercourse or an existing stormwater management structure before adversely impacting any property along the path of flow(s). This documentation must include a signed statement by the landowner indicating the total impervious area constructed since December 17th, 2003.

4. If a drainage problem is documented or known to exist downstream of, or expected from the proposed subdivision or land development activity, then an exemption will not be granted and a stormwater management plan shall be required.

5. Under no circumstances shall an exemption be granted to the provisions contained in Sections 523.E, 523.F, and 523.G.

6. An exemption shall not relieve the Applicant from implementing such measures as are necessary to protect the public health, safety, and property. An exemption shall also not relieve the Applicant from providing adequate stormwater management to meet the purpose of this Ordinance; however, a Stormwater Management Plan will not have to be submitted.

B. **General Stormwater Management Requirements**

1. The management of stormwater on the site, both during and upon the completion of construction, and the design of any temporary or permanent facilities or structures, and the utilization of a natural drainage system shall be in full compliance with this section.

2. Site designs shall minimize impervious surfaces and shall promote the infiltration of runoff through seepage beds, infiltration trenches, etc. where soil conditions permit, in order to reduce the size or eliminate the need for detention facilities.

3. Stormwater runoff generated from development, discharged directly into a wetland or other waters of the Commonwealth, shall be done in accordance with Federal and State regulatory requirements and shall be adequately treated to prevent water quality degradation of the receiving water body.

4. Annual groundwater recharge rates shall be maintained by promoting infiltration. At a minimum, annual recharge from the post development site shall mimic the annual recharge from the pre-development site conditions.

5. Applicants may select runoff control techniques, or a combination of techniques, which are most suitable to control stormwater runoff from the development site. Union County encourages applicants to consider alternative solutions, including Best Management Practices (BMP's) for stormwater management. Applicants should consult the Pennsylvania Stormwater Best Management Practices Manual. All stormwater designs are subject to the approval of the Commission Engineer. The Commission may request specific information on design and/or operating features of the proposed stormwater controls in order to determine their suitability and adequacy in terms of the standards of this Ordinance.

6. All storm water management facilities including detention basins, BMP's, sewers, and culverts shall be designed by an individual qualified and/or experienced in their design. These qualifications should be listed on the front cover of the plan narrative.

7. The anticipated peak rate of stormwater runoff from the site during and after full development shall not exceed the peak rate of runoff from the site prior to development activities, measured in accordance with the standards and criteria of this Ordinance.

8. Roof drains, to the greatest extent practical, shall drain to the land surface to promote overland flow and infiltration of stormwater but shall not discharge stormwater directly onto sidewalks, streets or neighboring property.

9. Existing points of concentrated drainage that discharge onto adjacent property shall not be altered without permission of the affected property owner(s) and shall be subject to any applicable discharge criteria specified in this Ordinance.

10. If existing diffused stormwater flow is to be concentrated the applicant must document that adequate downstream conveyance facilities exist to safely transport the concentrated discharge, or otherwise prove that no erosion, sedimentation, flooding or other harm will result from concentrated discharge.

11. Storm sewers, swales, culverts, bridges, and related facilities shall be provided to:

    a. Permit the unimpeded flow of natural watercourses;

    b. Insure the drainage of all points along the line of streets;

    c. Intercept stormwater runoff along streets at reasonable intervals related to the extent and grade of the area drained, and to prevent the flooding of intersections and the undue concentration of storm water; and

    d. Insure unrestricted flow of stormwater under driveways, and at natural watercourses or drainage swales.

12. All natural streams, channels, swales, drainage systems and/or areas of surface water concentration shall be maintained in their existing conditions, unless an alteration is approved by the Commission and the municipality due to topographic conditions.

13. All stream encroachment activities, including work in and adjacent to waters of the Commonwealth or wetlands, shall comply with applicable PA DEP requirements.

14. Any stormwater facility located on a state or local highway right-of-way shall be subject to the approval of the Penn DOT or the municipality.

15. Applicants are encouraged to incorporate designs that take advantage of the stormwater credits presented in Appendix O of this Ordinance.

16. Off-site areas that drain through a proposed development site are not subject to release rate criteria when determining allowable peak runoff rates; however, on-site drainage facilities shall be designed to safely convey off-site flows from up-slope areas through the development site.

17. The design of all stormwater management facilities shall incorporate sound engineering principles and practices. The Commission shall reserve the right to disapprove any design that would result in the continuation of an existing, or create a new, adverse hydrologic or hydraulic condition.

18. The designer shall consider that the runoff from proposed sites graded to the subsoil will not have the same runoff conditions as the site under existing conditions, even after topsoil and seeding is placed. The designer shall increase the proposed condition "CN" or "C" to better reflect the proposed soil conditions.

19. Infiltration testing shall be performed in accordance with the soil infiltration testing procedures in accordance with Appendix C of the Pennsylvania Stormwater Best Management Practices Manual.

20. Plans shall contain a statement, signed by the landowner, acknowledging the stormwater management system to be a permanent fixture that can be altered or removed only after approval of a revised plan by the Union County Planning Commission.

C. **Calculation Methodology**

1. Stormwater calculations to determine runoff, peak flow rates, peak discharge, hydrographs and to design storm water runoff rate reduction facilities shall use a generally accepted calculation technique based on the Natural Resource Conservation Service (NRCS) Soil-Cover Complex method. Table 523-1 summarizes acceptable methods.

2. It is assumed that all methods selected by the design professional will be based on the individual limitations and suitability of each method for a particular site. The Commission may allow the use of the Rational Method to estimate **peak discharges** from drainage areas that contain 200 acres or less; however, the Rational Method shall not be used to generate **pseudo-hydrographs** for drainage areas greater than 10 acres.

3. For predevelopment flow rate determinations using the Soil Cover Complex Method, it shall be assumed that all undeveloped and pervious land shall be considered as "meadow" in good condition, unless the natural ground cover generates a lower curve number or Rational "C" value (i.e. forest) as listed in Appendix P-1 of this Ordinance. For predevelopment flow rate determination using the Rational Method, it shall be assumed that all undeveloped and pervious land shall be considered "forest" as listed in Appendix P-2 of this Ordinance.

4. All calculations using the Soil Cover Complex method shall use the appropriate design rainfall depths for the various return period storms as presented in the table in Appendix P-3 of this Ordinance. If a hydrologic computer model such as PSRM or HEC-HMS is used for stormwater runoff calculations, then the duration of rainfall shall be 24 hours. The SCS "S" curve shown in Appendix P-4 of this Ordinance shall be used for the rainfall distribution.

5. All calculations using the Rational Method shall use rainfall intensities consistent with appropriate times of concentration for overland flow and return periods from the Design Storm Curves from PA Department of Transportation Design Rainfall Curves (1986) shown in Appendix P-5 of this Ordinance. Times of concentration for overland flow shall be calculated using the methodology presented in Chapter 3 of Urban Hydrology for Small Watersheds, NRCS, TR-55 (as amended or replaced from time to time by NRCS). Times of concentration for channel and pipe flow shall be computed using Manning's Equation.

6. Runoff Curve Numbers (CN) for both existing and proposed conditions to be used in the Soil Cover Complex method shall be obtained from the table in Appendix P-1 of this Ordinance.

7. Runoff coefficients (c) for both existing and proposed conditions for use in the Rational Method shall be obtained from the table in Appendix P-2 of this Ordinance.

8. Where uniform flow is anticipated the Manning Equation shall be used for hydraulic computations and to determine the capacity of open channels, pipes, and storm sewers. Values for Manning's roughness coefficient (n) shall be consistent with Appendix P-6 of this Ordinance.

9. Routing of hydrographs through detention/retention facilities for the purposes of designing those facilities shall be accomplished using the Storage-Indication method or other recognized routing method subject to approval of the Commission Engineer. For drainage areas greater than 200 acres in size, the design storm hydrograph shall be computed using a calculation method that produces a full hydrograph. The Commission Engineer may approve the use of any generally accepted full hydrograph approximation technique that shall use a total runoff volume that is consistent with the volume from a method that produces a full hydrograph.

10. Any method approved by the Pennsylvania Department of Transportation or the Pennsylvania Department of Environmental Protection may be used to design the waterway areas of bridges.

Table 523-1: Acceptable Stormwater Management Computation Methodologies

Method	Method Developer	Applicability
TR-20 (or commercial package based on TR-20)	USDA NRCS	Where use of full hydrologic computer model is desirable or necessary.
TR-55 (or commercial package based on TR-55)	USDA NRCS	For plans within limitations described in TR-55.
HEC-1, HEC-HMS	US Army Corps of Engineers	Where use of full hydrologic computer model is desirable or necessary.
PSRM	Penn State University	Where use of full hydrologic computer model is desirable or necessary.
Rational Method	Emil Kuichling (1889)	For sites less than 10 acres, or as approved by the Commission Engineer.
Other Methods	Varies	Other computations approved by Commission Engineer.

D. **Water Quality Requirements**

1. For water quality, the objective is to provide adequate storage to capture and treat the runoff from 90% of the average annual rainfall in accordance with the following where P represents the depth of rain associated with 90% of the total rainfall events over 0.11 inches.
   a. The size of the water quality facility shall be based upon the following equation:

$$WQ_v = \frac{(1.2)(R_v)(A)}{12}$$ P = 1.2 inches of rainfall

Where: WQ_v = water quality volume (in ac-ft)
R_v = 0.05 + 0.009(I) where I is percent impervious cover
A = area in acres*

*Treatment of the WQ_v for offsite areas and areas not disturbed is not required.

b. Treatment of the WQ_v shall be provided at all developments where stormwater management is required. A minimum WQ_v of 0.2 inches per acre shall be met at sites or in drainage areas that have less than 15% impervious cover.

c. The WQ_v shall be based on the impervious cover for the proposed site. Offsite existing impervious areas may be excluded from the calculation of the water quality volume requirements.

d. When a project contains or is divided by multiple drainage areas, the WQ_v, shall be addressed for each drainage area.

e. Drainage areas having no impervious cover and no proposed disturbance during development may be excluded from the WQ_v calculations. Designers are encouraged to use these areas as non-structural practices for WQ_v treatment.

f. Where structural practices for treating the Recharge Volume (Re_v) are employed upstream of a BMP, the Re_v may be subtracted from the WQ_v used for design.

g. Where non-structural practices are employed in the site design, the WQ_v can be reduced in accordance with the conditions outlined in Appendix O of this Ordinance.

h. The design of the facility shall consider and minimize the chances of clogging and sedimentation potential. Orfices smaller than three (3) inches in diameter are not recommended. However, if the design engineer can provide proof that the smaller orfices are protected from clogging by use of trash racks, etc. smaller orfices may be permitted.

i. When designing flow splitters for off-line practices, consult the small storm hydrology method provided in Appendix P-8 of this Ordinance.

2. To accomplish adequate water quality treatment the final WQ_v shall be treated by an acceptable BMP from the list presented in Appendix P-9 or an equivalent practice approved by the Commission Engineer. The applicant may submit original and innovative designs to the Commission Engineer for review and approval. Such designs may achieve the water quality objectives through a combination of BMPs.

3. The water quality requirement can be met by providing a 24-hour draw down of a portion of the WQ_v in conjunction with a stormwater pond or wetland system. Referred to as extended detention (ED), this is different from providing the extended detention of the one-year storm for the channel protection volume (Cp_v). The ED portion of the WQ_v may be included when routing the Cp_v.

4. In selecting the appropriate BMPs or combinations thereof, the applicant shall consider the following:

a. Total contributing area.
b. Permeability and infiltration rate of the site soils.
c. Slope and topography.
d. Seasonal high water table.
e. Depth to bedrock.
f. Proximity to building foundations and wellheads.
g. Erodibility of soils.
h. Subgrade stability and susceptibility to sinkhole formation
i. Land availability and configuration of the topography.
j. Peak discharge and required volume control.
k. Stream bank erosion.
l. Efficiency of the BMPs to mitigate potential water quality problems.
m. The volume of runoff that will be effectively treated.
n. The nature of pollutants being removed.
o. Creation and protection of wildlife habitat.
p. Enhancement of aesthetic and property values.
q. Maintenance requirements.

5. Stormwater Hotspots - If a site is designated as a stormwater hotspot, as per Table 523-2, it has important implications for how stormwater is managed.

a. A greater level of stormwater treatment is required at hotspot sites to prevent pollutant wash off after construction.

b. For areas designated as hotspots design and implementation of a Stormwater Pollution Prevention Plan may be required containing operation practices at the site to reduce the generation of pollutants by preventing contact with rainfall.

c. Stormwater Pollution Prevention Plans shall follow the requirements of the U.S. EPA NPDES stormwater program.

d. The following land uses and activities are not normally considered hotspots: residential streets and rural highways, residential development, institutional development, commercial and office developments, non-industrial rooftops, pervious areas except for golf courses and nurseries. Large highways and retail gasoline outlet facilities are not designated as hotspots, though it is important to ensure that stormwater plans for these facilities adequately protect groundwater.

Table 523-2: Stormwater Hotspots

Vehicle Salvage Yards and Recycling Facilities*
Vehicle Service and Maintenance Facilities
Vehicle and Equipment Cleaning Facilities*
Fleet Storage Areas (bus, truck, etc)*
Industrial Sites
Marinas (service and maintenance)*
Outdoor Liquid Container Storage
Outdoor Loading/Unloading Facilities
Public Works Storage Areas
Facilities that Generate or Store Hazardous Materials*
Commercial Container Nursery
Golf Courses
Other land uses and activities as designated.

* Stormwater Pollution Plan implementation may be required for these land uses or activities under the U.S. EPA NPDES stormwater program.

E. **Groundwater Recharge (Infiltration/Recharge/Retention) Requirements**

1. Design of the infiltration/recharge stormwater management facilities shall give consideration to providing ground water recharge to compensate for the reduction in the percolation that occurs when the ground surface is paved and roofed over. These measures are encouraged particularly in hydrologic soil groups A and B, and shall be utilized wherever feasible.

2. The criteria for maintaining recharge is based on the USDA average annual recharge volume per soil type divided by the annual rainfall in Union County (40 inches per year) and multiplied by 90%. This keeps the recharge calculation consistent with the WQ_v methodology. Thus, an annual recharge volume requirement shall be specified for a site as follows:

   a. Percent Volume Method

   $Re_v = [(S)(R_v)(A)]/12$

   Where: $R_v = 0.05 + 0.009(I)$, where I is percent impervious cover
   A = site area in acres

   b. Percent Area Method

   $Re_v = (S)(A_i)$

   Where: A_i = the measured impervious cover

Hydrologic Soil Group	Soil Specific Recharge Factor (S)
A	0.40
B	0.27
C	0.14
D	0.07

   c. The recharge volume is considered part of the total WQ_v that must be provided at a site and can be achieved either by a structural practice (e.g., infiltration, bioretention), a non-structural practice (e.g., buffers, disconnection of rooftops), or a combination of both.

   d. Drainage areas having no impervious cover and no proposed disturbance during development may be excluded from the Re_v calculations. Designers are encouraged to use these areas as non-structural practices for Re_v treatment.

   e. The Re_v and WQ_v are inclusive. When treated separately, the Re_v may be subtracted from the WQ_v when sizing the water quality BMP.

   f. Recharge/infiltration facilities may be used in conjunction with other innovative or traditional BMPs, stormwater control facilities, and nonstructural stormwater management practices.

   g. Where pervious pavement is permitted for parking lots, recreational facilities, non-dedicated streets, or other areas, pavement construction specifications shall be noted on the plan.

3. Basis for Determining Recharge Volume

a. If more than one Hydrologic Soil Group (HSG) is present at a site, a composite soil specific recharge factor shall be computed based on the proportion of total site area within each HSG. **The recharge volume provided at the site shall be directed to the most permeable HSG available.**

b. **The "percent volume" method is used to determine the Re_v treatment requirement when <u>structural practices</u> are used to provide recharge.** These practices must provide seepage into the ground and may include infiltration and exfiltration structures (e.g., infiltration, bioretention, dry swales or sand filters with storage below the under drain). Structures that require impermeable liners, intercept groundwater, or are designed for trapping sediment (e.g., forbays) may not be used. In this method, the volume of runoff treated by structural practices shall meet or exceed the computed recharge volume.

c. **The "percent area" method is used to determine the Re_v treatment requirements when <u>non-structural practices</u> are used.** Under this method, the recharge requirements are evaluated by mapping the percent of impervious area that is effectively treated by an acceptable non-structural practice and comparing it to the minimum recharge requirements.

d. Acceptable non-structural practices include filter strips that treat rooftop or parking lot runoff, sheet flow discharge to stream buffers, and grass channels that treat roadway runoff.

e. The recharge volume criterion does not apply to any portion of a site designated as a stormwater hotspot or any project considered as redevelopment. In addition, the Commission, with the concurrence of the Commission Engineer, may alter or eliminate the recharge volume requirement if the site is situated on unsuitable soils (e.g. marine clays), on karst, or in an urban redevelopment area. In this situation, non-structural practices (percent area method) shall be implemented to the maximum extent practicable and the remaining or untreated Re_v included in the WQ_v treatment.

f. If Re_v is treated by structural or non-structural practices separate and upstream of the WQ_v treatment, the WQ_v is adjusted accordingly.

4. Soils Evaluation

a. **A detailed soils evaluation of the project site shall be performed to determine the suitability of recharge facilities.** The evaluation shall be performed by a qualified professional, and at a minimum, address soil permeability, depth to bedrock, susceptibility to sinkhole formation, and subgrade stability.

b. **Extreme caution shall be exercised where infiltration is proposed in geologically susceptible areas such as strip mine or limestone areas.** Extreme caution shall also be exercised where salt or chloride would be a pollutant since soils do little to filter this pollutant and it may contaminate the groundwater. It is also extremely important that the design professional evaluate the possibility of groundwater contamination from the proposed infiltration/recharge facility and recommend that a hydrogeologic justification study be performed if necessary. Whenever a basin will be located in an area underlain by limestone, a geological evaluation of the proposed location shall be conducted to determine susceptibility to sinkhole formations. The design of all facilities over limestone formations shall include measures to prevent ground water contamination and, where necessary, sinkhole formation.

c. The Commission may require the installation of an impermeable liner in stormwater management facilities underlain by limestone or in areas of karst topography. A detailed hydrogeologic investigation may be required. The developer may also be required to provide safeguards against groundwater contamination for uses that may cause groundwater contamination, should there be an accident or spill.

5. All recharge/infiltration facilities shall be designed to completely drain within 72 hours of reaching maximum capacity.

F. **Channel Protection Storage Volume** (**Stream Bank Erosion) Requirements**

1. Stream Channel Protection shall be considered in implementing the standards of Section 523.G of this Ordinance. If a stormwater storage facility needs to be constructed then, to protect channels from erosion, the outflow structure shall be designed to provide **24 hour extended detention of the one-year; 24-hour storm event.** The method for determining the Channel Protection Storage Volume (Cp_v) requirement is detailed in Appendix P-10 of this Ordinance.

2. For discharges to streams having verified naturally reproducing wild trout or currently being stocked with trout (based upon the most recent resource classification or other appropriate documentation of the Pennsylvania Fish and Boat Commission or other appropriate agency), only 12 hours of extended detention shall be provided. The rationale for this criterion is that runoff will be stored and released in such a gradual manner that critical erosive velocities during bankfull and near-bankfull events will seldom be exceeded in downstream channels.

3. Basis for Determining Channel Protection Storage Volume

   a. The models HEC-HMS, TR-55 and TR-20 (or an equivalent approved by the Commission Engineer) shall be used for determining peak discharge rates.

   b. The rainfall depth for the one-year 24-hour storm event in Union County is 2.4 inches.

   c. Off-site areas shall be modeled as present land use in good condition for the one (1) year storm event.

   d. The length of overland flow used in time of concentration (t_c) calculations is limited to no more than 150 feet.

   e. The Cp_v storage volume shall be computed using the detention lag time between hydrograph procedures outlined in Appendix P-10 of this Ordinance. The detention lag time (T) for a one-year (1) storm is defined as the interval between the center of mass of the inflow hydrograph and the center of mass of the outflow hydrograph.

   f. Cp_v is not required at sites where the one-year post development peak discharge (q_i) is less than or equal to 2.0 cfs. A Cp_v orifice diameter (d_o) of less than 3.0 inches is subject to approval by the Commission Engineer and is not recommended unless an internal control for orifice protection is used.

   g. Cp_v shall be addressed for the entire site. If a site consists of multiple drainage areas, Cp_v may be distributed proportionately to each drainage area.

   h. Extended detention storage provided for the Cp_v does not meet the WQ_v requirement (i.e. Cp_v and WQ_v shall be treated separately).

i. The stormwater storage needed for the Cp_v may be provided above the WQ_v storage in stormwater ponds and wetlands; thereby meeting all storage criteria except Re_v in a single facility with appropriate hydraulic control structures for each storage requirement.

j. Infiltration is not recommended for Cp_v control because of large storage requirements.

G. **Overbank and Extreme Event Flood Protection Requirements**

For a site located within two or more districts, the peak discharge rate from any sub-area shall be the pre-development peak discharge for that sub-area. The calculated peak discharges shall apply regardless of whether the grading plan changes the drainage area by sub-area.

1. Bull Run Watershed - The Bull Run Watershed Release Rate Area Maps in Appendix Q-1 of this Ordinance illustrate the release rate subareas. The percentage of pre-development peak rate of runoff that can be discharged from an outfall on the site after development are prescribed in Table 523-3. The Release Rates apply uniformly to all land development or alterations within a subarea. Procedures for applying the Release Rate Percentage are contained in Appendix P-7.

2. Buffalo Creek Watershed – The Buffalo Creek Watershed Runoff Control Districts Map in Appendix Q-2 of this Ordinance illustrates the three (3) major Runoff Control Districts; shown as "A", B", and "C". Development sites located in the "A", "B", and "C" Districts must control post-development runoff rates to pre-development runoff rates as shown in Table 523-4.

Table 523-3: Bull Run Watershed Release Rates

Subareas		Release Rate (%)
Bull Run Watershed	1	80
	2	50
	3	100
	4	100
	5	60
	6	60
	7	100
	8	70
	9	50
	10	60
Miller Run	37-40	100
	42-45	100
	46	75
	47	100
	49-51	100

Table 523-4: Buffalo Creek Watershed Release Rates

Runoff Control Districts		Subareas	Post-Development Design Storm	Pre-Development Design Storm
	A	1-4	2-Year 10-Year 50-Year	1-Year 10-Year 50-Year
		16		
		28-39		
		58-59		
	B	5-15	2-Year 10-Year 50-Year	1-Year 5-Year 25-Year
		17-27		
		40-55		
		60-65		
		70-75		
	C	79-81	2-Year 10-Year 50-Year	1-Year 10-Year 50-Year
		56-57		
		66-69		
		76-78		
		82-92		

3. Fishing Creek/Cedar Run Watershed - In the Fishing Creek/Cedar Run Watershed post-development runoff rates must be controlled to pre-development runoff rates as follows:

Type of Storm	Control for Development
2-Year	2-Year Pre-development Peak Runoff
10-Year	10-Year Pre-development Peak Runoff
25-Year	25-Year Pre-development Peak Runoff

4. [Reserved for performance standards to be determined by a Penns Creek Act 167 Watershed Plan.]

5. West Branch Susquehanna River Watershed – The West Branch Susquehanna River Watershed has a 100% Release Rate for the percentage of pre-development peak rate of runoff that can be discharged from an outfall on the site after development for all but three subareas. Those subareas without a 100% percent release rate are: Subarea 3-37 at 90%, Subarea 3-38 at 60%, and Subarea 5-3 at a 50% Release Rate Percentage.

6. White Deer Creek Watershed - The White Deer Creek Watershed has a 100% Release Rate for the percentage of pre-development peak rate of runoff that can be discharged from an outfall on the site after development. The Release Rates apply uniformly to all land development or alterations within the watershed. Procedures for applying the Release Rate Percentage are contained in Appendix P-7.

7. [Reserved for performance standards to be determined by a White Deer Hole Creek Act 167 Watershed Plan]

8. General Stormwater Management Requirements- In those areas without approved Act

167 Stormwater Management Plans runoff shall be controlled so that post-development runoff rates shall not exceed pre-development runoff rates for the 2-, 5-, 10-, 25-, 50-, and 100-year storm events. All other standards of this Ordinance shall also apply.

H. **Design Considerations**

1. All storm sewers shall be able to convey the post-development runoff from a 10-year design storm without surcharging inlets, and shall be constructed using PennDOT Form 408 Specifications, Standard Details, unless otherwise directed by the Commission.

2. Storm water roof drains shall not discharge into any municipal sanitary sewer line or over a sidewalk.

3. Inlets shall be placed at the curb line where a curbed section is installed. Inlets required for parallel or cross drainage without a curbed section shall be set at the centerline of the ditch.

4. Structures shall be PennDOT Type M pre-cast concrete or cast-in-place Class A concrete. Brick or block structures shall not be permitted. Solid concrete block or brick may be incorporated into a structure only for grade adjustment of the casting.

5. All water obstructions (bridges, culverts, outfalls or stream enclosures) shall have ample waterway opening to carry expected flows, based on a minimum post development peak storm frequency of twenty-five (25) years and shall have a minimum of one (1) foot of freeboard measured below the lowest point along the top of the roadway.

6. Bridge and culvert construction shall be in accordance with the Pennsylvania Department of Transportation specifications and shall meet the requirements of the Pennsylvania Department of Environmental Protection.

7. Any drainage conveyance facility and/or channel that does not fall under PA DEP Chapter 105 Regulations must be able to convey, without damage to the drainage structure or roadway, runoff from the 10-year design storm. Conveyance facilities to or exiting from stormwater management facilities (i.e detention basins) shall be designed to convey the design flow to or from that structure.

8. Roadway crossings located within designated floodplain areas shall be able to convey runoff from a 100-year design storm.

9. Any stormwater management facility designed to store runoff and requiring an earthen berm or embankment shall be designed with an emergency spillway to handle flow up to and including the 100-year post-development conditions. The height of the embankment must be set to provide a minimum of one (1) foot of freeboard above the maximum pool elevation, computed when the facility functions for the 100-year post-development inflow.

10. Stormwater management facilities that require a dam safety permit under PA DEP Chapter 105 shall meet the applicable dam safety requirements, which may require the facility to pass storms larger than the 100-year event.

11. Adequate erosion protection shall be provided along all open channels and at all points of discharge.

12. Detention basins for stormwater peak discharge storage shall comply with the following criteria:

a. Basins shall be installed prior to any earthmoving or land disturbance in contributing drainage areas the basin will serve. The phasing of their construction shall be noted in a narrative and on the plan.

b. Basins located in an area underlain by limestone may require a geologic evaluation to determine susceptibility to sinkhole formations. The design of all facilities over limestone formations shall include measures to prevent ground water contamination and, where necessary, sinkhole formation. The Commission may require basins located over limestone to have an impermeable liner.

c. Soils used in construction of basins shall have low erosion factors ("K factors").

d. Energy dissipators and/or level spreaders shall be installed at points where pipes or drainage ways discharge to or from basins. Discharge from basins shall be into a natural waterway or drainage way.

e. Exterior slopes of compacted soil shall not exceed one foot (1') vertical per three feet (3') horizontal and may be further reduced if the soil has unstable characteristics.

f. Interior slopes of the basin shall not exceed one foot (1') vertical per three feet (3') horizontal except with the approval of the Commission. Where concrete, stone, or brick walls are used for steeper interior slopes, the basin shall be fenced with a permanent wire fence at least forty-two inches (42") in height, and a ramp of durable, non-slip materials for maintenance vehicles shall be provided for basin access.

g. Outlet structures within basins that will control peak discharge flows and distribute the flows by pipes to discharge areas shall be constructed of concrete or polymer-coated steel or aluminum. They shall have childproof, non-clogging trash racks over all design openings exceeding twelve (12") inches in diameter, except those openings used to carry perennial stream flows. Small outlet structures may be constructed of Schedule 40 PVC.

h. Where spillways will be used to control peak discharges in excess of the ten (10) year storm, control weirs shall be constructed of concrete of sufficient mass and structural stability to withstand the pressures of impounded waters and outlet velocities.

i. Concrete outlet aprons shall be designed as level spreaders and shall extend at a minimum to the toe of the basin slope. The incorporation into the concrete apron of any large stone found on the site is encouraged to provide a more natural appearance.

j. Inlet and outlet structures shall be located at maximum distance from each other. The Commission may require a rock filter berm or rock-filled gabions between inlet and outlet areas when the distance is deemed insufficient for sediment trappings.

k. Temporary and permanent grasses or stabilization measures shall be established on the sides of all earthen basins within fifteen (15) days of initial construction.

I. **Drainage Plan Contents** - In addition to the Plan Requirements required in Article IV of this Ordinance Applicants are required to submit the following additional materials for the purposes of evaluating stormwater management.

1. Narrative describing the overall general stormwater management concept.

2. General description of permanent stormwater management techniques and construction specifications.

3. Complete hydrologic, hydraulic and structural computations for all stormwater management facilities.

4. Complete calculations for determining compliance with Sections 523.C, 523.D, 523.E, 523.F and 523.G of this Ordinance.

5. Horizontal and vertical profiles of all open channels, including hydraulic capacity.

6. Total of upstream drainage flowing through the site.

7. The effect of the project (in terms of runoff volumes and peak flows) on adjacent properties and on any existing municipal stormwater collection system that may receive runoff from the project.

8. Overland drainage paths.

11. A Declaration of Adequacy and Highway Occupancy Permit from Penn DOT when the utilization of a Penn DOT storm drainage system is proposed.

12. Plan for the long-term maintenance of all stormwater management facilities, including a Standard Stormwater Facilities Maintenance Agreement suitable for recording in the Union County Recorder of Deeds Office. See Appendix R.

J. Municipal Stormwater Maintenance Fund [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

524 EROSION AND SEDIMENTATION POLLUTION CONTROL AND GRADING

Subdivision and land development activities shall be conducted in strict accordance with this Section in order to prevent accelerated erosion and resulting sedimentation.

A. No changes shall be made in the contour of the land, no grading, excavating, removal, or destruction of topsoil, trees or other vegetative cover shall be commenced until a plan for minimizing erosion and sedimentation has been reviewed and approved by the Union County Conservation District and the Union County Planning Commission as part of an application for Preliminary or Final Plan approval.

B. All applications for subdivision and land development approval will be required to submit an Erosion and Sedimentation Pollution Control Plan and obtain necessary approvals from the Conservation District where land disturbance is proposed. This shall include small projects that are proposing disturbance on less than one (1) acre. In lieu of an Erosion and Sedimentation Pollution Control Plan the Commission may accept a written statement from the Conservation District indicating that said plan is not necessary for the project.

C. All subdivision and land development applications shall conform to applicable municipal ordinances and the requirements of Chapter 102 of Administrative Code, Title 25, "Erosion Control Rules and Regulations", as amended or replaced, and to the requirements of the Pennsylvania Department of Environmental Protection.

D. The Erosion and Sedimentation Pollution Control Plan shall be prepared by a person trained and experienced in erosion and sedimentation pollution control methods and techniques.

E. No grading, removal of vegetation, construction or other disturbance shall be permitted on soils that are classified as slide-prone or unstable in the Union County Soil Survey or on any other areas of a proposed development that exhibit signs of instability or subsidence except in accordance with the provisions of this section

F. The following measures shall be taken to effectively minimize erosion and sedimentation and shall be included where applicable:

1. Stripping of vegetation and grading shall be kept to a minimum.

2. Vegetation to be retained shall be protected during the construction process and trees and other vegetation shall be marked and roped off to protect them from damage by construction equipment. Filling around trees shall also be avoided.

3. Topsoil from areas where cuts and fills have been made shall be stockpiled and uniformly redistributed after grading, to aid in the revegetation process.

4. Development plans shall preserve significant natural features, cut and fill operations shall be kept to a minimum, and plans shall conform to the topography so as to create the least erosion potential and to handle adequately the volume and velocity of surface water runoff.

5. Whenever feasible natural vegetation shall be retained, protected and supplemented.

6. The disturbed area and the duration of the exposure shall be kept to a minimum.

7. Disturbed soils shall be stabilized by permanent vegetation and/or by engineered erosion control and drainage measures.

8. Temporary vegetation and/or mulching shall be used to protect exposed critical areas during development.

9. Provisions shall be made to effectively accommodate the increased runoff caused by changed soil and surface conditions during and after development. Where necessary the rate of surface water runoff shall be structurally retarded during development.

10. Sediment in water runoff shall be trapped until the disturbed area is stabilized by the use of debris basins, sediment basins, silt fence, hay bales, rock filter berms, and/or similar measures.

G. The following additional erosion and sedimentation control design standards and criteria shall be applied where infiltration Best Management Practices (BMP's) are proposed as part of the stormwater management plan:

1. Areas proposed for infiltration BMP's shall be protected from sedimentation and compaction during construction phases so as to maintain their maximum infiltration capacity.

2. Infiltration BMP's shall not be constructed nor receive runoff until the entire contributory drainage area to the infiltration BMP has received final stabilization.

H. The applicant shall be responsible for protecting adjacent and downstream properties from any damage that occurs as a result of earth disturbance on the development site.

I. Fill areas shall be prepared by removing organic material such as vegetation and rubbish and any other material determined by the engineer to prevent proper compaction and stability of the soil.

J. Maximum steepness of graded and cut slopes shall be no greater than two (2) horizontal units to one (1) vertical unit (2:1) except when the Commission approves alternatives under the following conditions:

1. Where the height of a proposed slope will not exceed ten (10) feet, then a maximum slope steepness of one to one (1:1) may be allowed where the soil and geologic conditions permit, and if doing so will help to preserve existing vegetation or other significant natural features. The cut or fill shall be located so that a line having a slope of two (2) horizontal to one (1) vertical and passing through any portion of the slope face will be entirely inside the property lines of the proposed development.

2. Where a concrete or stone masonry retaining wall, designed to sound engineering standards, sealed by a registered professional engineer, and approved by the Commission Engineer, is constructed to support the face of the slope.

3. The material in which the excavation is made is sufficiently stable to sustain a slope steeper than two (2) horizontal to one (1) vertical (2:1), and a written statement is provided by a licensed civil engineer experienced in erosion control and slope stability that is acceptable to the Commission Engineer and the local municipality. The statement shall state that the site has been inspected and that the deviation from the slope specified in this Ordinance will not result in injury to persons or damage to property.

4. All fill is located so that settlement, sliding, or erosion will not result in property damage or be hazardous to adjoining property, streets, alleys, or structures.

K. Graded slopes of twenty (20) or more feet in height shall be benched every twelve (12) feet.

1. Benches shall have a minimum width of six (6) feet and a maximum slope of five (5) percent.

2. Benches shall be planted with trees at a rate of one (1) tree per thirty (30) lineal feet of bench. Tree plantings shall meet the requirements of Section 518 of this Ordinance.

525 STEEP SLOPES

A. Structures and grading of land shall be located on portions of a development site where the slope is less than twenty-five percent (25%).

B. A limited amount of disturbance, up to twenty-five percent (25%) of the steep slope area with grades between twenty-five percent (25%) and thirty-five percent (35%), may be approved if evidence of the safety of any proposed disturbance has been documented. Such evidence of the safety of any proposed disturbance shall require a site investigation and certification in writing, by a registered professional soils engineer, engineering geologist, or civil engineer with demonstrated competency and experience in soils engineering, that the proposed activity will not create or exacerbate unsafe conditions.

526 FLOODPLAIN MANAGEMENT

The requirements of this Section are intended to protect property owners from increased flood hazards resulting from inappropriate development in the floodplain and to protect potential buyers from purchasing land which may not be suitable for development. Plans shall also comply with the applicable Federal Emergency Management Agency (FEMA) and municipal floodplain management regulations.

A. The inclusion of a floodplain within lots in order to meet the minimum lot area and/or yard requirements is allowed provided each lot contains sufficient area exclusive of the 100-Year regulatory floodplain for buildings and, when applicable, for on-lot sanitary sewage disposal systems and replacement areas.

B. The Commission may require the applicant, as a stipulation of plan approval, to include the following note on the plan and a similar reference in the deed for lots containing floodplain areas:

"NOTE: Lot(s) No.___ are completely or partially within the regulatory floodplain and any development on such lots shall occur in accordance with all federal, state, and municipal floodplain management regulations. In addition, lending institutions may require the mandatory purchase of flood insurance for home mortgages. "

C. All public and private utilities and facilities shall be designed and constructed to preclude flood damage and shall be floodproofed up to the Regulatory Flood Elevation in accordance with the Federal Emergency Management Agency (FEMA) floodproofing guidelines. Documentation by a Professional Engineer or Architect shall be provided indicating compliance with FEMA guidelines in regard to the following minimum conditions: (1) a flood elevation certificate shall be provided for all building construction; (2) a determination of the structural adequacy against pressure, velocity, uplift, siding, overturning, and impact; and (3) a statement of the types of materials and safeguards incorporated to prevent leakage, spillage or contamination.

D. Final street elevations shall not be less than the 100-Year regulatory base flood elevation.

E. When a site is adjacent to or traversed by a watercourse that does not have a 100-Year regulatory floodplain delineated, all structures shall be setback at least 50 feet from the top of the nearest stream bank.

527 WETLANDS

A. No subdivision or land development shall involve uses, activities, or improvements that would result in encroachment into, regrading of, or placement of fill in wetlands in violation of state and/or federal regulations.

B. Activities shall be prohibited that will alter, diminish, or eliminate hydrologic conditions, existing hydric soil conditions, or wetland plant species.

C. If wetlands are to be altered by the proposed activity the Commission shall require copies of appropriate permits and approvals granted by state and/or federal regulatory agencies prior to plan approval.

D. The Commission may require the applicant, as a stipulation of plan approval, to include the following note on the plan and a similar reference in the deed for lots containing wetland areas:

"NOTE: Wetlands exist on Lot(s) No.___. Wetlands are protected under state and federal law and caution should be exercised to ensure that any development proposed for Lot No.____ does not disturb the wetlands."

E. A jurisdictional wetland delineation by the United States Army Corps of Engineers is strongly encouraged and may be required where wetlands exist and could be impacted by development activities.

F. Development activities are encouraged to avoid wetland impacts by design with the natural environment. Wetlands should be used to compliment development by integrating stormwater management and water quality management activities where practical.

528 SOLUTION PRONE CARBONATE GEOLOGY AND SINKHOLES

A. All subdivisions and land developments in areas underlain by carbonate geology shall be designed and constructed to minimize any impacts which may affect, increase, diminish, or change any natural drainage, natural springs, water quality, geological stability or groundwater table.

B. Subdivisions and land developments that pose significant risks of stimulating the formation of sinkholes or of causing hydrologic connection of contaminated surface water with subsurface aquifers shall not be approved without certification, from a professional engineer and/or other qualified individual with demonstrated competency in geology or hydrogeology, that such proposed use and design is safe and environmentally sound.

C. When the Commission determines there is probability that a project will affect or be affected by carbonate geologic hazards, the Commission may require the submission of a hydrogeologic report.

D. In making a determination whether or not a project will affect or be affected by carbonate geologic hazards, the Commission shall consider the carbonate features in the vicinity, testimony of qualified experts (i.e. professional geologist, hydrogeologist, or engineer with documented expertise of carbonate geology), recommendation by the municipality, and such other reasonable information as may be available.

E. All sinkholes shall be posted by permanent and clearly visible on-site notices prohibiting any disposal of refuse, rubbish, hazardous wastes, organic matter or soil into the sinkhole. Concrete liners, rockfill or other acceptable capping procedures may be permitted in the sinkhole for purposes of preventing dumping of said materials with the approval of the Commission Engineer.

F. All sinkholes shall have a buffer as determined necessary for public safety. The buffer size will vary based upon site conditions and an analysis of drainage in the sinkhole area by a professional engineer or other qualified individual with demonstrated competency in geology or hydrogeology.

G. No stormwater management basins shall be placed in or over sinkholes, closed depressions, lineaments in carbonate areas, fracture traces, caverns, ghost lakes, or disappearing streams.

H. New sinkhole formation, as a result of construction activities or natural causes, shall be reported to the Commission and the PA DEP. Emergency repairs may be required under the supervision of the PA DEP or the Commission's Engineer to prevent groundwater contamination.

I. Improvements necessary to safeguard against groundwater contamination, or structural instability for proposed development, or construction activities as a result of the hydrological investigation, will be a condition of final subdivision or land development plan approval.

529 NATURAL FEATURES

A. Habitats and Natural Features of Special Concern

1. Where the presence of natural features and habitats of special concern (i.e. those areas listed in the Natural Areas Inventory of Union County or habitats of rare, threatened and endangered species) is known or suspected, or where required by the PA DEP or other permitting agency, the applicant shall notify the Pennsylvania Department of Conservation and Natural Resources (PA DCNR) of the proposed subdivision or land development and request a determination concerning the presence of significant resources from the Pennsylvania Natural Diversity Index (PNDI).

2. Where a proposed subdivision or land development includes an identified natural feature and/or habitat of special concern, such as rare, threatened or endangered species which are regulated by municipal, state, or federal law, the applicant shall provide evidence of compliance with any applicable regulation.

3. The Commission will impose conditions it deems reasonable and appropriate in order to protect such habitats and to prevent degradation of natural features.

B. **Existing Wooded Areas**

1. Subdivisions and land developments shall be designed to avoid unnecessary removal or destruction of trees and understory vegetation, particularly in undeveloped tract areas.

2. At least twenty-five percent (25%) of the number of trees that exist at the time of plan approval shall be maintained or replaced immediately following construction. Replacement trees shall be a mix of native species with a minimum trunk caliper of two (2) inches and a minimum height of six (6) feet. They shall be planted at a density equivalent to that existing before development.

3. Development activities are encouraged to integrate wooded areas into stormwater management design to promote natural infiltration of runoff where practical.

4. Priority shall be given to the preservation of trees and vegetation in 100-year floodplains, wetlands, stream corridors and steep slopes.

5. Any tree that may be noteworthy because of its species, age, uniqueness, rarity or status as a landmark due to historical or other cultural associations shall be preserved unless removal is deemed necessary determined by a professional arborist, forester, or landscape architect or if the tree is likely to endanger the public or an adjoining property.

6. Trees to be preserved shall be protected during construction and the critical root zones shall be clearly staked and protected by fencing to prevent damage.

C. **Stream Corridors-** In order to prevent increased erosion, stream bank instability, non-point source and thermal pollution, the removal of trees and vegetation shall be not be permitted within fifty feet (50') of the top bank of any watercourse. Invasive species, however, may be removed if replaced with native vegetation and, selective timber harvesting is permitted as part of the development if accompanied by a certified forest resources and timber management plan prepared by a qualified professional forester.

530 [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

531 CULTURAL AND HISTORIC RESOURCES

A. **Archaeological Investigations.** Where the presence of archaeological features is known or suspected, or where required by the PA DEP or other permitting agency, the applicant shall notify the Pennsylvania Historic and Museum Commission (PHMC) of the proposed subdivision or land development and request a determination concerning the presence of significant resources from PHMC.

B. **Historic Resource Preservation**. Subdivisions and land developments shall be designed to preserve, adaptively reuse, or otherwise provide for the historic features of Union County, and new construction shall be designed to be visually complimentary to historic structures and sites. If due to size, scale, construction material, or type of proposed use, a subdivision or land

development would jeopardize the historic value of a site or structure, such new construction shall be screened or otherwise visually buffered.

C. **Historic Resource Demolition.** No historic feature as defined in this Ordinance shall be infringed upon, demolished, or moved from its original foundations without approval of the Commission. The applicant shall submit to the Commission letters from the PHMC and from the Union County Historical Society with their review and recommendation. In evaluating any request for demolition of a historic feature the Commission shall take into account the significance of the property, the condition of the feature and the potential for repair, restoration, stabilization and reuse, the impact of the feature in relation to the total project, and the hardship, if any, on the applicant.

D. **Retention of Local Names.** Applicants are encouraged to perpetuate historic names or geographic references that are traditionally associated with the area in which a project is located, rather than proposing project names that are not consistent with Union County traditions or culture.

532 COMMUNITY AND NATURAL FEATURES IMPACT ANALYSIS

A. All subdivisions and land development applications that involve the creation of 25 or more dwelling units, generate 200 vehicle trips or more per average weekday, or are considered a development of regional significance, shall be required to include a Community Impact and Natural Features Analysis in accordance with this Section.

B. **Community Impact Analysis**. The Community Impact Analysis shall analyze and evaluate the impact of the proposed subdivision or land development on community facilities and shall include but not be limited to a detailed examination of the following:

1. Water supply analysis, including the volume of water needed to support the proposed use, source(s), source viability, source quality, and impact of proposed use on surface water flows, groundwater levels, and adjacent wells.

2. Sewage collection and treatment.

3. Accessibility to and adequacy of emergency services (ambulance, fire and police).

4. Surface, ground, and storm water management including potential for contamination of surface and groundwater supplies.

5. A Visual Impact Assessment which shall include (i) a Zone of Visibility Map to determine the locations from which the facility may be observed, (ii) pictorial representations of key viewpoints as may be appropriate, including but not limited to public roads, public parks, public lands, historic districts and sites, and other locations where the site is visible to large numbers of persons, and (iii) an assessment of the visual impact of the facility as it relates to appropriate screening.

6. Air quality impacts, including a description of proposed emissions and specific information related to impacts upon human health and the environment.
7. Other community facilities that may be impacted

8. A comparison shall be made and submitted of the estimated costs for services to the municipality versus the estimated revenues to be generated from the subdivision or land development.

9. The applicant shall demonstrate that the appropriate providers of utility services, including but not limited to, electric, sewer, water, telephone, and refuse removal have certified that services will be provided to the site.

10. A Traffic Engineering Study shall be prepared as part of the Community Impact Analysis in accordance with Section 510 of this Ordinance.

11. A market analysis that shall demonstrate a sufficient market exists for the specific types of development proposed.

C. **Natural Features Analysis.** The Natural Features Analysis shall analyze and evaluate the impact of the proposed subdivision or land development on natural features on the subject tract and the surrounding area. This analysis shall include but not be limited to the following:

1. An analysis of natural drainage patterns and water resources, including streams, natural swales, ponds, lakes, wetlands, floodplain areas and permanent and seasonal high water table areas.

2. An analysis of the site geology that considers characteristics of underlying rock formations, shallow bedrock, aquifers, karst features, and factors that may cause the rock formations to be unstable.

3. An analysis of soil types present on the site including a delineation of prime agricultural soils, hydric soils, unstable soils, soils most susceptible to erosion, and evidence that the soil is suitable for the intended uses.

4. An analysis of topography.

5. An analysis of existing vegetative cover emphasizing the location of woodland and meadowland areas. Dominant tree and plant species shall be identified and certification shall be given that no vegetation on the site is classified as Rare, Threatened or Endangered or listed as worthy of special protection in the Union County Natural Areas Inventory. A PNDI search shall be conducted.

6. An analysis of impacts on wildlife and wildlife habitat and certification shall be given that no species of wildlife or wildlife habitat on the site is classified as Rare, Threatened or Endangered or listed as worthy of special protection in the Union County Natural Areas Inventory.

D. The Community Impact and Natural Features Analyses shall contain proposals to minimize any adverse impacts identified, including, where appropriate, alternative solutions or proposals.

533 PARKS AND OPEN SPACE RESERVATION

A. **Voluntary Provision**. Applicants for approval of major subdivisions and land developments are encouraged to the maximum extent practicable to include open space areas and facilities to meet the recreational needs of residents, employees, and other users of the proposed development.

B. **Mandatory Open Space Dedication**. Applicants for approval of subdivisions and land developments shall set aside and dedicate adequate areas for parks, open space and recreational uses in accordance with the officially adopted county, municipal or multi-municipal parks and recreation master plan that meets the requirements of the Pennsylvania Municipalities Planning Code for the municipality in which the project is located.

C. **Fee in Lieu of Dedication**. Municipalities with official parks and recreation master plans may accept fees in lieu of land dedication. All such fees shall be calculated based upon the requirements of the applicable municipality.

D. **General Standards of Dedicated Lands**. Lands to be dedicated shall meet the following minimum standards:

1. Land area shall be reasonably located so as to serve all residents of the subdivision or land development.

2. Land area intended for park and open space use shall be accessible from a public street or shall adjoin and become part of an already existing public park or open space area which is accessible to a public street.

3. No more than twenty-five (25%) percent of the park and open space land shall contain detention basins or other stormwater management facilities or be located within a floodplain or wetland unless such area is part of a linear trail or greenway along an existing watercourse.

4. When public park and open space land exists adjacent to the tract being subdivided or developed the dedicated, park and open space land shall be located to adjoin and enlarge said lands.

E. **Private Reservation of Open Space**. With approval of the Commission, and of the local municipality having an official parks and recreation master plan, an applicant may elect to fulfill open space requirements by a private reservation of open space and recreation areas through the establishment of an association of property owners or through the donation of a conservation easement to a land trust or other appropriate conservation organization.

F. Ownership and Maintenance of Private Open Space. Private open space areas shall be owned and maintained by the developer, association of property owners, land trust or other entity acceptable to the Commission. A plan for ownership and maintenance of the private open space shall be provided with the plan and shall at a minimum meet the requirements of Section 605.K and 605.L of this Ordinance.

ARTICLE VI

Special Subdivisions & Land Developments

ARTICLE VI

REQUIREMENTS FOR SPECIAL SUBDIVISIONS AND LAND DEVELOPMENTS

600 GENERAL

A. The standards in this Article shall be applied ***in addition to*** the other requirements of this Ordinance in evaluating applications for special types of subdivisions and land developments. Special subdivisions and land developments include, but are not limited to, open space subdivisions, traditional neighborhood developments, mobile home parks, campgrounds and recreational vehicle parks, waste storage, processing, treatment and disposal facilities wireless telecommunications facilities and power generation facilities.

B. Applicants shall be responsible for obtaining all necessary permits and approvals from the Pennsylvania Department of Labor and Industry, Department of Environmental Protection, Department of Health, and other applicable local, state, and federal agencies.

601 MOBILE HOME PARKS

A. **Density, Dimensional and General Standards**

1. The minimum tract size for a Mobile Home Park development shall be ten (10) acres.

2. The minimum tract width of a Mobile Home Park development shall not be less than 250 feet.

3. Mobile Home Parks shall be designed to serve the long-term placement of mobile homes.

4. The maximum number of mobile home lots within a Mobile Home Park shall not be more than seven (7) lots per acre of the total area of the Mobile Home Park.

5. The minimum depth of individual lots within a Mobile Home Park shall not be less than ninety (90) feet or equal to the overall length of the mobile home to be placed on the lot plus thirty (30) feet, whichever length is greater.

6. The minimum width of individual lots within a Mobile Home Park shall not be less than sixty (60) feet and those lots intended for doublewide mobile homes shall not be less than eighty-five (85) feet in width.

7. The minimum lot size for individual lots within a mobile home park shall not be less than 6,300 square feet of area and individual lots intended for doublewide mobile homes shall not be less than 7,650 square feet in area.

8. The minimum distance between mobile homes in the Mobile Home Park shall not be less than twenty-five (25) feet.

9. Mobile Homes within the Mobile Home Park shall be situated so that no mobile home will be placed less than fifty (50) feet from any exterior boundary of the park.

10. Each lot in a Mobile Home Park shall have a number placed on the lot in the form of a sign or directly on the mobile home, that is clearly visible from the road on which the structure fronts.

11. The longitudinal gradient and cross slope of any Mobile Home Park shall not exceed five percent (5%) and the slope of the individual mobile home lot pad areas shall not exceed three percent (3%).

12. Each mobile home lot shall be provided with a concrete patio of a minimum of two-hundred (200) square feet.

13. All Mobile Home Parks shall be landscaped in accordance with Article V, Section 518.

B. **Site Layout**

1. Mobile homes placed on individual lots within the Mobile Home Park are preferably to be placed off-center on the lots so as to provide a larger usable open space in one section of the lot.

2. Groups or clusters of units shall be placed, whenever feasible, to create interior spaces and courtyards.

3. There shall be variety in the arrangement and orientation of mobile homes, with particular attention given to topography and existing trees.

4. Mobile Home Parks shall be designed so that all lots and streets are well drained and free of standing water, and designed in accordance with the stormwater management requirements of Article V, Section 523.

C. **Streets and Access**

1. All mobile home lots shall abut on the internal street system of the Mobile Home Park.

2. All streets within a Mobile Home Park shall be centered in a minimum fifty (50) foot right-of-way.

3. Where mobile home lots are created having frontage on an existing street, the Mobile Home Park street pattern shall provide reverse frontage access to an interior street within the Mobile Home Park.

4. All streets within Mobile Home Parks shall be constructed and paved in accordance with the applicable design standards of Article V, Sections 509 through 516, as determined by the Commission and Commission Engineer.

5. All streets shall be private, and the maintenance, repair, and rehabilitation for adequate and safe ingress and egress shall be the responsibility of the Mobile Home Park owner(s).

D. **Off Street Parking Areas and Sidewalks**

1. All mobile homes shall have 2 off-street parking spaces.

2. Additional parking spaces for vehicles of non-residents shall be provided at the rate of one (1) space for every three (3) mobile home lots. Such parking spaces shall be provided through off-street common parking areas and shall be in locations that are sufficiently dispersed throughout the Mobile Home Park to serve all mobile home lots.

3. All mobile home parks shall provide safe, convenient, all season sidewalks and/or pedestrian walkways between the mobile home lots, streets and all community facilities for park residents.

E. **Sewage Disposal, Water Supply and Other Utility Requirements**

1. All mobile home parks shall be provided with public or central sewer disposal and water supply service.

2. Each mobile home lot shall be provided with a suitable method for connecting the sewage drain outlet to the sewer line. Provision shall be made for plugging the sewer riser pipe when a mobile home does not occupy a lot. Surface drainage shall be diverted away from the riser and the rim of the riser pipe shall be encased in a waterproof catch basin.

3. Each mobile home lot shall have a water riser pipe to connect the mobile home water system to the central or public water system serving the park.

4. All utilities within a Mobile Home Park shall be provided underground to each lot.

5. The Mobile Home Park owner(s) shall be responsible for ownership, maintenance, repair and rehabilitation of adequate utilities to each mobile home lot.

F. **Illumination Standards**

1. All Mobile Home Parks shall be furnished with lighting fixtures so spaced and so equipped with luminaries to provide adequate levels of illumination throughout the park for the safe movement of vehicles and pedestrians.

2. Lighting shall be designed in accordance with Section 514.D of this Ordinance.

G. **Common Opens Space Requirement**

1. A minimum of twenty percent (20%) of the gross area of the Mobile Home Park shall be set aside and provided as open space area available for the use and enjoyment of residents for varied outdoor recreational uses.

2. Common open space shall be substantially free of structures except for those designed for recreational purposes, and shall be in addition to those areas devoted to meeting the buffer yard requirements of this Ordinance.

3. Common open space areas shall be located and designed so they are easily accessible to residents and so that natural features are preserved.

H. **Service Buildings and Facilities**

1. Cluster mailboxes shall be installed where approved by the U.S. Postal Service.

2. Where Liquified Petroleum Gas (LPG) and/or fuel oil supply systems are on site to supply mobile home lots such outside fuel storage tanks or cylinders shall be securely fastened in place and adequately protected from physical damage.

I. **Fire Protection**

1. All Mobile Home Parks shall be provided with fire hydrants that meet the requirements, standards, and recommendation of the local municipality and fire company.

J. **Solid Waste Collection and Disposal**

1. All Mobile Home Parks shall be provided with solid waste collection stations at convenient but inconspicuous locations, each serving not more than 15 mobile home lots. They shall consist of self-closing containers placed upon a concrete slab and accessible for truck pick up. They shall be completely screened from view by solid fencing.

K. **Miscellaneous Structural Requirements**

1. Each mobile home lot shall be improved to provide an adequate frost-free foundation for the placement of the mobile home, thereby securing the superstructure against uplift, sliding or rotation. At a minimum, this shall include the provision of a pad or stand which shall be equal to the length and width of the mobile home to be used at the site.

2. Each mobile home pad or stand shall have adequate provision such as anchor bolts and tie-down straps for both “over the top” and “frame tie downs” to assure that each mobile home has available a means of securing the structure to the site.

3. Each mobile home shall have a skirt installed that is designed to complement the appearance of the mobile home and is coordinated with other units throughout the park.

4. If a hitch or towbar is attached to a mobile home for transport purposes it shall be removed and remain removed from the mobile home when it is placed on its mobile home foundation.

L. **Plan Notes -** The following note shall be placed on all plans for Mobile Home Parks:

"It shall be the responsibility of the Mobile Home Park owner to maintain all improvements and facilities including but not limited to areas and facilities designated for internal roads, sewage disposal, water supply, stormwater management, open space, and solid waste collection."

602 CAMPGROUNDS AND RECREATIONAL VEHICLE PARKS

A. **Design Standards**

1. The minimum tract size for a campground or recreational vehicle park shall be ten (10) acres.

2. The maximum number of camping or recreational vehicle spaces within each campground shall be no more than 15 per acre of the total area of the tract or tracts.

3. Each camping or recreational vehicle space shall be numbered.

4 All camping or recreational vehicle spaces shall abut and have a minimum of thirty (30) feet of frontage on an internal street of the campground or recreational vehicle park.

5. The size and dimensions of individual camping and recreational vehicle sites shall be designed to adequately accommodate the intended use and should provide sufficient separation distance from adjacent sites.

   a. Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3.

   b. Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3.

c. Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3.

6. A minimum of two (2) off street parking spaces shall be provided for each camping or recreational vehicle space within the development. Or one (1) space per site with one (1) space for every two (2) camping spaces off-site.

7. Each camping or recreational vehicle space shall be provided with individual electrical, sewage, and water connections. The Commission may waive these elements for primitive and tent sites.

8. Every campground and recreational vehicle park shall be provided with a public comfort station with showers, restroom facilities and a sheltered drinking fountain in accordance with requirements of the Commonwealth of Pennsylvania including Title 28, Chapter 19 relating to organized camps and campgrounds. (A copy of Chapter 19, "Organized Camps and Campgrounds" is contained in Appendix S of this Ordinance and is available at www.pacode.com.)

9. Every campground and recreational vehicle park shall be provided with a paved sanitary station for the disposal of wastes from vehicle holding tanks. All sanitary stations shall be designed in accordance with PA DEP Sewage Planning requirements and other applicable laws of the Commonwealth.

10. A minimum of ten (10) percent of the gross area of the campground or recreational vehicle park or 500 square feet per camping unit, whichever is greater, shall be set aside for recreation and open space use by all users of the facility.

11. Camping spaces shall be improved to provide an adequate foundation for the placement of a camping unit. Where camping units are intended to include travel trailers, recreational vehicles or other similar portable units, such foundation shall consist of at least a durable, dust free all weather surface.

12. Standard tent sites (non-primitive) shall be provided with a leveling area (tent pad) for the placement of tents.

13. Camping and recreational vehicle spaces shall be appropriately segregated and buffered to promote safety and compatibility among users, and to eliminate nuisances.

14. Internal streets shall meet the minimum design and construction requirements for private streets in accordance with Sections 509 through 516 of this Ordinance with the exception of the following:

    a. One way drives or roadways shall be no less than 12 feet in travel lane width with four (4) foot shoulders.
    b. Cul-de-sac streets shall be provided with a turnaround having an outside right-of-way diameter of at least 90 feet.
    c. With proper stormwater management and drainage to prevent roadway instability and erosion, internal streets in campgrounds may be surfaced with an all weather surface that will provide a mud-free cartway with the permission of the Commission. However the Commission may require that the main entrance be surfaced with a pavement treatment to the main office facility.

15. Sidewalks or pedestrian ways shall be provided to ensure safe pedestrian circulation within the campground or recreation vehicle park to comfort stations, open space areas, and commercial facilities, when offered.

16. Campgrounds or recreational vehicle parks shall provide landscaping and buffer plantings along all property lines in accordance with Section 518 of this Ordinance.

17. Other ancillary services such as laundry facilities, camp store, grocery, office, bathhouse and caretaker's residence, etc. are permitted, provided that such buildings shall be strictly for the use and convenience of those persons utilizing the campground or recreational vehicle park, and are in conformance with applicable zoning regulations.

B. **Flood Evacuation Plans.** Wherever such uses are situated in the regulatory floodplain or known floodprone areas, the campground owner shall ultimately be responsible for evacuation of all units within the campground prior to the occurrence of an anticipated flood. In addition the campground owner/developer shall submit with the plan application and keep on file with the municipality and the County Emergency Services Department a Flood Evacuation Plan that includes the following:

1. Narrative description of the manner in which the site will be safely evacuated upon public announcement of a possible flood event by the National Weather Service or Federal, State or local emergency management agencies.

2. Sufficient evidence that all recreational vehicles, campers, travel trailers, and all temporary occupants will be removed from the regulatory floodplain or known floodprone areas prior to the occurrence of a flood.

3. The designation of an appropriate site to store each unit during the flood emergency. If the designated site area is not owned by the campground owner, a formal agreement to use the lands of others shall be executed.

4. The name, address and telephone number of the campground owner, individuals designated to remove each unit during a flood emergency and other responsible parties, such as management and maintenance personnel.

5. Evidence that park rules and regulations require recreational vehicles, campers, travel trailers and similar vehicles to maintain current vehicle registration, be properly maintained and fully operational, and to be transportable and not permanently affixed to the land.

C. **Plan Notes**. The following notations shall be placed on the plan:

1. Campgrounds and Recreation Vehicle Parks are designed for intermittent recreational use and recreational vehicles used for full-time residential occupancy shall not be permitted.

2. It shall be the responsibility of the Campground and/or Recreational Vehicle Park owner to maintain all improvements and facilities, including but not limited to areas and facilities designated for internal roads, sewage disposal, water supply, stormwater management, open space, and solid waste collection.

603 [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

604 POWER GENERATION FACILITIES

A. **Supplemental Information.** In addition to the other requirements of this Ordinance subdivisions and land developments involving the establishment of Power Generation Facilities, including but not limited to coal fired, natural gas fired, cogeneration, nuclear, solar, water and wind power shall provide the supplemental information noted in this Section.

1. The applicant shall attach a statement to the Subdivision and Land Development application stating that the facility shall be maintained in a safe manner and in compliance with all applicable local, state and federal ordinances, statutes, rules and regulations; the statement shall be signed by the applicant.

2. If the applicant is an entity other than a person the type of entity shall be identified and it shall submit with the application proof, satisfactory to the Commission, that it is authorized to do business in the Commonwealth of Pennsylvania, that it is properly organized and operating under the laws of its state of organization and the Commonwealth of Pennsylvania, that it has legal authority to make the application, construct, lease or operate the facility.

3. If the applicant is not the person or entity that will be operating the facility the applicant shall, in writing, identify the operator by name, address and telephone number.

4. Documentation that demonstrates the need for the Power Generation Facility. Such documentation shall include propagation studies of the proposed site and all adjoining planned, proposed, in-service or existing sites within a 50-mile radius.

5. A diagram, drawn to scale, setting forth distances, dimension and heights for all structures, landscaping, trees, fences, existing or proposed, located within 500 feet of the proposed facility.

6. The number, make, model, manufacturer and design of all Power Generation Structures (including wind turbines, hydroelectric dams, pollution control structures, reactors, etc.) proposed, and the basis for the calculations of the power generation structures' capacity.

7. A narrative description with diagrams, drawing and plans, done to scale, of the proposed Power Generation Structures and all related fixtures, appurtances, and apparatus, materials, color, lighting and height above present existing grade.

8. A copy of the PA DEP, PUC, US EPA and United States Department of Energy (US DOE) license applicable to the intended use of the facility.

9. Certification that the site is adequate to assure the stability of the proposed facility after considering such matters as are appropriate, including but not limited to topographic and geomorphologic studies and analysis, subsurface and substrate conditions, drainage plans, and biological resource surveys including presenting an obstacle to birds in flight.

10. Certification that the Power Generation Facilities and all components are designed and will be built and maintained in accordance with all local, state, and federal ordinances, statutes, rules and regulations.

11. An environmental assessment analysis and a visual addendum, satisfactory to the Commission, if the Commission determines, that it is necessary.

12. Hazardous wastes should be avoided; however, where hazardous material is utilized and/or is a by-product of power generation activity, a hazardous and solid waste management plan shall be prepared and submitted that documents the type and amount of wastes, storage and disposal methods, and an emergency response action plan shall be submitted that meets local, county, state and federal requirements.

13. A Visual Impact Assessment which shall include (i) a Zone of Visibility Map to determine the locations from which the facility may be observed, (ii) pictorial representations of key viewpoints as may be appropriate, including but not limited to

public roads, public parks, public lands, historic districts and sites and from such other locations where the site is visible to large numbers of persons, (iii) an assessment of the visual impact of the facility as it relates to appropriate screening and (iv) any applicable assessments from the Pennsylvania Historic and Museum Commission related to historic property impacts.

14. A plan for water discharge shall be submitted if applicable, detailing how state and federal water quality requirements will be met and how water will be cooled to the average seasonal temperature of the receiving body prior to discharge in order to prevent thermal pollution.

15. Copies of all applicable permits and licenses required by law, rule, ordinance, regulation or code.

16. A written determination as to the necessity of lighting the Power Generation Facility or any of its components in accordance with Federal Aviation Administration (FAA) regulations, as well as all correspondence and filing with, to and from the FAA.

17. All certifications, reports, materials, drawings, diagrams or similar materials shall be prepared, signed and attested to be accurate and correct by a person, persons, or entity, satisfactory to the Commission, who, by training or education or both is, in the judgment of the Commission, qualified to prepare them; when appropriate, the person preparing these certifications, reports, drawing, diagrams, and related material shall be an engineer licensed by the Commonwealth of Pennsylvania.

B. **Power Generation Facilities Location**

1. Power Generation Facilities shall be located, sited and constructed in areas that provide the least visual impact and where they do not interfere with agricultural and natural resource production and conservation.

2. They shall be located in appropriate areas designated by municipal zoning ordinances.

3. They shall be sited in locations that will not pose a significant threat to health, safety and security of the community, residents, schools, livestock, universities or correctional facilities.

4. Any application for the placement of a Power Generation Facility at a location other than set forth in Section 604.B (1) through 604.B (3) above shall be accompanied by a detailed written explanation, as to why it is not located at such site or at such other site, which is more suitable. If the Commission is satisfied that the applicant has made a reasonable effort to obtain a more suitable site but has been unsuccessful it may grant approval for a lesser priority site.

5. The following shall be considered by the Commission in determining if a site is acceptable for a land development for the purposes of constructing a Power Generation Facility and may deny an application if:

   a. It fails to comply with all applicable ordinances, statutes, laws, rules, regulations, or codes.

   b. It conflicts with the historic nature or character of a neighborhood.

   c. Its placement would create an unacceptable risk or the reasonable probability of such, to residents or the public.

C. **Height of Power Generation Facility**

1. The height of any Power Generation Facility shall accord with municipal zoning and shall be the minimum height required to meet power generation and environmental quality objectives. The applicant shall submit with the application such documentation as is necessary to establish the minimum height required.

2. No facility shall be approved which is of such a height as to require artificial lighting unless it can be clearly established by the applicant that such greater height is required based upon technological considerations.

D. **Appearance and Visibility of Power Generation Facilities**

1. No facility shall be artificially lighted or marked except as required by applicable laws, ordinances, statutes, codes, rules and regulations.

2. Wind turbines, emissions stacks and other towers shall be constructed of a non-reflective material, painted with a rust-preventive paint of an appropriate color. They shall be compatible and blend with the surroundings and be maintained in a safe and stable condition.

3. If artificial lighting is required it shall be as unobstructive and inoffensive as is permissible under appropriate ordinances, statutes, laws, rules, regulations and codes. The applicant shall provide a detailed plan for such lighting.

E. **Security of Power Generation Facilities**

1. All turbines, towers, supporting structures including guy wires, transmitters, transformers, transmission lines, control points, sheds and other related facilities shall be secured and maintained in such manner as to prevent access by any persons other than those authorized to operate or service the said facilities. The manner in which the facility is to be secured shall be based on a security plan subject to the approval of the Commission and the local municipality. In no case shall site perimeter security fencing be less than eight (8) feet in height.

2. Warning signs shall be conspicuously posted as necessary on and around the perimeter of the property.

3. Sites with wind turbines that have blades closer than fifteen (15) feet off the ground shall be protected by a site perimeter security fence not less than eight (8) feet in height.

F. **Setbacks -** Power Generation Facilities shall be set back from all lot lines and structures a distance equal to 1.25 times the height of the tallest structure.

G. **General Requirements**

1. The design, construction and maintenance of the Power Generation Facility shall be in accordance with all applicable local, state, and federal ordinances, laws, statutes, codes, rules and regulations and industry standards and certification of compliance shall be provided by the applicant. The certification shall be made by such person or entity who, by training and/or education shall be, in the judgment of the Commission, qualified to make such certification.

2. All utilities servicing the Power Generation Facility shall be installed underground.

3. All Power Generation Facilities shall be sited and designed to have the least visually intrusive effect possible on the surrounding area. The facility shall be designed to include building materials, colors, textures, and landscaping consistent with the immediate area and shall utilize stealth or concealment technology.

4. All Power Generation Facilities shall be serviced by either a public or private road having adequate area for the ingress and egress and operation of all service, construction, and emergency equipment and vehicles. The use of existing private and public roads shall be maximized. Where access is by private road the applicant shall provide evidence of the perpetual legal right to utilize the private road for the applicant's purposes.

H. **Annual Certification**

The operator of a Power Generation Facility shall annually certify in writing to the municipality in which it is located and the Commission that it is in compliance with all applicable local, state and federal laws. This certification shall be attested to by a person or entity who is, by education or experience, qualified in the opinion of the Commission to make such certifications.

I. **Removal of Power Generation Facility**

The applicant and/or developer of the Power Generation Facility shall certify that all antennas, towers, turbines, dams, supporting structures including guy wires, transmitters and control points, sheds and other related facilities will be removed and the site restored to its original state upon discontinuance of use of the facility for a period of one (1) year at his/her sole expense.

605 OPEN SPACE SUBDIVISIONS

The purpose of this section is to provide a flexible development alternative that incorporates permanently protected open space in the design to aid in maintaining and promoting the rural character of the county. The Union County Comprehensive Plan recognizes the importance of open space and the amenities it provides and the intent of this provision is to implement the Union County Comprehensive Plan through encouraging open space development and promoting desirable community development by:

- Maintaining a healthy residential environment with adequate open space and recreational amenities;
- Encouraging land use and development patterns that complement and accentuate the distinctive features of the County's landscapes and natural environment including prime agricultural soils, woodlands, wetlands, stream corridors, steep slopes and scenic views;
- Providing an opportunity for flexibility in lot designs and building arrangement not afforded by conventional lot-by-lot development; and
- Providing for a more varied, innovative and efficient development pattern.

A. Open space subdivisions may be permitted as a development option provided the Applicant demonstrates, to the satisfaction of the Commission, compliance with all design standards and criteria of this section as well as all other applicable provisions of this Ordinance. If a municipality has adopted a Zoning Ordinance but relies on the Union County Subdivision and Land Development Ordinance, this option must be a permitted use in the Zoning District in which it is proposed.

B. Applicants for Open Space Subdivisions are encouraged to first submit a Sketch Plan to the Commission and the local municipality for review and to seek input on what areas of the site are to be conserved as permanent open space and what areas are to be developed.

C. **Minimum tract size** for Open Space Subdivisions shall be 15 acres.

D. **Lot Requirements**

1. **Lot Density** shall be calculated based on the difference between the minimum lot area requirements of this section and those specified for standard subdivisions in Section 505 of this Ordinance (Refer to the example below). The Commission may however consider other density and design alternatives on a case-by-case basis, including the negotiation of a density bonus.

   Example: 20-acre tract with on-lot sewer and water. Under standard subdivision the yield would be twenty (20) 1-acre lots. Under the open space provisions, assuming a 30,000 square foot lot requirement, the same 20 lots could be placed on 15.2 acres while preserving 4.8 acres (24%) as permanent open space.

2. **Minimum Lot Area and Width** shall generally be as per Table 604-1, however the Commission may permit an applicant to vary from the standards below if it can be demonstrated by the applicant, to the Commission's satisfaction, that a proposed alternative will provide equal or better results while meeting the other design requirements and maintaining the integrity of this Ordinance:

Table 604-1

Type of Dwelling or Use	Central Sewer And Water[1,2]		Central Sewer Only		Central Water Only[3]		On-Lot Sewer and Water[3]	
	Area (sq.ft)	Width (ft.)	Area (sq. ft)	Width (ft.)	Area (sq.ft.)	Width (ft.)	Area (sq.ft.)	Width (ft.)
Single Family	7,000	65	19,000	75	25,000	75	30,000	100
Two-Family[4]	3,500	65	9,500	75	12,500	75	15,000	100
Multi-Family	Not Permitted		Not Permitted		Not Permitted		Not Permitted	
Nonresidential	Lot area for nonresidential land uses shall be of sufficient size to incorporate all design elements of this Ordinance (parking, sewage disposal, water supply, buffers, landscaping, etc. At a minimum lot area shall be the area required for sewage disposal in accordance with PA DEP or 25% over the impervious surface square footage proposed for the lot, whichever is greater. In no case shall the width to depth ratio of the lot exceed 1:4.							

1 - Areas of 15% or greater slope shall adhere to the minimum lot size and dimensions outlined under "Central Water Only".
2 - Applicants are encouraged to consider Traditional Neighborhood Design in areas where central sewer and water service is available.
3 - Additional lot area may be required for proper installation of an on-lot sewage disposal system in accordance with the PA DEP.
4 - Lot area for Two-Family is per unit but lot width is not on a per unit basis.

3. **Minimum Building Setbacks**

   a. The minimum setback for principal buildings is (20) feet from the right-of-way line.

   b. In order to promote design flexibility and innovation, minimum side and rear yard setbacks will be negotiated at the time of Sketch Plan review between the Commission and the Applicant. The exception is that principal buildings must be located to provide a minimum separation of twenty (20) feet between structures at the side yard and fifty (50) feet in the rear. For nonresidential principal buildings the minimum separation between structures shall not be less than fifty (50) feet.

4. While this Ordinance does not suggest certain mandatory lot requirements, and some provisions are negotiable hereunder, the Applicant shall be required to demonstrate to the satisfaction of the Commission that all lots established under the provisions of this Section are of appropriate size and shape in providing for the establishment of suitable private yard areas for all dwellings and adequate access for the management of any adjacent open space areas.

E. **Lot Access**

1. No dwelling units shall have direct driveway access to surrounding existing municipal or state roads. All driveway access shall be to an internal street system as designed for the project.

2. On a limited basis flag lots may be utilized where appropriate, with the prior approval of the Commission; however, no more than ten percent (10%) of the total number of lots may be designed as flag lots and each flag lot shall have a minimum area of 10,000 square feet.

F. **Sewage Disposal**

1. Sewage disposal shall be in accordance with Section 520 of this Ordinance.

2. Although the expedient is not encouraged an applicant can propose to locate sewage disposal facilities off the lot or lots being served, including within the open space area, if the local Sewage Enforcement Officer, municipality, PA DEP and the Commission agree to such proposal. In situations where this approach could be approved, the applicant would need to demonstrate that the long-term maintenance and management of such sewage disposal facilities could be dealt with adequately through deed restrictions, legal agreements between the system owner(s) and the open space owner(s), which would specify ownership, operation and maintenance responsibilities.

G. **Required Open Space**

1. The amount of required open space shall not be less than 25% of the original tract to be developed.

2. The Commission may negotiate incentives in the form of density or lot bonuses with applicants for Open Space Subdivisions. All such incentives shall be at the sole discretion of the Commission and shall be determined on a case-by-case basis, taking into consideration the conditions and the circumstances of the site proposed for development.

3. Designated open space areas shall not be further subdivided and shall be protected as open space through a conservation easement held by a qualified land trust and recorded in the Recorder of Deeds Office or through dedication to the municipality.

4. No portion of the designated restricted open space shall be calculated as contributing to the minimum required restricted open space area or to any open space utilized in the calculation of any density bonus where:

   a. Open space is within twenty-five (25) feet of any structure except those structures devoted to permanent open space uses;

   b. The open space is less than one-hundred (100) feet in the narrowest dimension at any point.

   c. Stormwater management facilities exist, except that the Commission may permit an applicant to include within the minimum required open space certain stormwater management areas. This will only be permitted where the applicant can be demonstrate to the satisfaction of the Commission that such facilities are designed to promote groundwater recharge, will be available, practical and appropriate for active or passive recreation use or scenic enjoyment, and will

otherwise conform to the purposes, standards, and criteria for open space set forth in this Section.

5. Areas suitable for active recreation shall be incorporated into the design where applicable and when required to conform to municipal mandatory dedication requirements.

H. **Location of Open Space**

1. The location of open space shall accord with all applicable county and municipal comprehensive and recreation and open space plans, and also with the recommendations contained in *Designing Open Space Subdivisions: A Practical Step-by-Step Approach*. Randall G. Arendt. Natural Lands Trust, Media, PA. 1994.

2. Open space areas shall include areas such as the 100-year floodplain, wetlands, steep slopes greater than 25%, woodlands, areas designated in the county Natural Areas Inventory, historic resources, prime agricultural soils, scenic views, mature trees and woodland tree masses, hedgerows, fence rows and other important cultural and natural features. Special consideration shall be given to the creation of greenway corridors that promote connectivity to important and sensitive natural and/or cultural resources on adjacent lands.

3. No more than fifty percent (50%) of the required open space shall be in the form of environmentally sensitive lands that would have otherwise not been developable. This may include but not be limited to floodways, floodplains, areas of steep slopes, endangered species habitat, geologic hazards, wetlands, etc.

4. Designated open space areas shall not include trash/garbage dumps, landfills, hazardous waste lands, or any other environmentally unstable areas that pose a public health or safety risk.

5. Open space shall be interconnected with open space on abutting parcels wherever possible, including, where appropriate, provision for pedestrian pathways, greenways and trails for general public use to create linked systems within the County.

6. Where open space development is planned to occur in phases, a proportionate amount of designated restricted open space and required parking shall be permanently recorded with each phase.

I. **Open Space Design.** Applicants should refer to Appendix H of this Ordinance for instructions on the Open Space Subdivision Four Step Design Process and to the following publications that are available for review at the Union County Planning Department for additional information:

Designing Open Space Subdivisions: A Practical Step-by-Step Approach. Randall G. Arendt. Natural Lands Trust, Media, PA. 1994.

Growing Greener: A Conservation Planning Workbook for Municipal Officials in Pennsylvania. Pennsylvania Department of Conservation and Natural Resources and the Natural Lands Trust, Media, PA. 1997.

Dealing with Change in the Connecticut River Valley: A Design Manual for Conservation and Development. Robert D. Yaro et al. Center for Rural Massachusetts, University of Massachusetts at Amherst, 1993.

J. **Permitted Use of Open Space**

1. Areas designated for open space purposes may be used for any of the following:

   a. Crop or pasture land, subject to the approval of a conservation plan by the Union County Conservation District;

   b. Woodland, meadow, wetland, wildlife habitat, game preserve, or similar conservation area;

   c. Public, common or private park or outdoor recreation area, with the limitation that not more than seventy-five percent (75%) of the open space can be developed into active recreation areas and facilities. At least twenty-five percent (25%) shall be set-aside as conservation lands;

   d. Parking for the exclusive use of individuals using recreational areas within the required open space, where deemed appropriate by the Commission; and

   e. Sewage, water supply and stormwater management facilities, provided the Commission, municipal governing body and other applicable state and local regulatory agencies are satisfied that adequate provision for the long-term management and maintenance of the facilities is guaranteed. Necessary easements and legal agreements shall also be in place.

2. Where deemed appropriate, the Commission may require open space areas to be provided with sufficient perimeter parking, access improvements, and with safe and convenient access by adjoining street frontage or other right-of-way or easement capable of accommodating pedestrian, bicycle, and maintenance vehicles.

K. **Ownership Open Space**

1. Except to provide for permitted open space uses, designated open space shall be restricted from further subdivision and land development by conservation easement, deed of dedication to a local municipality or other agreement in a form acceptable to the Commission duly recorded in the Union County Recorder of Deeds office. Subject to such permanent restrictions, restricted open space land in any open space development may be owned by an association of property owners, the county, the municipality, a land trust, or other qualified conservation organization approved by the Commission, or private ownership.

2. The county and/or municipality may, but shall not be required, to accept dedication in the form of fee simple ownership of restricted open space land, provided that:

   a. Such land is accessible to the public;
   b. There is no cost of acquisition other than any costs incidental to the transfer of ownership such as title insurance and recording fees;

   c. The county and/or municipality agree to and have access to maintain such lands; and

   d. Where the county and/or municipality accepts dedication of restricted open space land that contains improvements, the Commission may require the posting of financial security to ensure the structural integrity of said improvements as well as the functioning of said improvements in accordance with Article VII of this Ordinance.

3. Association of Property Owners - The restricted open space land and associated facilities may be held in common ownership by an association of property owners through the use of a Declaration and other documents approved by the Commission. Such documents shall be in conformance with the Uniform Planned Community Act of December 19, 1996, No. 180, (68 Pa. C.S.A. 5101) as amended. The Association shall be formed and operated under the minimum provisions contained in Appendix V of this Ordinance.

4. Condominiums - The restricted Open Space land and associated facilities may be held in common through the use of Condominium Declaration and other documents, approved by the Commission. Such documents shall be in conformance with the Uniform Condominium Act of July 2,1980, No. 82 (68 Pa. C.S.A. 3101) as amended. All common Open Space land shall be held as "common elements" or "limited common elements". To the degree applicable, condominium agreement(s) shall comply with the provisions of Subsection K.3 above, set forth for Associations of Property Owners. Condominium agreement(s) shall be filed with the plans. At the time of Preliminary Plan submission, the Applicant shall provide draft condominium agreement(s) with sufficient detail to demonstrate feasible compliance with this Section.

5. Dedication of Easements - The county and/or municipality may, but shall not be required to, accept easements for public use of any portion or portions of restricted open space land. The title of such land shall remain in common ownership by the developer or an association of property owners or condominium association provided that:

   a. Such land is accessible to the public;

   b. There is no cost of acquisition other than any costs incidental to the transfer of ownership such as title insurance and recording fees; and

   c. A satisfactory maintenance agreement is reached between the developer, association of property owners or condominium association and the county and/or municipality.

6. Transfer of Easements to a Private Conservation Organization - With the permission of the Commission, an Owner may transfer easements to a private or nonprofit organization recognized by the Commission, whose purpose it is to conserve open space and/or natural resources, provided that:

   a. The organization is acceptable to the Commission and is a qualified and bona fide conservation organization with perpetual existence;

   b. The conveyance contains appropriate provisions for proper reversion or transfer to a receiving authority, which itself has such a clause in the event that the organization becomes unwilling or unable to continue carrying out its functions; and

   c. A maintenance agreement acceptable to the Commission is entered into by the Developer and the organization.

7. Private Ownership - Restricted open space may be retained in ownership by the Applicant or developer or may be transferred to other private parties subject to compliance with all standards and criteria for restricted open space contained herein.

L. **Open Space Management and Maintenance Plan.** All open space subdivision plans shall be accompanied by a conceptual plan for the long-term management and maintenance of the open space that is to be created as part of the development.

1. The management plan shall include a description of the following:

   a. Manner in which the restricted open space will be owned and by whom it will be managed and maintained;

   b. Conservation, land management, and agricultural techniques and practices that will be used to maintain and manage the open space in accordance with conservation plan(s) approved by the Union County Conservation District where applicable;

   c. Professional and personnel resources and insurance that will be necessary in order to maintain and manage the property;

   d. The nature of public or private access that is planned for the open space; and

   e. The source of money that will be available for such management, preservation, and maintenance on a perpetual basis.

2. In order to allow for the changing needs inherent in the perpetual management of land, the Open Space Management Plan shall contain a provision to the effect that it may be changed by written application to the Commission, so long as the proposed change is feasible and consistent with the purposes of open space preservation set forth herein and so long as the change avoids the likelihood of the obligation of management and maintenance of the land falling upon the county/municipality without the consent of the governing bodies.

3. The conceptual management plan shall be transformed into a more detailed open space management plan and presented to the Commission and municipality for review and approval with the Preliminary Subdivision and Land Development Plan. The Commission may require the plan to be recorded with the Final Subdivision and Land Development Plan in the Union County Recorder of Deeds office.

4. In the event the organization, individual or any successor responsible for ownership, management and/or maintenance shall, at any time after establishment fail to manage and maintain the open space or any portion thereof in reasonable order and condition in accordance with the approved development plan, the county and municipality may assume responsibility for maintenance and enter upon said lands and take corrective action, the entire cost of which--including administrative costs and penalities-- shall be charged to the property owner, association of property owners, condominium association, conservation organization, individual owners, or other responsible entity.

M. **Performance Bond.** All landscape improvements, plantings, access points, and recreational facilities within designated open space areas shall be provided by the Applicant and/or developer as applicable. A performance bond or other security shall be in the same form and adhere to the same conditions otherwise required for proposed improvements in Article VII of this Ordinance.

N. **Maintenance Bond**. A maintenance bond or other security may be required by the Commission, in accordance with Article VII of this Ordinance, to guarantee the integrity of all improvements in open space areas.

606 TRADITIONAL NEIGHBORHOOD DEVELOPMENT (TND)

The purpose of this section is to promote the orderly and natural extension of existing boroughs and villages within the county and to encourage new development that fosters the traditional "small town" feel by integrating a mix of compatible and complimentary land uses and the establishment of pedestrian

oriented neighborhoods. Design elements not specifically regulated by this section or other parts of this Ordinance shall be negotiated with the Commission during the Sketch Plan and/or Preliminary Plan application.

A. The minimum tract size for TND's shall be 10 acres.

B. TND's shall be served by public sewage treatment and water supply facilities.

C. TND's shall be planned in accordance with municipal zoning regulations and the provisions of Article VII-A, Sections 701-A (b) and 706-A (d) of the Pennsylvania Municipalities Planning Code.

D. TND's shall be designed in accordance with generally accepted TND design standards. The following publications should be referenced for TND design guidelines:

1. *Crossroads, Hamlet, Village, Town*. 1999. Randall Arendt.

2. *New Urbanism: Comprehensive Report and Best Practices Guide*. 2001. Robert Steuteville, et al.

3. *PennSCAPES: Pennsylvania Strategies, Codes, and People Environments*. 2002-2003. Hamer Center for Community Design Assistance. The Pennsylvania State University.

E. Individual lot sizes for TND's shall be consistent with the surrounding neighborhood and shall be laid out to accommodate a variety of residential and non-residential building types and uses but shall not be less than 5,000 square feet in area. The Commission at their discretion may allow the minimum lot size to be equivalent to the average lot size within the adjacent existing developed area.

F. TND's shall be a natural extension of an existing village, borough, or developed area or shall be in the form of infill development.

G. TND Setbacks shall be as follows:

Front Yard:	15 feet
Side Yard:	6 feet
Rear Yard:	20 feet

H. Minimum Lot Frontage - Minimum lot frontage shall be consistent with the existing developed area but should be a minimum of 50 feet. The Commission at their discretion may allow the minimum lot frontage to be equivalent to the average of the frontage within the adjacent existing developed area.

I. The percentage of open space shall be compatible and consistent with the developed portions of the surrounding area and with municipal zoning provisions. Where not specified by municipal ordinance, all TND's shall have a minimum of 15% of the site as open space area permanently dedicated to parks, public commons, squares, plazas, and other open space.

J. **TND Streets**

1. Streets in a TND are to be planned using a grid pattern or loose network forming blocks.

2. Streets in a TND shall generally have 15 to 25 mile per hour design speeds.

3. The TND transportation network should seek to minimize vehicular speed and short cutting while making walking and cycling safer, easier and more pleasant.

4. Alleys should be used where possible in order to place garages and utilities at the rear of lots so the streetscape is maintained with house fronts and not dominated by garage doors and utility structures.

5. Street design shall be consistent with the Institute of Transportation Engineers (ITE) publication *Traditional Neighborhood Development: Street Design Guidelines*.

K. **Ownership of Open Space Areas.** Ownership of open space areas shall be in a form acceptable to the Commission and shall be in accordance with provisions of Section 604.K of this Ordinance.

L. **Open Space Management and Maintenance**. Ownership and maintenance shall be in form acceptable to the Commission and shall be in accordance with the provisions prescribed in Section 604.L of this Ordinance.

ARTICLE VII

Improvements

ARTICLE VII

IMPROVEMENTS

700 GENERAL

All applications for subdivision and land development that include improvements shall be made in accordance with this Section. This Section applies to all improvements, regardless of whether they are to be dedicated to a public entity or not.

701 COMPLETION OF IMPROVEMENTS

No application for Final Plan approval of a subdivision or land development shall be approved by the Commission, nor shall any plan be considered in compliance with this Ordinance, until all required improvements, including but not limited to, streets, sidewalks, curbs, gutters, street signs, street lights, street trees, fire hydrants, water mains, sanitary sewers, storm sewers and drainage facilities, survey monuments, lot line markers, and shade trees and landscaping have been installed in accordance with this Ordinance.

702 IMPROVEMENT GUARANTEE IN LIEU OF CONSTRUCTION

In lieu of the construction and completion of improvements required by this Ordinance prior to plan approval and recordation, the applicant or developer may deposit a financial security acceptable to the Commission and follow the procedures contained herein.

703 AMOUNT OF IMPROVEMENT GUARANTEE

A. The amount of the financial security to be posted for the completion of the required improvements shall be equal to 110% of the cost of completion estimated as of 90 days following the date scheduled for completion by the developer.

B. Annually the Commission may adjust the amount of the financial security by comparing the actual cost of the improvements that have been completed and the estimated cost for the completion of the remaining improvements as of the expiration of the 90th day after either the original date scheduled for completion or a rescheduled date of completion. Subsequent to such adjustment, the Commission may require the developer to post additional security in order to assure that the financial security equals said 110%. The developer in accordance with this Ordinance shall post any additional security.

704 BASIS OF IMPROVEMENT GUARANTEE AMOUNT

A. The amount of financial security required shall be based upon an estimate of the cost of completion of the required improvements, submitted by an applicant or developer and prepared by a professional engineer licensed as such in this Commonwealth and certified by the engineer to be a fair and reasonable estimate of such cost. The Commission, upon the recommendation of the Commission Engineer, may refuse to accept such estimate for good cause shown.

B. If water mains and sanitary sewer lines, or both, along with apparatus or facilities related thereto are to be installed under the jurisdiction and pursuant to the rules and regulations of a public utility, or a municipal authority separate and distinct from the municipality, financial security to assure proper completion and maintenance thereof shall be posted in accordance with the regulations of the controlling public utility or municipal authority and shall not be included within the financial security as otherwise required by this section. The applicant or developer shall provide evidence that financial security in an amount sufficient to secure the completion of all

sewer and/or water facilities to be dedicated to such public utility or municipal authority has been provided and accepted by such entity.

C. If the applicant or developer and the Commission are unable to agree upon an estimate, then the estimate shall be recalculated and recertified by another professional engineer licensed as such in this Commonwealth and chosen mutually by the Commission and the applicant or developer. The estimate certified by the third engineer shall be presumed fair and reasonable and shall be the final estimate. In the event that a third engineer is so chosen, fees for the services of said engineer shall be paid equally by the County and the applicant or developer.

705 ACCEPTABLE FORMS OF FINANCIAL SECURITY

The following are acceptable forms of financial security.

A. **Surety Performance Bond.** A security bond from a surety bonding company authorized to do business in the Commonwealth of Pennsylvania. The bond shall be payable to the County and shall be in a form satisfactory to the Commission.

B. **Escrow Account.** A deposit of cash with the County in escrow with a Federal or Commonwealth chartered financial institution. In the case of an escrow account, the applicant or developer shall file with the Commission an agreement between the financial institution and the applicant or developer guaranteeing the following:

1. That the funds of the escrow account shall be held in trust until released by the County and may not be used or pledged by the developer as security in any other matter during that period.

2. In the case of a failure on the part of the developer to complete the said improvements, the institution shall immediately make the funds available to the County for use in the completion of those improvements.

3. Withdrawals from the account to pay for completed improvements shall be pursuant to Section 810 of this Ordinance.

C. **Letter of Credit**. An irrevocable commercial letter of credit provided by the applicant and/or developer from a Federal or Commonwealth chartered financial institution. This letter shall be deposited with the County and shall certify the following:

1. The amount of credit.

2. In the case of failure on the part of the developer to complete the specified improvements within a time period specified in a written agreement between the County, the creditor shall pay to the County such funds as are necessary to finance the completion of those improvements, up to the limit of credit stated in the letter.

3. The letter of credit is irrevocable and may not be withdrawn, or reduced in amount, until released or partially reduced by the County.

D. **Certified Check.** A certified check payable to the County drawn on a Federal or Commonwealth chartered financial institution.

E. **Other Forms of Security**. Any other form of guarantee acceptable to the Commission.

706 IMPROVEMENTS NOT COMPLETED IN FIRST YEAR

If the party posting the financial security requires more than one (1) year from the date of posting of the financial security to complete the required improvements, the amount of financial security may be increased by an additional 10% for each one (1) year period beyond the first anniversary date from posting of financial security or to an amount not exceeding 110% of the cost of completing the required improvements as reestablished on or about the expiration of the preceding one-year period by using the above established estimating procedure in Section 704.

707 INDEMNIFICATION

A. The applicant and/or developer shall protect, defend, indemnify, and save harmless the County, its officers, employees, appointees, and agents thereof from all claims, suits, actions, and proceedings of every nature and description which may be or on account of any injuries or damages to persons, including wrongful death, to public or private property, because any materials or appliances used in the work, or by or on account of improper materials or workmanship, or for or on account of any accident or any other act, negligence or omission of said applicant and/or developer or his officers, employees, appointees, and agents thereof and the County shall not in any way be liable therefore, during the period of the work progress and for a period of eighteen (18) months following the acceptance of work.

B. [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

708 IMPROVEMENT CONSTRUCTION

During construction of improvements the applicant and/or developer shall be responsible for the following:

A. Constructing all improvements in strict accordance with the approved subdivision and land development plan and this Ordinance.

B. Implementing all necessary plans to control, mitigate, and eliminate any forms of pollution, disturbance, or destruction resulting from noise, odor, stormwater, and/or excessive loads or repetitions of loads that may occur during construction.

C. **Work Zone Traffic Control**. The applicant and/or developer shall furnish the necessary guards, watchmen, warning lights and similar items necessary to maintain state highway and other street traffic in accordance with Penn DOT Publication 203 requirements. When traffic cannot be detoured, a minimum of one half (1/2) the roadway shall be open at all times with traffic control. In limited and unique circumstances, with the approval of the Commission, local municipality and/or Penn DOT limited closure might be warranted.

709 IMPROVEMENT INSPECTION DURING CONSTRUCTION

A. The Commission and the applicant or developer shall mutually agree upon a schedule of inspections by the Commission Engineer and/or other necessary consultants during construction, which shall be made part of a Memorandum of Understanding/Developer's Agreement executed between the County and the applicant and/or developer. At a minimum the Commission will require inspections at critical stages of construction determined by the Commission and Commission Engineer and/or other consultants. See Appendix G for example Memorandum of Understanding/Developer's Agreement.

B. The applicant or developer shall notify the Commission of the construction schedule at least forty-eight (48) hours prior to commencement of the work stages identified in 709.(A) above.

C. The applicant and/or developer shall correct any portion of the work that does not comply with the approved plan and this Ordinance. No work may proceed on any subsequent phase of the construction until necessary corrections have been made.

D. Site improvements shall not advance to subsequent stages of construction until authorized to do so after the satisfactory inspection of the previous stage.

710 PARTIAL RELEASE OF IMPROVEMENT GUARANTEE

As the work of installing the required improvements proceeds, the party posting the financial security may request the Commission to release or authorize the release, from time to time, such portions of the financial security as are necessary for payment to the contractor or contractors performing the work. Any such requests shall be made in writing addressed to the Commission, and the Commission shall have 45 days from receipt of such request to allow the Commission Engineer to certify, in writing, that a portion of the work upon the improvements has been completed in accordance with the approved plan. Upon certification the Commission shall authorize release by the bonding company or lending institution of an amount estimated by the Commission Engineer to be the value of the improvements completed. If the Commission fails to act within the 45-day period, the Commission shall be deemed to have approved the release of funds as requested. The Commission may, prior to final release at the time of completion and certification by the Commission Engineer, require retention of 10% of the estimated cost of aforesaid improvements.

711 AS BUILT PLAN

After Final Plan approval and upon completion of all required improvements, the applicant or developer shall submit, as requested by the Commission, an As Built Plan showing the location, dimension, and elevation of all improvements. As-Built Plans generally will be required when constructed improvements and developed conditions deviate from the originally approved plan. The As Built Plan shall specify all deviations from the previously approved drawings. Five (5) copies of the As Built Plan shall be submitted to the Commission. Depending on the severity of the deviations from the approved plan shown by the As Built Plan a full subdivision and land development plan revision may need to be submitted and approved.

712 FINAL IMPROVEMENT INSPECTION AND RELEASE FROM GUARANTEE

A. **Notice of Completion**. When the developer has completed all of the agreed-upon improvements, the developer shall notify the Commission and the municipal governing body in writing, by certified or registered mail, of the completion of the improvements, and shall send a copy also to the Commission Engineer. The Commission shall, within ten (10) days after receipt of such notice, direct the Commission Engineer to inspect all of the improvements. The Commission Engineer shall file a written report with the Commission and the municipal governing body, and the Commission or Commission Engineer shall promptly mail a copy of it to the developer by certified or registered mail. The report shall be mailed within thirty (30) days after receipt by the Commission Engineer of the authorization from the Commission; the report shall be detailed and shall indicate approval or rejection of the improvements, either in whole or in part. If the Commission Engineer does not approve the improvements, or any portion of them, the report shall contain a statement of reasons for such non-approval or rejection.

B. The Commission shall notify the developer within fifteen (15) days of receipt of the engineer's report, in writing by certified or registered mail, of the decision to accept or not accept the improvements.

C. If the Commission fails to comply with the time limitation provisions contained herein, all improvements will be deemed to have been approved, and the developer shall be released from all liability, pursuant to its performance guaranty bond or other security agreement.

D. If any portion of the improvements shall not be approved or shall be rejected by the Commission or the municipal governing body, the developer shall proceed to complete the same and, upon completion, the same procedure of notification as outlined in this Section shall be followed.

E. Nothing herein, however, shall be construed to limit the developer's right to contest or question by legal proceedings or otherwise, any determination of the Commission, municipality, or the Commission or municipal engineer.

713 REMEDIES TO EFFECT COMPLETION OF IMPROVEMENTS

In the event that any improvements that may be required have not been installed as provided in this Ordinance, or in accord with the approved Final Plan, the County is hereby granted the power to enforce any corporate bond, or other security by appropriate legal and equitable remedies. If the proceeds of the improvements bond or other security are insufficient to pay the cost of installing or making repairs or corrections to all the improvements covered by said security, the County and/or municipality may, at its option, install part of such improvements in all or part of the subdivision or land development and may institute appropriate legal proceedings, whether resulting from the security or from any legal or equitable action brought against the developer, or both. All monies drawn against the improvements bond or other security shall be used solely for the installation of the improvements covered by such security, and not for any other purpose.

714 IMPROVEMENT MAINTENANCE GUARANTEE

Where a municipality has accepted dedication of certain improvements, it may, at its discretion, require the applicant or developer to post financial security to secure the structural integrity of the improvements and the functioning of the improvements in accordance with the design and specifications as shown on the final plan for a term not to exceed 18 months from the date of acceptance of dedication. The financial security shall be of the same type as otherwise required in this Section and the amount of the financial security shall not exceed 15% of the actual cost of installation of said improvements.

715 DEDICATION AND ACCEPTANCE OF IMPROVEMENTS

A municipality accepting dedication of improvements for public ownership shall do so by the governing body adopting an ordinance, resolution, deed or other formal document of acceptance. A municipality shall not be responsible for accepting dedication, and improvements shall be deemed private, until the following items are satisfied:

A. The Commission and/or Municipal Engineer conducts a final inspection certifying that all improvements have been satisfactorily installed according to the approved Final Plan.

B. All inspection fees are paid.

C. An appropriate improvement maintenance guarantee has been posted.

D. A deed of dedication is provided.

716 IMPROVEMENTS NOT DEDICATED OR NOT ACCEPTED FOR DEDICATION

All improvements constructed as required by this Ordinance that **will not** be publicly dedicated or accepted for dedication shall also meet the following requirements:

A. Ownership and Maintenance Responsibility/Entity**.** A viable entity responsible for ownership and maintenance of all non-dedicated improvements shall be established by the developer and approved by the Commission and the municipality. Ownership and maintenance responsibilities may be assigned to either the developer or among the property owners or an association of property owners within the subdivision or land development through the use of a Declaration and other documents approved by the Commission. Such documents shall be in conformance with the Uniform Planned Community Act of December 19, 1996, No. 180 (68 Pa. C.S.A. 5101) as amended. The Association shall be formed and operated under the minimum provisions contained in Appendix V of this Ordinance.

B. **Improvements Benefiting Multiple Lots**. For all non-dedicated improvements that will not be owned and maintained by the developer and are situated on an individual lot or a series of contiguous lots but serve multiple lots, units or the entire subdivision or land development (e.g. stormwater management ponds), the responsibility for ownership and maintenance of such improvements shall be borne by all lot owners benefiting or served and not solely the lot owner on whose lot the improvements are situated.

C. **Ownership and Maintenance Agreement**. A private agreement suitable for recording in the Union County Recorder of Deeds Office shall be prepared, properly executed, and recorded with the final subdivision or land development plan, shall run with the land, and shall clearly identify the individual or entity responsible for the ownership and maintenance of non-dedicated improvements. The agreement shall be reviewed and approved by the Commission, Commission Engineer and the municipality and, at a minimum, shall stipulate the following:

1. That the owners, an association of property owners, successors and assigns shall keep all improvements in a safe and attractive manner, and the owners shall convey to the municipality easements and/or rights-of-way to assure access for periodic inspections by the municipality, and maintenance if required.

2. That if the owners, association of property owners, successors and assigns, fail to maintain the improvements following due notice by the municipality to correct problems, the municipality may perform the necessary work or corrective action. The owners or association of property owners shall reimburse the municipality for these services and any administrative costs. The municipality shall have the authority to assert a judgment lien against the said owners or association of property owners for failure to make the reimbursement(s).

D. **Deed Reference.** All deeds created for lots that contain non-dedicated improvements shall make clear and specific reference as to the following:

1. Description of all improvements not dedicated;

2. The individual(s) or entity responsible for ownership and maintenance of the improvements in accordance with Sections 716.A, 716.B, and 716.C of this Ordinance;

3. The Ownership and Maintenance Agreement as required by Section 716.C of this Ordinance.

4. Terms and conditions of the required maintenance;

5. Provision that no improvements shall be eliminated or altered without the written approval of the Commission and the municipality.

6. Provision that in the event improvements are altered, eliminated, or improperly maintained the municipality may prescribe necessary corrective measures and a reasonable time period to perform such work, and that if such action is not taken in the time period specified, the municipality may cause the work to be performed and invoice the ownership and maintenance entity, including the assertion of a judgment lien against it.

7. Provision that all improvements not offered for dedication may be offered in the future if the improvements meet the minimum standards of this and/or applicable municipal ordinances in effect at the time the offer of dedication is made. If the improvements do not conform to the minimum standards in effect, the municipality shall have no obligation to accept the improvements until the improvements are improved to meet the standards, all costs of which shall be borne by the owner, association of property owners, or their successors and assigns.

ARTICLE VIII

Administration & Enforcement

ARTICLE VIII – Administration & Enforcement

ARTICLE VIII

ADMINISTRATION AND ENFORCEMENT

800 GENERAL

This Section outlines the procedures for administration and enforcement of this Ordinance as well as procedures for challenges and appeals of decisions rendered under this Ordinance.

801 FEES

A. The Union County Board of Commissioners shall establish by Resolution the required subdivision and land development plan application review fees to cover costs incurred by the County for reviewing and processing applications submitted and determining compliance under this Ordinance.

B. Review fees shall include but not be limited to covering the expenses and costs of the following:

1. County administrative and technical staff employees involved in the review;

2. Charges by the County's professional consultants, including but not limited to expert witnesses, attorneys, engineers, planners or other required specialists for undertaking reviews, reports, field trips, and recommendations, including attendance at necessary meetings and public hearings, for the preparation of any legal or other documents required by the proposed Plan, and also for the inspection of improvements installed by the Applicant;

3. Fees charged to the County to cover the cost of any review, report or recommendation or application submitted to other appropriate agencies shall also be paid by the applicant; and

4. Advertising, notices or other expenses incurred in the processing of the proposed Plan.

C. An initial application fee is due at the time of plan submission and a plan will not be accepted without the applicable review fee. A copy of the most recent Fee Resolution is available from the Commission.

D. Additional review fees may be required to cover the costs of additional services in excess of the initial fees collected at the time of plan application and may include, but not be limited to the following:

1. Cost of preparation and advertisement of necessary legal or other public notices or ads;

2. Cost of required stenographic services;

3. Cost of retaining professional advisors and consultants; and

4. Cost of Commission Engineer and/or other special consultants to review plans and to monitor and inspect improvements both during and after construction.

E. All fees shall be payable to the County of Union. A copy of the most recent Fee Resolution is available from the Commission.

F. Applicable review fees shall be submitted at the time of plan application, and engineering and/or consultant review or inspection fees shall be submitted immediately upon receiving an invoice for such fees.

G. Fees shall be reasonable, and shall include charges for staff, Commission Engineer or other consultants necessary to review plans and to monitor construction and inspect improvements.

H. An applicant may dispute the amount of review and inspection fees in accordance with the procedures for fee dispute resolution contained in Sections 503 (1) and 510 (g) of the Pennsylvania Municipalities Planning Code, Act 247 of 1968, P.L. 805, (53 P.S. 10101, et seq.) as from time to time reenacted and amended.

802 PAST DUE OR UNPAID FEES

A. The Commission shall not accept new applications for subdivision or land development proposals from applicants with past due or unpaid fees until all such payments in arrears are made in full including any accrued interest.

B. The Commission shall not approve applications for subdivision or land development submitted by applicants with past due or unpaid fees until all such payments in arrears are made in full including any accrued interest.

803 MODIFICATIONS

A. An applicant may request the grant of a modification by the Commission to any mandatory provision(s) of this Ordinance.

B. All modification requests shall be in writing on a Modification Request Form and shall accompany the application for subdivision or land development. Modification Request Form is in Appendix K.

C. All modification requests shall include the following:

1. Provision(s) of the Ordinance involved

2. The grounds and facts of unreasonableness or hardship on which the request is based, justification for the modification, and/or evidence of equal or better results.

3. The minimum modification necessary.

D. The Commission shall grant modifications if the applicant demonstrates that all of the following criteria which apply are met:

1. That literal compliance with the mandatory provision(s) of the Ordinance is unreasonable or causes unique and undue hardship as it applies to the particular land being developed or subdivided.

2. The need for the modification is not a self-created hardship.

3. The modification request is not based upon an economic justification.

4. The granting of the modification will not detract from the character of the surrounding area and will not be contrary to the public interest.

5. [Deleted by Ordinance No. 2013-1 amending Ordinance 2003-3]

6. The modification is the minimum necessary.

7. The modification can be demonstrated to provide equal or better results.

E. In granting modifications the Commission may impose such conditions as will, in its judgment, encourage innovative design and/or secure substantially the objectives of the standards and requirements of this Ordinance.

F. The applicant shall note all modifications granted on the plan.

G. Commission staff shall not have the authority to grant modifications to this Ordinance.

804 RIGHT TO CHALLENGE AND APPEAL

A. **Appeal of Staff Decisions**. Any applicant or person aggrieved by a finding, decision, or recommendation by staff with respect to approval or disapproval of a plan may appeal the action to the Commission at its next scheduled meeting if a Staff Action Appeal Form is filed fifteen (15) days prior to the meeting date. Refer to Appendix D for a copy of the Appeal Form.

B. **Appeal of Commission Decisions**. Any applicant or person aggrieved by a finding, decision, or recommendation of the Commission with respect to the approval or disapproval of a plan or modification request may appeal to the Union County Court of Common Pleas as provided for in the Pennsylvania Municipalities Planning Code, Act 247 of 1968, P.L. 805, (53 P.S. 11001-A, et seq.) as from time to time reenacted and amended.

C. **Mediation.** As an alternative to an ad judicatory appeal of a Commission decision, an applicant may request the use of mediation as an aid in resolving the dispute. The Commission is not obligated in any manner to approve the mediation option, and the merits of such requests shall be evaluated on a case-by-case basis. Participation in mediation shall be wholly voluntary by the parties, and shall not be interpreted as expanding or limiting police powers or as modifying any principles of substantive law. Mediation, when approved by the Commission, shall be conducted as follows:

1. The parties must develop and agree to terms and conditions of funding mediation.

2. The selected mediator shall be agreed upon by both parties and at a minimum shall have a working knowledge of subdivision and land development procedures and demonstrated skills in mediation.

3. The parties shall agree on time limits for completing mediation.

4. The parties may negotiate and agree upon suspending time limits otherwise authorized by this Ordinance and the Pennsylvania Municipalities Planning Code, Act 247 of 1968, P.L. 805, (53 P.S. 10101, et seq.) as from time to time reenacted and amended.

5. All parties with an interest in the mediation shall be identified and afforded an opportunity to participate.

6. Subject to legal constraints, the parties shall determine whether some or all of the mediation sessions shall be open or closed to the public.

7. Parties shall assure that mediated solutions are in writing and signed by the parties, and become subject to review and approval by the Commission.

8. Parties agree that offers or statements made in the mediation sessions, excluding the final written mediated agreement, shall be admissible as evidence in any subsequent judicial or administrative proceeding.

805 RECORDS

The Commission shall keep for the public record a written record of all activity related to plans upon which action is taken, including all requests for and action taken on modifications.

806 RIGHT OF ENTRY

Upon presentation of proper credentials, duly authorized representatives of the County and/or Commission may enter at reasonable times upon any property under jurisdiction of this Ordinance to inspect the condition of the properties, facilities, and improvements in regard to any aspect regulated by this Ordinance.

807 ORDINANCE VIOLATIONS

A. **Discovery of Violation.** Upon discovery of an alleged violation of this Ordinance, the Commission shall notify the municipality in which the affected property is located of the unlawful action and shall request that the municipality refuse to issue any permit or grant any approval necessary to further improve or develop the property.

B. **Written Notice.** The Commission shall notify an applicant, developer, and/or property owner of violations of this Ordinance in writing, by certified mail "return receipt requested" or by hand carried delivery, immediately upon being made aware of such violations. Notices of violation issued by the Commission shall state the facts pertaining to the violation, cite those provisions of the Ordinance in violation, specify a time within which the violation shall be corrected in order to prevent further enforcement action, and indicate the applicants' right to an appeal.

C. **Cease and Desist**. Any person, partnership, or corporation notified of a violation of this Ordinance shall immediately cease and desist such activity until the matter is resolved to the Commission's satisfaction.

808 PREVIOIUS VIOLATIONS

A. Where an application is proposed for a tract of land, portions of which have previously been subdivided or developed in violation of this Ordinance or the Union County Land Subdivision and Development Ordinance of 1969 as amended, such application shall include a description and plan detailing all previous lots sold or transferred without proper approval.

B. The Commission reserves the right to require that all lands subdivided or developed without proper approval of the Commission meet the minimum standards of this Ordinance.

C. The Commission further reserves the right to review, approve, or disapprove all subdivisions and land developments already recorded in the Union County Recorder of Deeds Office if such plans do not meet the minimum requirements of this Ordinance, were recorded without prior review or approval of the Commission, and/or do not meet applicable provisions of the Pennsylvania Municipalities Planning Code, Act 247 of 1968, P.L. 805, (53 P.S. 10101, et seq.) as from time to time reenacted and amended.

809 PREVENTIVE REMEDIES

A. **Authority to Initiate Court Action.** In addition to other remedies the County may institute and maintain appropriate actions in law or equity to restrain, correct or abate violations, to prevent unlawful construction, to recover damages, and to prevent illegal occupancy of a building, structure or premise. The description by metes and bounds in the instrument of transfer, or other documents used in the process of selling or transferring, shall not exempt the seller or transferor from such penalties or from the remedies herein provided.

B. As provided by Section 515.1(b) of the Pennsylvania Municipalities Planning Code, Act 247 of 1968, P.L. 805, (53 P.S. 10515.1 (b), et seq.) as from time to time reenacted and amended, the Commission may refuse to issue any permit or grant any approval necessary to further improve or develop any real property which has been developed or which has resulted from a subdivision of real property in violation of this Ordinance or the Union County Land Development and Subdivision Ordinance of 1969 as amended. This authority to deny such permit or approval shall apply to any of the following applicants:

1. The owner of record at the time of such violation.

2. The vendee or lessee of the owner of record at the time of such violation, without regard as to whether such vendee or lessee had actual or constructive knowledge of the violation.

3. The current owner of record who acquired the property subsequent to the time of violation, without regard as to whether such current owner had actual or constructive knowledge of the violation.

4. The vendee or lessee of the current owner of record who acquired the property subsequent to the time of violation, without regard as to whether such vendee or lessee had actual or constructive knowledge of the violation.

C. As an additional condition for issuance of a permit or the granting of approval to any owner, current owner, vendee, or lessee for the development of any such real property, the Commission may require compliance with the conditions that would have applied to the property at the time the applicant acquired an interest in the real property.

810 INJUNCTIONS

The Commission and staff shall have the power and authority to seek legal redress by an action for injunction brought before the appropriate court of equity, jurisdiction to enjoin such transfer, sale or agreement to transfer or sell, and/or to enjoin any type of construction or improvement by an applicant or landowner where a violation of this Ordinance has occurred, and to enjoin the Register and Recorder of Deeds from the recordation of any unapproved subdivision or land development plan or deed of sale made in violation of this Ordinance.

811 ENFORCEMENT REMEDIES

A. Any person, partnership, or corporation who or which has violated any provision of this Ordinance, shall, upon being found liable therefore in a civil enforcement proceeding commenced by Union County, pay a judgment of not more than $500.00 plus all court costs, including reasonable attorney fees incurred by the County as a result thereof.

B. No judgment shall commence or be imposed, levied, or payable until the date of determination by a District Justice.

C. If the defendant neither pays nor appeals the decision in a timely manner, Union County, by or through its agent the Union County Planning Commission, may enforce the judgment pursuant to the applicable rules of civil procedure.

D. Each day that a violation continues shall constitute a separate violation, unless the District Justice or the Judge of the Union County Court of Common Pleas, determining that there has been a violation, further determines that there was a good faith basis for the person, partnership or corporation violating the Ordinance to have believed that there was no such violation. In that event, there shall be deemed to have been only one such violation until the fifth day following the date of determination of a violation by the District Justice or the Judge of the Union County Court of Common Pleas, and thereafter each day that a violation continues shall constitute a separate violation.

E. All judgments, costs and reasonable attorney fees collected for the violation of this Ordinance shall be paid to the County of Union.

F. The Union County Court of Common Pleas, upon petition, may grant an order of stay, upon cause shown, tolling the per diem judgment pending final adjudication of the violation and judgment.

G. Nothing contained in this Section shall be construed or interpreted to grant to any person or entity other than Union County and its agent, the Union County Planning Commission, the right to commence any action for enforcement pursuant to this Section.

APPENDICES

APPENDICES

APPENDIX A

Plan Checklists

Appendix A-1: Sketch Plan Checklist

Appendix A-2: Preliminary Plan Checklist

Appendix A-3: Final Plan Checklist

Appendix A-4: Minor Subdivision Plan Checklist

Appendix A-5: Lot Addition/Consolidation Plan Checklist

SKETCH PLAN CHECKLIST

Ordinance Requirement	Section	Page	Yes	No	N/A
Administrative Items					
One (1) completed UCPC Application Form					
Five (5) copies of Sketch Plan	401	44			
Plan Details					
Location sketch to facilitate property location	401.A	44			
Existing tract boundaries accurately labeled with names of adjacent property owners	401.B	44			
Title block w/ landowner, municipality, date, individual preparing the plan, scale, etc.	401.C	44			
North arrow	401.D	44			
Significant topographic and natural features (water bodies, floodplains, streets, etc.)	401.E	44			
General street, parking, building and lot layout including acreage of area developed	401.F	44			
Proposed land use; if multiple uses proposed show general location of each use	401.G	44			
Statement explaining the methods of water supply and sewage disposal to be used	401.H	44			

PRELIMINARY PLAN CHECKLIST

Ordinance Requirement	Section	Page	Yes	No	N/A
Administrative Items					
One (1) completed UCPC Application Form	306.B(3)	34			
Twelve (12) copies of Preliminary Plan	306.B(1)	34			
Three (3) copies of all reports, deed covenants, notifications, studies, etc.	306.B(2)	34			
Filing Fee in the form of a check or money order payable to Union County Treasurer	306.B(4)	34			
Request for Modifications of this Ordinance form(s) and supporting documentation	403.A(13)	46			
Plan Details - Project Description and Location					
Brief narrative describing the proposed project	403.A(1)	45			
Title block with project name, municipality, plan date, revision dates, and owner name and address	403.A(2)	45			
Name, address, phone # of firm/plan preparer along with assigned project #, signature, registration #, and seal of professional preparing the plan	403.A(3)	45			
North arrow	403.A(4)	45			
Graphic and written scale	403.A(5)	45			
Site location map of a sufficient size and scale to clearly show location of property	403.A(6)	45			
Deed book and page and parcel ID number of the tract to be subdivided or developed	403.A(7)	45			
Total acreage of the entire existing tract	403.A(8)	45			
Tract boundary w/bearings and distances showing relationship of proposal to the entire tract and all prior conveyances from parent tract since 1969	403.A(9)	45			
Owners names, deed book and page and parcel ID number of adjacent unplotted land and the names, deed book and page of all abutting recorded subdivisions	403.A(10)	46			
Table of zoning district requirements including lot area and bulk, density, building and impervious coverage, yards and zoning for adjacent lands if different	403.A(11)	46			
Plan Details - Existing Site Characteristics					
Topographic contours (see Ordinance section for details)	403.B(1)	46			
Steep slopes showing areas 16 to 25 % and those areas greater than 25%	403.B(2)	46			
Soil types and boundaries	403.B(3)	46			
Prominent natural and topographic features (See Ordinance section for details)	403.B(4)	46			
General vegetative cover of the site including a brief description	403.B(5)	46			
Note indicating whether site is or is not underlain by carbonate geology	403.B(6)	46			
Location of quarry sites, solid waste disposal areas, wildcat dumps, EPA Superfund sites, and other potentially hazardous conditions on the site or adjacent tracts	403.B(7)	46			
Approximate location for significant historic and cultural features on or w/in 200' of site (see Ordinance section for details)	403.B(8)	46			
Existing recorded streets, roads, alleys or other means of access and easements on or adjacent to the tract; including name or number, ownership, width, condition of pavement and grades, and purpose for which easement was created	403.B(9)	46			
Location, ownership and width of rights-of-ways and easements for features listed in this section (see Ordinance section for details)	403.B(10)	47			
Location and material of all existing permanent monuments and lot line markers	403.B(11)	47			
Plan Details - Proposed Site Conditions					
Site data including total acreage, # of lots, density, # dwelling units, existing and proposed land use, impervious area, tract residual, parking required, parking provided, open space and common areas, etc.	403.C(1)	47			
Required yards and building setback lines w/distances	403.C(2)	47			
Lot layout w/lot lines, approximate dimensions, lot square footage and acreage	403.C(3)	47			
Block and lot numbers in a consecutive and clockwise or left to right order	403.C(4)	47			
Exact location, name, width, and grade of proposed streets, alleys, driveways or other access	403.C(5)	47			
Location and width of rights-of-way and cartways	403.C(6)	47			
Delineation of clear sight triangles and sight distances	403.C(7)	47			
Design information for horizontal curves (degree of curvature, radius, arc length, point of tangents)	403.C(8)	47			
Length of tangents between reverse curves	403.C(9)	47			
Curb radii at intersections and intersection equalities between streets	403.C(10)	47			
Curb and gutter location	403.C(11)	47			
Location of sidewalks and/or trails with widths, grades, and ramps for ADA requirements	403.C(12)	47			

PRELIMINARY PLAN CHECKLIST

Ordinance Requirement	Section	Page	Yes	No	N/A
Plan Details - Proposed Site Conditions (Continued)					
Location of streetlights, street signs, and traffic control devices, signs and/or pavement markings	403.C(13)	47			
Location and type of vegetation and landscaping to be planted between curb and shoulder of ROW	403.C(14)	47			
Location and species of street trees, shade strees, and landscaping to be planted	403.C(15)	47			
Location of light fixtures, types, and sizes	403.C(16)	47			
Proposed public buildings and areas, playgrounds, open space, etc.	403.C(17)	48			
Identification of buildings and historic features proposed to be demolished	403.C(18)	48			
Location, width, and use of utility, drainage and all other proposed easements	403.C(19)	48			
Location and pipe diameter of storm water, sanitary sewer, and water mains and laterals.	403.C(20)	48			
Location of fire hydrants and other operational water main infrastructure	403.C(21)	48			
Location of all proposed stormwater management and erosion control facilities	403.C(22)	48			
Deep probe and soil percolation test sites and proposed absorption field areas if on-lot sewage disposal facilities are proposed, including isolation distances	403.C(23)	48			
Other Required Information and Reports to be Submitted					
Copies of private deed restrictions, covenants, grants of easements, homeowner and business association agreements or other restrictions	403.D(1)	48			
Preliminary design of proposed bridges and culverts	403.D(2)	48			
Typical street cross section for each street-should include entire ROW and show materials for base, surfacing, and method of construction	403.D(3)	48			
Street centerline profile for proposed streets showing finished grade (See Ordinance for details)	403.D(4)	48			
Grading plan showing cross sections for cut fill areas and for general site development activities including parking areas, buildings, stormwater facilities, etc.	403.D(5)	48			
Typical curb and gutter design, materials and method of construction	403.D(6)	48			
Typical sidewalk or trail design, materials and method of construction	403.D(7)	48			
Sewage Facilities Plan and/or Engineering Feasibility Study and required documentation	403.D(8)	48			
Water Facilities Plan and required documentation	403.D(9)	48			
Appropriate letters from utility service providers	403.D(10)	48			
Stormwater Management and Drainage Plan and narrative	403.D(11)	48			
Sketch of proposed streets, sanitary and storm sewer and water lines for the remainder of the tract when the preliminary plan only covers a portion of the tract	403.D(12)	49			
Estimated cost of all improvements including an itemized list of components (unit cost, quantity, etc.)	403.D(13)	49			
Schedule of phased installation of improvements and anticipated dates of final plan filing	403.D(14)	49			
Landscaping Plan including names, sizes, quantities and location of plant materials	403.D(15)	49			
Erosion and Sedimentation Pollution Control Plan and approval letter from Union Co. Cons. District	403.D(16)	49			
Documentation that all floodplain and floodway regulations are met	403.D(17)	49			
Copies of required regulatory permits for proposed alterations/obstructions to water resources	403.D(18)	49			
Community Impact Analysis, Natural Features Analysis and Traffic Engineering Study	403.D(19)	49			
Occupancy permit or letter from utility owner regarding minimum setback distance compliance	403.D(20)	49			
Letter of municipal zoning compliance	403.D(21)	49			
Letter of approval from Union County Communications Center for road and subdivision names	403.D(22)	49			
Letter from any agricultural or conservation easement holders stating conditions on property	403.D(23)	49			
Penn DOT Highway Occupancy Permit or appropriate municipal driveway permit	403.D(24)	49			
Appropriate remediation reports and/or testing for contaminated sites (See Ordinance)	403.D(26)	50			
Plan Certifications and Notifications					
Certificate, signature and seal of the professional land surveyor certifying survey accuracy	403.E(1)	50			
Certificate, signature and seal of the landscape architect, surveyor, or professional engineer that all other details on and accompanying the plan are correct.	403.E(2)	50			
Certification of Ownership in the form of a notarized statement by the owner(s)	403.E(3)	50			
Preliminary Plan Certification of Notification block for Municipal Governing Body	403.E(4)	50			
Preliminary Plan Approval Certification Block for Union County Planning Commission	403.E(5)	50			
Notation on the plan of any modifications granted by the Commission pursuant to the Ordinance	403.E(6)	50			
Notation on the plan of any variances granted in accordance with the applicable zoning ordinance	403.E(7)	50			

FINAL PLAN CHECKLIST

Ordinance Requirement	Section	Page	Yes	No	N/A
Administrative Items					
One (1) completed UCPC Application Form	307.B(3)	37			
Twelve (12) copies of Final Plan	307.B(1)	37			
Three (3) copies of all reports, deed covenants, notifications, studies, etc.	307.B(2)	37			
Filing Fee in the form of a check or money order payable to Union County Treasurer	307.B(4)	37			
Request for Modifications of this Ordinance form(s) and supporting documentation	404.A(13)	51			
Plan Details - Project Description and Location					
Brief narrative describing the proposed project	404.A(1)	50			
Title block with project name, municipality, plan date, revision dates, and owner name and address	404.A(2)	50			
Name, address, phone # of firm/plan preparer along with assigned project #, signature, registration #, and seal of professional preparing the plan	404.A(3)	51			
North arrow	404.A(4)	51			
Graphic and written scale	404.A(5)	51			
Site location map of a sufficient size and scale to clearly show location of property	404.A(6)	51			
Deed book and page and parcel ID number of the tract to be subdivided or developed	404.A(7)	51			
Total acreage of the entire existing tract	404.A(8)	51			
Tract boundary w/bearings and distances showing relationship of proposal to the entire tract and all prior conveyances from parent tract since 1969	404.A(9)	51			
Owners names, deed book and page and parcel ID number of adjacent unplotted land and the names, deed book and page of all abutting recorded subdivisions	404.A(10)	51			
Table of zoning district requirements including lot area and bulk, density, building and impervious coverage, yards and zoning for adjacent lands if different	404.A(11)	51			
Plan Details - Existing Site Characteristics					
Topographic contours (see Ordinance section for details)	404.B(1)	51			
Steep slopes showing areas 16 to 25 % and those areas greater than 25%	404.B(2)	51			
Soil types and boundaries	404.B(3)	51			
Prominent natural and topographic features (See Ordinance section for details)	404.B(4)	51			
General vegetative cover of the site including a brief description	404.B(5)	52			
Note indicating whether site is or is not underlain by carbonate geology	404.B(6)	52			
Location of quarry sites, solid waste disposal areas, wildcat dumps, EPA Superfund sites, and other potentially hazardous conditions on the site or adjacent tracts	404.B(7)	52			
Approximate location for significant historic and cultural features on or w/in 200' of site (see Ordinance section for details)	404.B(8)	52			
Existing recorded streets, roads, alleys or other means of access and easements on or adjacent to the tract; including name or number, ownership, width, condition of pavement and grades, and purpose for which easement was created	404.B(9)	52			
Location, ownership and width of rights-of-ways and easements for features listed in this section (see Ordinance section for details)	404.B(10)	52			
Location and material of all existing permanent monuments and lot line markers	404.B(11)	52			
Plan Details - Proposed Site Conditions					
Site data including total acreage, # of lots, density, # dwelling units, existing and proposed land use, impervious area, tract residual, parking required, parking provided, open space and common areas, etc.	404.C(1)	52			
Required yards and building setback lines w/distances	404.C(2)	52			
Lot layout w/lot lines, approximate dimensions, lot square footage and acreage	404.C(3)	52			
Block and lot numbers in a consecutive and clockwise or left to right order	404.C(4)	52			
Exact location, name, width, and grade of proposed streets, alleys, driveways or other access	404.C(5)	52			
Location and width of rights-of-way and cartways	404.C(6)	53			
Delineation of clear sight triangles and sight distances	404.C(7)	53			
Design information for horizontal curves (degree of curvature, radius, arc length, point of tangents)	404.C(8)	53			
Length of tangents between reverse curves	404.C(9)	53			
Curb radii at intersections and intersection equalities between streets	404.C(10)	53			
Curb and gutter location	404.C(11)	53			
Location of sidewalks and/or trails with widths, grades, and ramps for ADA requirements	404.C(12)	53			

FINAL PLAN CHECKLIST

Ordinance Requirement	Section	Page	Yes	No	N/A
Plan Details - Proposed Site Conditions (Continued)					
Location of streetlights, street signs, and traffic control devices, signs and/or pavement markings	404.C(13)	53			
Location and type of vegetation and landscaping to be planted between curb and shoulder of ROW	404.C(14)	53			
Location and species of street trees, shade strees, and landscaping to be planted	404.C(15)	53			
Location of light fixtures, types, and sizes	404.C(16)	53			
Proposed public buildings and areas, playgrounds, open space, etc.	404.C(17)	53			
Identification of buildings and historic features proposed to be demolished	404.C(18)	53			
Location, width, and use of utility, drainage and all other proposed easements	404.C(19)	53			
Location and pipe diameter of storm water, sanitary sewer, and water mains and laterals.	404.C(20)	53			
Final veritical and horizontal alignment for sanitary sewer, water and storm sewer and drainage systems. Manhole locations, size and material.	404.C(21)	53			
Location of fire hydrants and other operational water main infrastructure	404.C(22)	53			
Location of all proposed stormwater management and erosion control facilities	404.C(23)	53			
Deep probe and soil percolation test sites and proposed absorption field areas if on-lot sewage disposal facilities are proposed, including isolation distances	404.C(24)	53			
Assigned tax parcel identification numbers and addresses from appropriate Union Co. agencies	404.C(25)	53			
Other Required Information and Reports to be Submitted					
Copies of private deed restrictions, covenants, grants of easements, homeowner and business association agreements or other restrictions	404.D(1)	54			
Final design of proposed bridges and culverts	404.D(2)	54			
Typical street cross section for each street-should include entire ROW and show materials for base, surfacing, and method of construction	404.D(3)	54			
Street centerline profile for proposed streets showing finished grade (See Ordinance for details)	404.D(4)	54			
Grading plan showing cross sections for cut fill areas and for general site development activities including parking areas, buildings, stormwater facilities, etc.	404.D(5)	54			
Typical curb and gutter design, materials and method of construction	404.D(6)	54			
Typical sidewalk or trail design, materials and method of construction	404.D(7)	54			
Sewage Facilities Plan and/or Engineering Feasibility Study and required documentation	404.D(8)	54			
Water Facilities Plan and required documentation	404.D(9)	54			
Appropriate letters from utility service providers	404.D(10)	54			
Stormwater Management and Drainage Plan and narrative	404.D(11)	54			
Sketch of proposed streets, sanitary and storm sewer and water lines for the remainder of the tract when the plan only covers a portion of the tract	404.D(12)	54			
Final cost of all improvements including an itemized list of components (unit cost, quantity, etc.)	404.D(13)	54			
Appropriate signed Improvement Guaranty Agreement and surety for improvements	404.D(14)	54			
	404.D(15)	54			
Landscaping Plan including names, sizes, quantities and location of plant materials	404.D(16)	54			
Erosion and Sedimentation Pollution Control Plan and approval letter from Union Co. Cons. District	404.D(17)	55			
Documentation that all floodplain and floodway regulations are met	404.D(18)	55			
Copies of required regulatory permits for proposed alterations/obstructions to water resources	404.D(19)	55			
Community Impact Analysis, Natural Features Analysis and Traffic Engineering Study	404.D(20)	55			
Occupancy permit or letter from utility owner regarding minimum setback distance compliance	404.D(21)	55			
Letter of municipal zoning compliance	404.D(22)	55			
Approval letters from Union County agencies for road names, addresses, tax parcel numbers	404.D(23)	55			
Letter from any agricultural or conservation easement holders stating conditions on property	404.D(24)	55			
Penn DOT Highway Occupancy Permit or appropriate municipal driveway permit	404.D(25)	55			
Appropriate remediation reports and/or testing for contaminated sites (See Ordinance)	404.D(26)	55			
Certificate, signature and seal of the professional land surveyor certifying survey accuracy	404.E(1)	55			
Certificate, signature and seal of the landscape architect, surveyor, or professional engineer that all other details on and accompanying the plan are correct	404.E(2)	56			
Certification of Ownership in the form of a notarized statement by the owner(s)	404.E(3)	56			
Final Plan Certification of Notification block for Municipal Governing Body	404.E(4)	56			
Final Plan Approval Certification Block for Union County Planning Commission	404.E(5)	56			
Four inch by two inch (4"x2") space in upper left hand corner for Recorder's Office Block	404.E(6)	56			

FINAL PLAN CHECKLIST

Ordinance Requirement	Section	Page	Yes	No	N/A
Plan Certifications and Notifications					
A certificate of dedication of streets, sidewalks, and other public property	404.E(7)	56			
Notation indicating any area/and or improvement(s) that are not to be offered for dedication	404.E(8)	56			
Notation on the plan of any modifications granted by the Commission pursuant to the Ordinance	404.E(9)	56			
Notation on the plan of any variances granted in accordance with the applicable zoning ordinance	404.E(10)	56			

MINOR SUBDIVISION PLAN CHECKLIST

Ordinance Requirement	Section	Page	Yes	No	N/A
Administrative Items					
One (1) completed UCPC Application Form	307.B(3)	37			
Ten (10) copies of Final Plan	307.B(1)	37			
Three (3) copies of all reports, deed covenants, notifications, studies, etc.	307.B(2)	37			
Filing Fee in the form of a check or money order payable to Union County Treasurer	307.B(4)	37			
Request for Modifications of this Ordinance form(s) and supporting documentation	405.A(13)	57			
Plan Details - Project Description and Location					
Brief narrative describing the proposed project	405.A(1)	56			
Title block with project name, municipality, plan date, revision dates, and owner name, and address	405.A(2)	56			
Name, address, phone # of firm/plan preparer along with assigned project #, signature, registration #, and seal of professional preparing the plan	405.A(3)	56			
North arrow	405.A(4)	56			
Graphic and written scale	405.A(5)	56			
Site location map of a sufficient size and scale to clearly show location of property	405.A(6)	57			
Deed book and page and parcel ID number of the tract to be subdivided or developed	405.A(7)	57			
Total acreage of the entire existing tract	405.A(8)	57			
Tract boundary w/bearings and distances showing relationship of proposal to the entire tract and all prior conveyances from parent tract since 1969	405.A(9)	57			
Owners names, deed book and page and parcel ID number of adjacent unplotted land and the names, deed book and page of all abutting recorded subdivisions.	405.A(10)	57			
Table of zoning district requirements including lot area and bulk, density, building and impervious coverage, yards and zoning for adjacent lands if different	405.A(11)	57			
Plan Details - Existing Site Characteristics					
Topographic contours (see Ordinance section for details)	405.B(1)	57			
Steep slopes showing areas 16 to 25 % and those areas greater than 25%	405.B(2)	57			
Soil types and boundaries	405.B(3)	57			
Prominent natural and topographic features. (See Ordinance section for details)	405.B(4)	57			
General vegetative cover of the site including a brief description	405.B(5)	57			
Location of quarry sites, solid waste disposal areas, wildcat dumps, EPA Superfund sites, and other potentially hazardous conditions on the site or adjacent tracts	405.B(7)	58			
Approximate location for significant historic and cultural features on or w/in 200' of site (see Ordinance section for details)	405.B(8)	58			
Existing recorded streets, roads, alleys or other means of access and easements on or adjacent to the tract; including name or number, ownership, width, condition of pavement and grades, and purpose for which easement was created	405.B(9)	58			
Location, ownership and width of rights-of-ways and easements for features listed in this section (see Ordinance section for details)	405.B(10)	58			
Location and material of all existing permanent monuments and lot line markers	405.B(11)	58			
Plan Details - Proposed Site Conditions					
Site data including total acreage, # of lots, density, # dwelling units, existing and proposed land use, impervious area, tract residual, parking required, parking provided, open space and common areas, etc.	405.C(1)	58			
Required yards and building setback lines w/distances	405.C(2)	58			
Lot layout w/lot lines, approximate dimensions, lot square footage and acreage	405.C(3)	58			
Block and lot numbers in a consecutive and clockwise or left to right order	405.C(4)	58			
Location and width of rights-of-way and cartways along with sight distances	405.C(5)	58			
Delineation of clear sight triangles	405.C(6)	58			
Identification of buildings and historic features proposed to be demolished	405.C(7)	58			
Location, width, and use of utility, drainage and all other proposed easements	405.C(8)	58			
Location of all proposed stormwater management and erosion control facilities	405.C(9)	58			
Deep probe and soil percolation test pits and proposed absorption field areas including applicable isolation distances	405.C(10)	58			
Assigned tax parcel identification numbers and addresses from appropriate Union Co. agencies	405C(11)	59			

MINOR SUBDIVISION PLAN CHECKLIST

Ordinance Requirement	Section	Page	Yes	No	N/A
Other Required Information and Reports to be Submitted					
Copies of private deed restrictions, covenants, grants of easements, homeowner and business association agreements or other restrictions	405.D(1)	59			
Sewage Facilities Plan and/or Engineering Feasibility Study and required documentation	405.D(2)	59			
Stormwater Management and Drainage Plan and narrative	405.D(3)	59			
Erosion and Sedimentation Pollution Control Plan and approval letter from Union Co. Cons. District	405.D(4)	59			
Documentation that all floodplain and floodway regulations are met	405.D(5)	59			
Copies of required regulatory permits for proposed alterations/obstructions to water resources	405.D(6)	59			
Occupancy permit or letter from utility owner regarding minimum setback distance compliance	405.D(7)	59			
Letter of municipal zoning compliance	405.D(8)	59			
Approval letters from Union County agencies for road names, addresses, tax parcel numbers	405.D(9)	59			
Letter from any agricultural or conservation easement holders stating conditions on property	405.D(10)	59			
Penn DOT Highway Occupancy Permit or appropriate municipal driveway permit	405.D(11)	59			
Appropriate remediation reports and/or testing for contaminated sites (See Ordinance)	405.D(12)	59			
Plan Certifications and Notifications					
Certificate, signature and seal of the professional land surveyor certifying survey accuracy	405.E(1)	60			
Certificate, signature and seal of the landscape architect, surveyor, or professional engineer that all other details on and accompanying the plan are correct	405.E(2)	60			
Certification of Ownership in the form of a notarized statement by the owner(s)	405.E(3)	60			
Final Plan Approval Certification Block for Union County Planning Commission	405.E(4)	60			
Four inch by two inch (4"x2") space in upper left hand corner for Recorder's Office Block	405.E(5)	60			
Notation on the plan of any modifications granted by the Commission pursuant to the Ordinance	405.E(6)	60			
Notation on the plan of any variances granted in accordance with the applicable zoning ordinance	405.E(7)	60			

LOT ADDITION/CONSOLIDATION PLAN CHECKLIST

Ordinance Requirement	Section	Page	Yes	No	N/A
Administrative Items					
One (1) completed UCPC Application Form	307.B(3)	37			
Ten (10) copies of Final Plan	307.B(1)	37			
Filing Fee in the form of a check or money order payable to Union County Treasurer	307.B(4)	37			
Plan Details - Project Description and Location					
Brief narrative describing the proposed project	406.A(1)	60			
Title block with project name, municipality, plan date, revision dates, and owner name and address	406.A(2)	60			
Name, address, phone # of firm/plan preparer along with assigned project #, signature, registration #, and seal of professional preparing the plan	406.A(3)	60			
North arrow	406.A(4)	60			
Graphic and written scale	406.A(5)	61			
Site location map of a sufficient size and scale to clearly show location of property	406.A(6)	61			
Deed book and page and parcel ID number of the tract to be subdivided or developed	406.A(7)	61			
Owners names, deed book and page and parcel ID number of adjacent unplotted land and the names, deed book and page of all abutting recorded subdivisions	406.A(8)	61			
Total acreage of the entire existing tract	406.A(9)	61			
Tract boundary w/bearings and distances showing relationship of proposal to the entire tract and all prior conveyances from parent tract since 1969	406.A(10)	61			
Table of zoning district requirements including lot area and bulk, density, building and impervious coverage, yards and zoning for adjacent lands if different	406.A(11)	61			
Plan Details - Existing Site Characteristics					
Existing recorded streets, roads, alleys or other means of access and easements on or adjacent to the tract; including name or number, ownership, width, condition of pavement and grades, and purpose for which easement was created	406.B(1)	61			
Location and material of all existing permanent monuments and lot line markers	406.B(2)	61			
Plan Details - Proposed Site Conditions					
Lot layout w/lot lines, approximate dimensions, lot square footage and acreage	406.C(1)	61			
Assigned tax parcel identification numbers and addresses from appropriate Union Co. agencies	406.C(2)	61			
Other Required Information and Reports to be Submitted					
Copies of private deed restrictions, covenants, grants of easements, homeowner and business association agreements or other restrictions	406.D(1)	61			
Letter of municipal zoning compliance	406.D(2)	61			
Letter from any agricultural or conservation easement holders stating conditions on property	406.D(3)	61			
Approval letters from Union County agencies for road names, addresses, tax parcel numbers	406.D(4)	62			
Plan Certifications and Notifications					
Certificate, signature and seal of the professional land surveyor certifying survey accuracy	406.E(1)	62			
Certification of Ownership in the form of a notarized statement by the owner(s)	406.E(2)	62			
Final Plan Approval Certification Block for Union County Planning Commission	406.E(3)	62			
Four inch by two inch (4"x2") space in upper left hand corner for Recorder's Office Block	406.E(4)	62			
Notation on the plan of any variances granted in accordance with the applicable zoning ordinance	406.E(5)	62			
Appropriate notation for lot additions, lot consolidations, tract surveys, correction of survey errors	406.E(6)	62			
Notation that a permit for sewage disposal has neither been requested nor granted for the lot and that the grantee, his heirs and assigns accept the responsibility for obtaining a permit for sewage disposal facilities if, and at the time, same are necessary	406.E(7)	62			

APPENDIX B

Plan Application Form

APPENDIX B

Return to: Union County Planning Commission
Union County Government Center
155 North 15 Street
Lewisburg, PA 17837
Phone 570 524-3840
Fax 570 524-3850

UNION COUNTY APPLICATION FOR SUBDIVISION OR LAND DEVELOPMENT

SUBJECT: Request for review of a Subdivision or Land Development under the Union County Subdivision and Land Development Ordinance. This Application must be completed by the Applicant, and submitted to the above address, along with a minimum of twelve (12) sets of plans, accompanying documents, and the required fee (see reverse side).

TO BE COMPLETED BY STAFF

DATE OF SUBMISSION: _____

REQUIRED FEE: _____

NUMBER OF PLANS SUBMITTED: _____

TO BE COMPLETED BY APPLICANT

Development Name (if applicable): _____ Location: _____

Owner's Name: _____ Phone : _____

Owner's Address: _____

Applicant's Name: _____ Phone : _____

Applicant's Address: _____

Architect/Engineer/Surveyor Name: _____ Phone : _____

Architect/Engineer/Surveyor Address: _____

TYPE OF REVIEW REQUESTED

☐ Unofficial Sketch
☐ Preliminary
☐ Final

TYPE OF PLAN

☐ Minor Subdivision – 5 lots or less
☐ Major Subdivision
☐ Add-on Subdivision
☐ Land Development

Tax Parcel(s): # _____
_____
_____

Zoning District: _____

PLAN INFORMATION

Total Area (gross acres): _____

Acreage of Residual: _____

Ownership of Roads:
☐ Public ☐Private

Located in Floodway or Floodplain:
☐Yes ☐No

Erosion/Sedimentation Control Plan:
☐ Submitted ☐ Not applicable

PROPOSED LAND USE / # OF LOTS

☐ Agriculture _____
☐ Single Family _____
☐ Townhouses _____
☐ Twin Units _____
☐ Apartments _____
☐ Mobile Homes _____
☐ Commercial _____
☐ Industrial _____
☐ Institutional _____
☐ Other _____ _____

PROPOSED UTILITIES
(check appropriate boxes)

	Water	*Sewer*
Public/ Community	☐	☐
On-site	☐	☐

No new sewage disposal or water supply proposed ☐

PREVIOUS SUBDIVISIONS

Date(s) of previous subdivision(s), if applicable, and number of lots:

_____

The term "lot" as defined in the Union County Subdivision and Land Development Ordinance includes a parcel, tract or area of land established by a plat or otherwise as permitted by law and to be used, developed or build upon as a unit.

I, or we, acknowledge that all the information provided in this Application and in the Plan and documents are true and factual. I, or we, understand that false statements herein are made subject to the penalties of 18 PA. CS - Section 4904, relating to unsworn falsification to authorities, and I or we, shall comply with all ordinances of Union County as they apply.

Signature: _____ Date: _____

Revised 3/27/13

FEE SCHEDULE

The following fees shall apply to each land subdivision or land development submitted to the Union County Planning Commission

SKETCH PLAN: No Charge

SUBDIVISION PLANS:	**Base Fee**	**Fees for each Lot or Unit**
Minor Subdivisions (less than 5 lots)	$150.00	Plus $15.00 /lot/unit (whichever is greater)
Major Subdivisions (greater than 5 lots)	$375.00	Plus $15.00 /lot/unit (whichever is greater)
Add-on Subdivisions	$125.00	Plus $15.00 /"add-on lot"
LAND DEVELOPMENT PLANS:	**Base Fee**	**Fees for each Lot or Unit**
Minor Land Development*	$150.00	Plus $15.00 /lot/unit (whichever is greater)
Major Land Development*	$375.00	Plus $15.00 /lot/unit (whichever is greater)
TIME EXTENSIONS:	1st - No Charge	Subsequent: $65.00 each

* Minor Land Development is less than 5,000 square feet of impervious coverage with no improvements. All other land developments will be considered Major for purposes of application fees.

Checks should be made payable to: County of Union

TIME LIMITATIONS: The County Planning Commission has ninety (90) days within which to review and render a decision on subdivision and land development plans once applications are officially filed in accordance with the Union County Subdivision and Land Development Ordinance. The review period may be extended if requested by the applicant. When the time period has been stopped due to an incomplete application package, incorrect fee or other reasons, the time period will continue from the day in which the application package is deemed complete.

STAFF USE ONLY

Date Received by UCPC: _____

Review Completed By: _____

Date of Review: _____

Plan Number: _____

Municipal Zoning Compliance: _____

Date Action Taken: _____

☐ Approved ☐ Denied

- ° Preliminary
- ° Final

THIS PLAN HAS BEEN SUBMITTED TO:

County Conservation District	Date _____
PennDOT	Date _____
DEP	Date _____
Emergency Services	Date _____
County Engineer	Date _____
Other _____	Date _____

APPENDIX C

Time Extension Request Form

APPENDIX C

TIME EXTENSION REQUEST FORM

SECTION I - GENERAL INFORMATION

Applicant_____ Date_____

Address_____ Plan Title_____

_____ Phone_____

_____ Signature[1]_____

[1]- By signing this form the Applicant understands that the Time Extension Requested is in addition to the 90-day time limit prescribed by the Pennsylvania Municipalities Planning Code for plan approval.

SECTION II - TIME EXTENSION REQUEST

I/We,_____, request that the Union County Planning Commission favorably consider the granting of a Time Extension to the ( ) Preliminary or ( ) Final Plan for the plan referenced in Section I above.

Length of Time Extension Requested _____ Days Date Requested Extension due to expire_____

Applicant's Justification for Time Extension_____

_____

_____

_____

_____

Is this the minimum Time Extension necessary? ☐ Yes ☐ No

SECTION III - STAFF AND/OR SUBDIVISION REVIEW COMMITEE RECOMMENDATION

Reviewed by: ☐ Staff ☐ Review Committee

Date of Review_____ Staff Reviewer_____

Recommendation: ☐ Approval ☐ Denial

Reason(s) for Approval/Denial_____

_____

_____

_____

Prepared by UCPC 1/3/02

SECTION IV - PLANNING COMMISSION ACTION (If applicable)

Date Action Taken_____

Action Taken: ☐ Time Extension Approved ☐ Time Extension Denied Vote_____

Reasons for Approval/Denial_____

_____

_____

_____

_____

_____

Conditions of the Time Extension Approval_____

_____

_____

SECTION V - ADDITIONAL COMMENTS

Prepared by UCPC 1/3/02

APPENDIX D

Staff Decision Appeal Form

APPENDIX D

APPEAL OF STAFF DECISION FORM

*** The completed Appeal Form and supplemental information shall be submitted to the County Planning Office no later than 15 days prior to the regularly scheduled meeting of the Planning Commission in order for the appeal to be considered at that meeting.**

SECTION I - GENERAL INFORMATION

Appellant_____ Date_____

Address_____ Plan Title_____

_____ Phone_____

_____ Signature_____

SECTION II - NATURE OF APPEAL

Date of Decision by Staff_____ Decision Rendered By_____

Basis of this appeal relates to (check all that apply): ☐ Conditions of Approval ☐ Ordinance Interpretation

☐ Plan Disapproval ☐ Processing Procedures ☐ Plan Requirements

Did you attempt to resolve the matter with the staff member issuing the decision? ☐ Yes ☐ No

Did you contact the Planning Director in an attempt to resolve the issue prior to filing this appeal? ☐ Yes ☐ No

Specific Decision being Appealed (Include Ordinance Section(s)) _____

_____

_____

_____

_____

Applicant's Reason for Appeal_____

_____

_____

_____

_____

_____

_____

Prepared by UCPC 1/3/02

SECTION IV - PLANNING COMMISSION ACTION (UCPC Use Only)

Date Appeal Heard_____

Vote_____

Decision ☐ Grant Appeal (Reverse Staff Decision Fully)
☐ Deny Appeal (Uphold Staff Decision Fully)
☐ Partial Grant/Denial of Appeal

Appellant Present for Appeal: ☐ Yes ☐ No

Decision Issued by Commission_____

_____

_____

_____

_____

_____

_____

_____

_____

Dissenting Opinion(s)_____

_____

_____

_____

_____

_____

SECTION V - ADDITIONAL COMMENTS

Date Written Decision Sent to Appellant_____Staff Signature_____

Prepared by UCPC 1/3/02

APPENDIX E

Notifications and Certifications

Appendix E-1: Non-Jurisdictional UCPC Review Certification

Appendix E-2: Certificate of Survey Accuracy

Appendix E-3: Professional Engineer Certification

Appendix E-4: Other Professional Certification

Appendix E-5: Certificates of Ownership and Acknowledgement of Plan

Appendix E-6: Preliminary Plan Municipal Governing Body Certification

Appendix E-7: UCPC Preliminary Plan Certification

Appendix E-8: UCPC Modification Notification

Appendix E-9: Final Plan Municipal Governing Body Certification

Appendix E-10: Zoning Variance & Conditional Use Notes

Appendix E-11: UCPC Final Plan Certification

Appendix E-12: Improvements Dedication Certification

Appendix E-13: Non-Dedicated Improvements Certification

Appendix E-14: Lot Addition, Consolidation, Tract Survey Notes

APPENDIX E-1

Non-Jurisdictional Union County Planning Commission Review Certification

The Union County Planning Commission, as required by the Pennsylvania Municipalities Planning Code, has received a copy of this plan for review and comment on_____, 20___. This does not indicate approval or disapproval of the plan by the Union County Planning Commission and the Commission does not represent nor guarantee that this plan complies with the various ordinances, rules, regulations, or laws of the local municipality, the Commonwealth, or the Federal government.

_____
Planning Director (or Staff Designee)

APPENDIX E-2

Certificate of Survey Accuracy

I hereby certify that, to the best of my knowledge, the survey and plan shown and described hereon is true and correct to the accuracy required by the Union County Subdivision and Land Development Ordinance and in accordance with the laws of the Commonwealth of Pennsylvania.

_____20__ _____[1]

2

[1] – Signature of the registered Professional Land Surveyor.
[2] – Seal of the registered Professional Land Surveyor.

APPENDIX E-3

Professional Engineer Certification

I hereby certify that, to the best of my knowledge, the engineering details shown and described hereon are true and correct and are designed in conformance with the Union County Subdivision and Land Development Ordinance and in accordance with the laws of the Commonwealth of Pennsylvania.

_____20__ _____[1]

2

[1] – Signature of the registered Professional Engineer.
[2] – Seal of the registered Professional Engineer.

APPENDIX E-4

Other Professional Certifications

I hereby certify that, to the best of my knowledge, the _____[1] details shown and described hereon are true and correct and are in conformance with the Union County Subdivision Land Development Ordinance and in accordance with the laws of the Commonwealth of Pennsylvania.

_____20__ _____[2]

3

[1] – Insert area of professional competency (i.e. geologic, hydrogeologic, agronomic, landscape)
[2] – Signature of the registered professional or recognized expert.
[3] – Seal of the registered professional.

APPENDIX E-5

Certificate of Ownership and Acknowledgement of Plan
(Individual)

On this, the _____day of _____, 20__, before me, the undersigned officer, personally appeared_____[1] who being duly sworn according to law, deposes and says they are the owner and/or equitable owner of the property shown on this plan, that they acknowledge the same to be their act and plan, and desire the same to be recorded as such according to law.

_____[2]

Witness my hand and seal on this day and date written above.

_____[3]

My Commission Expires_____, 20__.

[1] – Identify ownership or equitable ownership
[2] – Signature of the owner(s).
[3] – Signature and seal of the Notary Public or Other Officer authorized to acknowledge deeds.

Certificate Of Ownership and Acknowledgement Of Plan
(Co-Partnership)

On this, the _____day of _____, 20__, before me, the undersigned officer, personally appeared_____[1] being from the firm of_____[2] who being duly sworn according to law, deposes and says that the co-partnership is the owner and/or equitable owner of the property shown on this plan, that the plan thereof was made at its direction, that it acknowledges the same to be its act and plan, and desire the same to be recorded as such according to law.

_____[3]

Witness my hand and seal on this day and date written above.

_____[4]

My Commission Expires _____,20__.

[1] – Individual(s) representing the co-partnership
[2] – Name of the co-Partnership
[3] – Signature of the owner(s)
[4] – Signature and seal of the Notary Public or Other Officer authorized to acknowledge deeds.

Certificate of Ownership and Acknowledgement of Plan
(Corporate)

On this, the _____day of _____, 20__, before me, the undersigned officer, personally appeared_____[1] being of _____[2] who being duly sworn according to law, deposes and says that the corporation is the owner and/or equitable owner of the property shown on this plan, that he/she is authorized to execute said plan on behalf of the corporation, that the plan is the act and deed of the corporation and was made at its direction, and that the corporation further desires the same to be recorded as such according to law on its behalf.

_____[3]

5

Witness my hand and seal on this day and date written above.

_____[4]

My Commission Expires_____,20__.

[1]– Individual's Title
[2]– Name of Corporation
[3]– Signature of Individual
[4]- Signature and seal of the Notary Public or Other Officer authorized to acknowledge deeds.
[5]- Corporate Seal

APPENDIX E-6

Preliminary Plan Municipal Governing Body Notification

The _____[1], as required by the Union County Subdivision and Land Development Ordinance, has received a copy of the Preliminary Plan for_____[2] on _____ 20___ for review and comment. This certification does not indicate approval or disapproval of the plan by the municipality nor does it represent any guarantee or inference that the plan complies with any applicable laws, regulations and ordinances.

_____

Chairperson

_____

Vice Chairperson or Secretary

1 – Name of Board of Supervisors or Borough Council.
2 – Name of subdivision or land development.

APPENDIX E-7

Union County Planning Commission Preliminary Plan Certification

Preliminary Plan approval granted by the Union County Planning Commission on _____, 20_____. The Preliminary Plan includes the complete set of plans and information that was filed as part of the application. **This plan may not be recorded in the office of the Union County Recorder of Deeds**.

_____
Chairperson

_____
Vice Chairperson or Secretary

APPENDIX E-8

Union County Planning Commission Modification Notification

At a meeting held on _____, 20___, the Union County Planning Commission granted the following modification(s) to the following standards required by the Union County Subdivision and Land Development Ordinance: (list modifications(s) including citation of ordinance section number).

APPENDIX E-9

Final Plan Municipal Governing Body Notification

The _____[1], as required by the Union County Subdivision and Land Development Ordinance, has received a copy of the Final Plan for _____[2] on _____ 20___ for review and comment. This certification does not indicate approval or disapproval of the plan by the municipality nor does it represent any guarantee or inference that this plan complies with any applicable laws, regulations and ordinances.

_____
Chairperson

_____
Vice Chairperson or Secretary

1 – Name of Board of Supervisors or Borough Council.
2 – Name of subdivision or land development.

APPENDIX E-10

Zoning Variance and Conditional Use Notes

At a meeting held on _____, 20____, the _____[1] Zoning Hearing Board granted a variance to the following requirements of the _____[1] Zoning Ordinance: (list variance(s) including citation of ordinance section number).

At a meeting held on _____, 20____, the _____[2] granted approval of a conditional use permit for the land uses shown on this plan in accordance with the _____[1] Zoning Ordinance.

1 – Name of municipality
2 – Name of municipal governing body

APPENDIX E-11

Union County Planning Commission Final Plan Certification

Final Plan approval granted by the Union County Planning Commission on _____, 20_____. The Final Plan includes the complete set of plans and information that was filed as part of the application.

_____
Chairperson

_____
Vice Chairperson or Secretary

APPENDIX E-12

Improvements Dedication Certification

We the undersigned, owners of the real property shown and described herein, do certify that we have laid off, platted and subdivided said property and that all proposed streets, easements, and other property identified as proposed public property shown and not heretofore dedicated, are hereby dedicated to the public use.

_____ _____20___

Owner*

* For multiple owners there should be signature blocks for each one.

APPENDIX E-13

Non-Dedicated Improvements Notation

The following improvements_____[1] shown on this set of plans **are not dedicated** for public use. The owner his successors, executors and assigns shall retain ownership and maintenance responsibilities of non-dedicated improvements.

[1] - List those improvements shown on the Final Plan that **are not dedicated** for public use.

APPENDIX E-14

Lot Addition, Consolidation, Tract Survey, Survey Correction Notes

Lot Addition Notation

This Final Plan depicts Lot No. _____as a lot addition to the existing land(s) of record of the Grantee as recorded in Deed Book___ Page___. Both parcels are to be considered as one for future subdivision, land transfer, land development and/or building purposes.

A permit for sewage disposal has been neither requested nor granted for this lot. The Grantee, his heirs, successors, and assigns accept the responsibility for obtaining a permit for sewage disposal facilities if, and at the time, same are necessary. Lot(s) ___ and ___ shown hereon, as of the date of this plot plan notice recording, the property/subdivision is and shall be dedicated for the express purpose of a lot addition.

No portion of this property/subdivision has to be approved by _____[1] or the approving agency for the installation of sewage disposal facilities. No sewage permit will be issued for the installation, construction to or use of any sewage collection, conveyance, treatment or disposal system (except repairs to existing systems) unless the municipality and the approving agency have approved sewage facilities planning for the property/subdivision shown hereon in accordance with the Pennsylvania Sewage Facilities Act (35 P.S. Section 750.1 et. seq.) and regulations promulgated thereunder. Prior to signing, executing, implementing or recording any sales contract or subdivision plan, any purchaser or subdivider of any portion of this property should contact appropriate officials of _____[1] which is charged with administering the Sewage Facilities Act to determine what sewage facilities planning is required and the procedure and requirements for obtaining appropriate permits or approvals.

Lot Consolidation Notation

This Final Plan depicts the consolidation of the entire area of existing lots of record, as formerly recorded in Deed Book___ Page___, into a single lot with the effect of eliminating one or more original lots of record. The land area of said former lots of record is completely contained within the surveyed tract boundary shown hereon and which are to be considered as a single lot for future subdivision, land transfer, land development and/or building purposes. [2]

Tract Survey Notation

This Final Plan does not propose any subdivision of property or land development activity and is for the sole purpose of updating the tract survey of existing land(s) of record of the owner as recorded in Deed Book ___ Page___.

[1] - Municipality in which the property to be subdivided is located.

[2]- Lot consolidation differs from a Lot Addition in that a consolidation combines the total tract area of two or more lots into a single lot and the consolidation plan would show a new tract boundary survey for the land area that was combined with former common lot lines eliminated.

APPENDIX F

Improvements Cost Estimate

APPENDIX F

XYZ Engineering Company
110 Market Street
Lewisburg, PA 17837

Prepared By: Joanne C. Engineer
September 12, 2001

BUFFALO VALLEY ESTATES - PHASE II

Summary of Cost Opinion

Description	Cost[1]
1. General Construction	$16,700.00
2. Roadway and Sewer Construction	$47,250.00
3. Water and Sanitary Sewer Construction	$101,190.00
4. Landscaping Amenities	$0.00
5. Underground Utilities Construction	$6,300.00
6. Highway Improvements	$0.00
Total Estimated Construction Cost[2] =	**$171,440.00**
Estimated Engineering Fees =	$4,000.00
Estimated Permitting Fees (0.5%) =	$857.20
Estimated Inspection Fees (0.5%) =	$857.20
Estimated Legal and Administration Fees (4%) =	$6,857.60
Contingency =	$3,428.80
Total Estimated Phase II Project Cost =	**$187,440.80**

1 - The Cost Opinion is based upon the Buffalo Valley Estates Phase II Final Land Development Plan.

2 - Refer to the attached itemized schedule of prices for the individual project costs.

XYZ Engineering Company
110 Market Street
Lewisburg, PA 17837

ITEMIZED SCHEDULE OF EXPENSES
for
Buffalo Valley Estates, Phase II
"General Construction"

Item No.	Description	Unit	Quantity	Unit Cost	Total Price
1	Maintenance & protection of traffic during const.	L.S.	1	$1,000.00	$1,000.00
2	Mobilization	L.S.	1	$3,000.00	$3,000.00
3	Erosion & Sedimentation control plan	L.S.	1	$4,000.00	$4,000.00
4	Clearing and grubbing	AC.	0	$0.00	$0.00
5	Topsoil, seed, mulch, and fertilizer	SY	5,800.0	$1.50	$8,700.00
6					
				Total	**$16,700.00**
1	Trench excavation	L.F.	900	$5.00	$4,500.00
2	Trench backfill, 0'-4' depth native	L.F.	860	$1.00	$860.00
3	Trench backfill, 0'-4' depth select	L.F.	40	$6.00	$240.00
4	Conduit Roadway Crossings	EA.	1	$500.00	$500.00
5	General excavation, transformers	C.Y.	20	$10.00	$200.00
6					
7					
8					
9					
10					
				Total	**$6,300.00**
				TOTAL COST	**$23,000.00**

XYZ Engineering Company
110 Market Street
Lewisburg, PA 17837

ITEMIZED SCHEDULE OF EXPENSES
for
Buffalo Valley Estates, Phase II
"Roadway and Storm Sewer Construction"

Item No.	Description	Unit	Quantity	Unit Cost	Total Price
1	Excavation, unclassified	C.Y.	1,000	$4.50	$4,500.00
2	Topsoil stripping and stockpiling	C.Y.	1,300	$3.50	$4,550.00
3	Bituminous wearing course, ID-2, 1 1/2" depth	S.Y.	2,020	$3.00	$6,060.00
4	Bituminous wearing course, ID-2, 2 1/2" depth	S.Y.	0	$4.50	$0.00
5	Bituminous concrete base course, 4" depth	S.Y.	2,120	$5.10	$10,812.00
6	Bituminous concrete base course, 4 1/2" depth	S.Y.	0	$5.55	$0.00
7	Subbase, 6" depth	S.Y.	2120	$4.00	$8,480.00
8	Roadway subsurface reinforcement	TN	0	$18.00	$0.00
9	4" pavement base drain	L.F.	0	$6.00	$0.00
10	Rolled bituminous curbing	L.F.	1350	$2.00	$2,700.00
11	Trench excavation, 0'-6- depth	L.F.	185	$4.00	$740.00
12	Trench excavation, 6'-8' depth	L.F.	0	$10.00	$0.00
13	Trench excavation, 8'-10' depth	L.F.	0	$14.00	$0.00
14	Trench excavation, 10'-12' depth	L.F.	0	$18.00	$0.00
15	Storm sewer pipe, 15" diameter, HDPE-SB	L.F.	177	$24.00	$4,248.00
16	Storm sewer pipe, 18" diameter, HDPE-SB	L.F.	0	$28.00	$0.00
17	Storm sewer pipe, 24" diameter, HDPE-SB	L.F.	0	$38.00	$0.00
18	Storm sewer pipe, 30" diameter, HDPE-SB	L.F.	0	$42.00	$0.00
19	Storm sewer pipe, 42" diameter, HDPE-SB	L.F.	0	$55.00	$0.00
20	Storm sewer pipe, 45"x29" diameter, HDPE-SB	L.F.	0	$75.00	$0.00
21	Storm sewer pipe, 24"diameter, RCCP	L.F.	0	$45.00	$0.00
22	Select backfill No. 57 coarse aggregate	C.Y.	120	$18.00	$2,160.00
23	Type "M" inlet	EA.	2	$900.00	$1,800.00
24	Type "M" inlet, special	EA.	0	$1,500.00	$0.00
25	Type "C" inlet frame and grate, bicycle safe	EA.	2	$400.00	$800.00
26	Reinforce concrete junction box, 2'x2'x2'	EA.	0	$900.00	$0.00
27	Reinforce concrete junction box, 3'x3'x3'	EA.	0	$950.00	$0.00
28	Concrete flared end sections, 15" diameter	EA.	1	$400.00	$400.00
29	Concrete flared end sections, 24" diameter	EA.	0	$500.00	$0.00
30	Type "D-W" endwall, 42" diameter	EA.	0	$2,800.00	$0.00
31	Aggregate rip-rap, R-4	S.Y.	0	$10.00	$0.00
32	Reinforced concrete box culvert, 4'x10', 45 deg.	L.F.	0	$765.00	$0.00
33	Line existing culvert, 54" diameter gal. CMP	L.F.	0	$120.00	$0.00
34	Street and light fixture	EA.	0	$1,200.00	$0.00
35	Street lighting, electrical service	L.F.	0	$1.10	$0.00
36	Pavement markings and line painting	L.S.	0	$0.00	$0.00
37	Traffic control signs	EA.	0	$0.00	$0.00
38	Guide Rail, 6' x 10' rail	L.F.	0	$0.00	$0.00
				TOTAL COST	**$47,250.00**

XYZ Engineering Company
110 Market Street
Lewisburg, PA 17837

ITEMIZED SCHEDULE OF EXPENSES
for
Buffalo Valley Estates, Phase II
"Sanitary Sewer and Water Service Construction"

Item No.	Description	Unit	Quantity	Unit Cost	Total Price
1	Trench excavation, 0'-6- depth	L.F.	740	$5.00	$3,700.00
2	Trench excavation, 6'-8' depth	L.F.	340	$10.00	$3,400.00
3	Trench excavation, 8'-10' depth	L.F.	0	$14.00	$0.00
4	Trench excavation, 16'-18' depth	L.F.	340	$22.00	$7,480.00
5	Pipe bedding, 1B aggregate	TN.	792	$10.00	$7,920.00
6	Select backfill, No. 57 coarse aggregate	C.Y.	1815	$18.00	$32,670.00
7	Native backfill, 0'-6' depth	L.F.	740	$2.00	$1,480.00
8	Sanitary sewer main, 8" diameter PVC. SDR-35	L.F.	640	$7.25	$4,640.00
9	Sanitary sewer lateral, 8"diameter, PVC SDR-35	L.F.	650	$10.00	$6,500.00
10	Sanitary sewer clean-out, 8" riser	EA.	0	$800.00	$0.00
11	Standard manhole 4' diameter, 0' to 6'	EA.	4	$1,800.00	$7,200.00
12	Standard manhole 4' diameter, over 6'	V.F.	12	$100.00	$1,200.00
13	Standard manhole adjustment	V.F.	0	$200.00	$0.00
14	Standard manhole frame and cover	EA.	4	$300.00	$1,200.00
15	Standard manhole, water tight frame and cover	EA.	0	$500.00	$0.00
16	Utility stream crossing	EA.	0	$15.00	$0.00
17	Existing M.H. connections	EA.	0	$500.00	$0.00
18	Water service main, 8" diameter PVC	L.F.	740	$20.00	$14,800.00
19	Water service main, 8" diameter PVC	L.F.	650	$10.00	$6,500.00
20	Waterman thrust restraint	L.S.	1	$1,000.00	$1,000.00
21	Waterman fittings	L.S.	1	$1,500.00	$1,500.00
22					$0.00
23					$0.00
24					$0.00
25					$0.00
26					$0.00
27					$0.00
28					$0.00
29					$0.00
30					$0.00
31					$0.00
32					$0.00
33					$0.00
34					$0.00
35					$0.00
36					$0.00
37					$0.00
38					$0.00
39					$0.00
40					$0.00
41					$0.00
42					$0.00
43					$0.00
				TOTAL COST	**$101,190.00**

APPENDIX G

Developer's Agreement

APPENDIX G

BUFFALO VALLEY ESTATES
SUBDIVISION/LAND DEVELOPMENT
IMPROVEMENTS GUARANTY AGREEMENT

THIS AGREEMENT made this _____ day of _____, 20___, by and between the **COUNTY OF UNION COUNTY** ("the County") Union County Courthouse, South Second and St. Louis Streets, Lewisburg, Union County, Pennsylvania 17837;

AND

MIFFLINBURG BANK AND TRUST COMPANY ("the Bank"), of 250 East Chestnut Street, Mifflinburg, Union County, Pennsylvania 17844; and

DANIEL C. KENTON ("the Owner") of RR 3, Box 41, Mifflinburg, Union County, Pennsylvania 17844; and

SIMON O. BOONE and RUTH L. BOONE ("the Developers"), of RR 2, Box 10 Millmont, Union County, Pennsylvania, 17845.

BACKGROUND

I. The Owner owns land in West Buffalo Township, Union County, Pennsylvania, known as Buffalo Valley Estates. A plan of Buffalo Valley Estates, Phase I by Alexander Smith, Registered Surveyor No. 14326-F, of Smith Et al Engineering, is of record in Union County Plat Book 14 and Page 29. Phase I of Buffalo Valley Estates has been approved and developed. The Owner desires to sell to the Developers, Phase II of Buffalo Valley Estates.

A. The Owner and Developer have submitted to the County, by and through the Union County Planning Commission, a plan and application for a Subdivision Plan located in West Buffalo Township. The Commission approved the Preliminary Plan of Phase II on March 09, 2001.

II. Section 509 of the Pennsylvania Municipalities Planning Code ("the Code"), Act 247 of 1968, as amended, 53 P.S. § 10509, and the County Ordinances prohibit final approval of any land development plans until all improvements as required by the County Subdivision and Land Development Ordinance and all improvements as set forth on the Subdivision/Land Development plan have been installed.

III. Section 509 of the Code does permit the final plan approval of a subdivision or land development whenever financial security in an amount sufficient to cover the costs of all required improvements is deposited with the County.

IV. The Owners desire to begin development as soon as practicable in accordance with the subdivision and land development ordinance of the County of Union ("County Ordinances").

V. The parties hereto desire to enter into an agreement setting forth the responsibilities of each to facilitate the approval and implementation of the approved Land Development and the installation of improvements required.

AGREEMENT

NOW, THEREFORE, in consideration of the Final Subdivision/Land Development approval by County of the Subdivision/Land Development plan of **BUFFALO VALLEY ESTATES PHASE II,** in West Buffalo Township, submitted by Developer, and in an effort to protect and promote the public health, safety and general welfare of the community, the parties hereto, intending to be legally bound, do hereby agree as follows:

1. **Estimated Cost of Improvements** - The Developer has received and provided the County an estimated cost of improvements certified by the developers professional engineer for the completion of all improvements shown on the approved subdivision plan of Phase II of Buffalo Valley Estates as required by the County Ordinances ("the Required Improvements"). True and correct copies of the estimates, designated as Exhibit A, are attached to and made a part of this Agreement.

2. **Final Plan Approval** - The subdivision plan of Phase II of Buffalo Valley Estates prepared by Smith Et al Engineering, submitted by the Owner and the Developer, and preliminarily approved by the County, is incorporated here by this reference. A condition of final plan approval of Phase II of Buffalo Valley Estates shall be the execution of this Agreement, and after final plan approval is granted, the Owner is authorized to transfer the land of Phase II of Buffalo Valley Estates to Developers for development.

3. **Designated Financial Guaranty** - As a guaranty of the Developers' completion of all the Required Improvements, the Bank Grants an irrevocable line of credit ("the Credit Line") to the Developers and the County, in an amount which is equal to at least 110% of the cost of completion of the

Required Improvements estimated as of 90-days following the date scheduled for completion by the developer.

4. **County Rights** - Until the Required Improvements are declared acceptable or are deemed approved: (a) the Developers may draw against the Credit Line only with the written approval of the County; (b) every change order on the bids for the Required improvements must be approved in writing by the County; and (c) the County may require the Developer and the Bank to increase the Credit Line from time to time in amounts equal to 110% of any increases in costs caused by the change orders.

5. **Completion of Improvements** - The Developers shall proceed with all the Required Improvements and complete them within one (1) year of the date of this Agreement, unless an extension of time is granted to the Developers by the County upon written request by the Developers.

6. **Inspection and Acceptance of Improvements** - Upon written notice, by certified or registered mail, from the Developers to the County and its engineer that the Required Improvements have been completed, the County within 40 days thereafter, by its respective engineer or qualified consultant, in accordance with Section 510 of the Code, shall make timely inspection of the Required Improvements and shall give the Developers written notice within 15 days after receipt of engineer's report by certified or registered mail, that the Required Improvements are acceptable or the reasons why they are unacceptable and what work or changes are necessary to make them acceptable.

7. **Approval and Release of Liability** - If the Required improvements are acceptable, or if they are deemed approved because of the unexcused failure of the County to comply with applicable time limits: (a) the Developers shall be released forthwith from all liability to the County under the Credit Line, or otherwise, for completion of the Required improvements; (b) the rights of the County under paragraph 4 with respect to the Credit Line shall end immediately; (c) the County when requested by the Developers, shall give written notice to the Bank of the release of the Developers under this paragraph and the termination of the County's rights under paragraph 4; and (d) all obligations of the Bank and the Developers under this Agreement shall be null and void.

8. **Default by Developers** - If the Developer has not completed the Required Improvements within one year of the date of this Agreement, or any extension granted to the Developer by the County, it shall be conclusively presumed that Developer is in default of this Agreement.

9. **Notice of Default** - Upon default of this Agreement, the County shall provide Developers with written notice of default sent to Developers by certified mail.

10. **County Remedies** – If the Developers are in default, the Developers and the Bank authorize the County to draw against the Credit Line to complete the Required Improvements. The power of the County to draw against the Credit Line shall be deemed to be coupled with an interest, and may be exercised as often as may be necessary until the Credit Line is exhausted, or the improvements completed. This credit line shall be irrevocable. The Developers shall be liable for all draws so made and the County shall have no liability whatsoever with respect to them. If the Credit Line is insufficient to complete the Required Improvements, the Developers personally guarantee the completion of the improvements, and authorize the prothonotary or any attorney of any court of record of Pennsylvania or elsewhere to confess judgment against them for the entire cost of completing the Required Improvements.

11. **Compliance with Subdivision and Land Development Ordinance** - Nothing herein shall be constructed in any way to relieve Developers from full and complete compliance with the Subdivision and Land Development Ordinance of Union County, Pennsylvania.

12. **Costs of Services** - Should the County in its sole discretion, determine that the services of persons other than its employees are needed to determine the amount of work completed, the amount of work remaining, the quality of the work or improvements completed, the estimated cost of the work to be completed or of any remedial work needed, the reasonable and necessary costs of said services shall be the responsibility of Developers and paid when requested.

13. **Entry upon Land** - Developer and owner do hereby specifically authorize the County, its agents, employees or independent contractors, upon giving reasonable advance notice to Developer, to enter upon Developer's land for the purpose of making such an inspection as it deems necessary or performing such work as it deems under the terms of this Agreement. Prior to the County performing any such work itself or having the services of others to perform such work under paragraph 10 of this Agreement, County shall provide written notice of default under paragraph 9 .

14. **Binding Effect** - The Agreement shall be binding upon the parties hereto, their heirs, executors, administrators and assigns.

IN WITNESS WHEREOF, each of the parties to this Agreement, intending to be legally bound by it, has caused it to be signed on such party's behalf by a person or persons duly authorized to do so on the day, month, and year first above written.

BUFFALO VALLEY ESTATES
SUBDIVISION/LAND DEVELOPMENT
GUARANTY AGREEMENT

ATTEST:

_____

COUNTY OF UNION

By: _____
Chairman

By: _____
Vice Chairman

By: _____
Secretary

ATTEST:

_____

OWNER

By: _____
Daniel C. Kenton

ATTEST:

_____

DEVELOPERS

By: _____
Simon O. Boone

By: _____
Ruth L. Boone

ATTEST:

_____

BANK

By: _____
W.R. Dell, Vice President

APPENDIX H

Open Space Subdivision/Site Design Principles

APPENDIX H

CONSERVATION SUBDIVISION DESIGN

A Four-Step Process

NATURAL LANDS TRUST, INC.

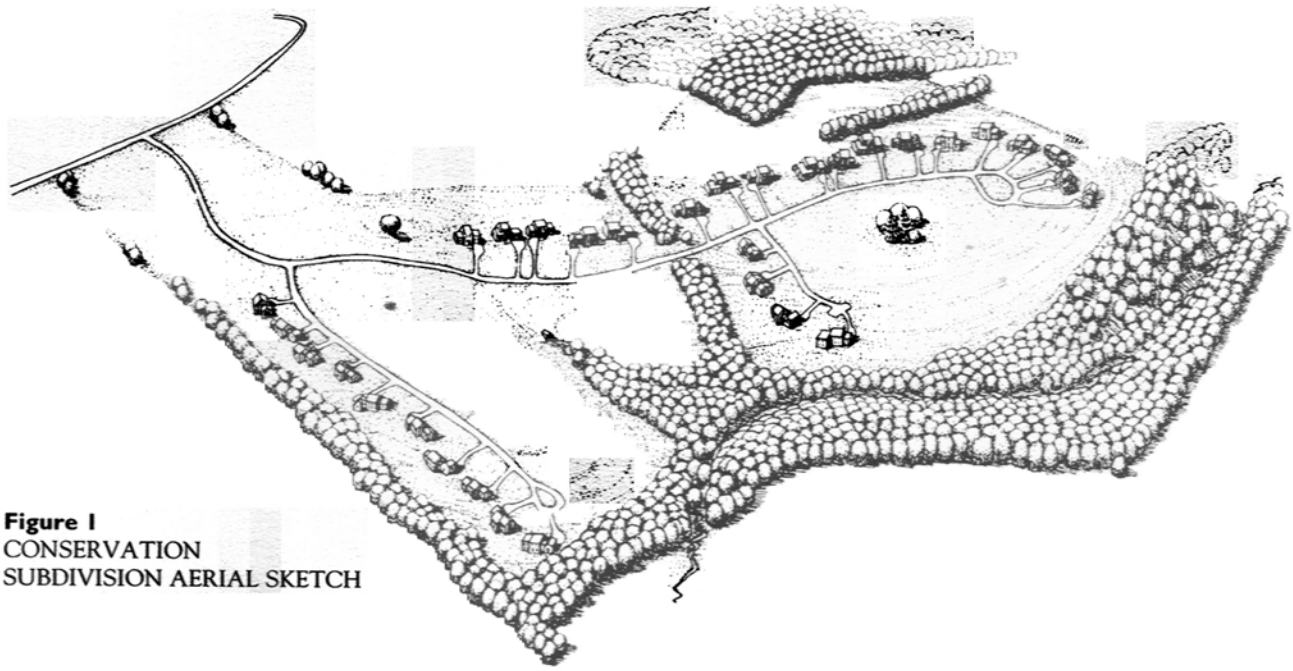


Figure 1
CONSERVATION
SUBDIVISION AERIAL SKETCH

NATURAL LANDS: SPECIAL PLACES IN YOUR COMMUNITY

If you live in a rural area or along the suburban fringe, chances are that you live not far from a stream valley, wildflower meadow, or patch of woods. Chances are also good that none of these special places will be recognizable 20 or 30 years from now, unless they are in a public park, state forest or wildlife refuge, or unless they happen to be protected through a conservation easement held by a conservation organization such as the Natural Lands Trust.

That is because most townships have adopted zoning and subdivision ordinances whose principal purpose is to set rules for the orderly conversion of virtually all land that is dry, flood-free and flat to moderately sloping, into developed properties.

Fortunately, practical alternatives do in fact exist, and this publication describes a straight-forward way to ensure that new subdivisions are designed around the central organizing principle of conservation. This technique can also be used to help communities create an interconnected network of open space through creative approaches to land development.

SPECIAL FEATURES WORTH CONSERVING

The aerial drawing above shows how a partially wooded property could be developed at the full two-acre density allowed under local zoning, following the principles of conservation design. Altogether, two-thirds of this 82-acre parcel could be conserved, including 17 acres of wetlands and steep slopes, and 37 acres of upland without any building constraints.

Although the hedgerows on this site are not visually spectacular, they are capable of providing instant

buffering between backyards in addition to their intrinsic habitat value. The species found there along a typical 300-foot length include white ash, cockspur hawthorn, wild crabapple, black cherry, shadblow serviceberry, hackberry and white oak. These trees provide many perching, feeding and nesting opportunities for a variety of arboreal birds such as indigo buntings, tree swallows and bluebirds.

Below them grows a dense thicket of shrubs including black chokeberry, box huckleberry, pin cherry, American hazelnut, viburnum, elderberry and blackberry bramble which, together with a variety of thick meadow grasses, offer excellent cover for meadow voles and other small rodents, providing abundant food sources for foxes and other carnivores.

The little hollow sheltering the spring house where the stream rises is filled with rue anemone, sweet flag, marsh bellflowers, turtlehead, spearmint, milkweed, silky dogwood and summersweet or sweet pepperbush, and the wildflower meadow in the northwest corner of the property is noted for its wild strawberry, sleepy catchfly, tall anemone thimbleweed and broomsedge. These features can also be seen in Figure 2, showing the site in its pre-development state.

Under normal development circumstances, not one of these features would rate highly enough for it to be designed around and saved, or even noted, as local ordinances typically do not address conservation of such natural areas. However, they provide food and shelter for a myriad of birds, small mammals, amphibians and insects. (For example, milkweed is a critical plant in the life cycle of the Monarch butterfly, a species that is currently suffering markedly from the careless destruction of this kind of habitat, which is almost universally being replaced by tidy suburban lawns.)

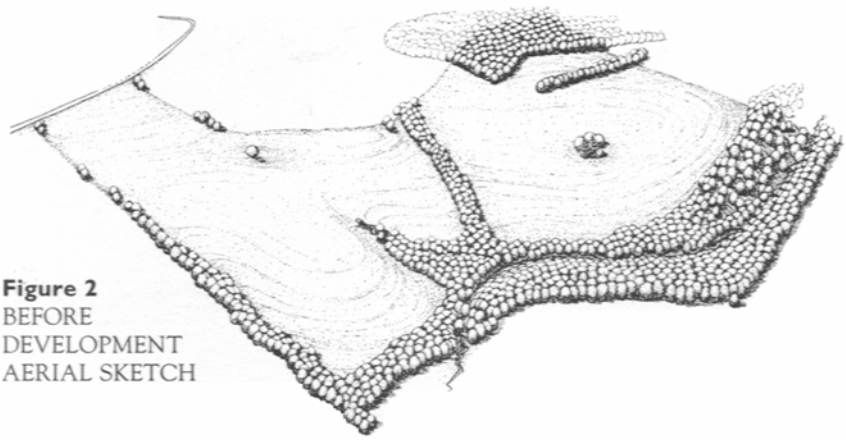


Figure 2
BEFORE DEVELOPMENT AERIAL SKETCH

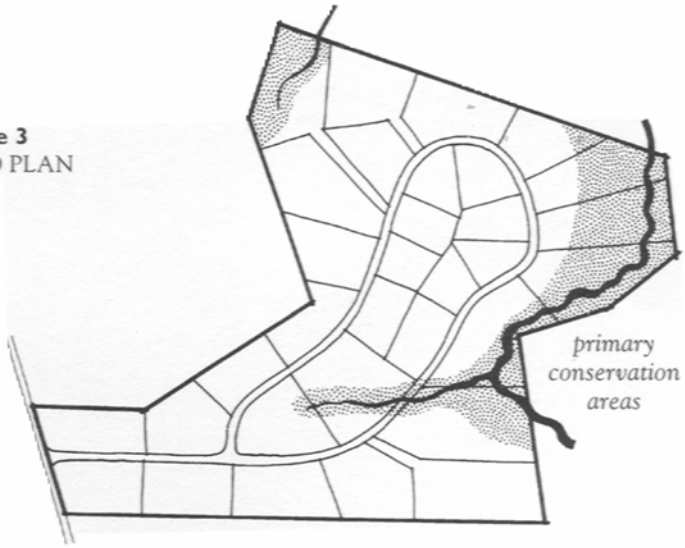


Figure 3
YIELD PLAN

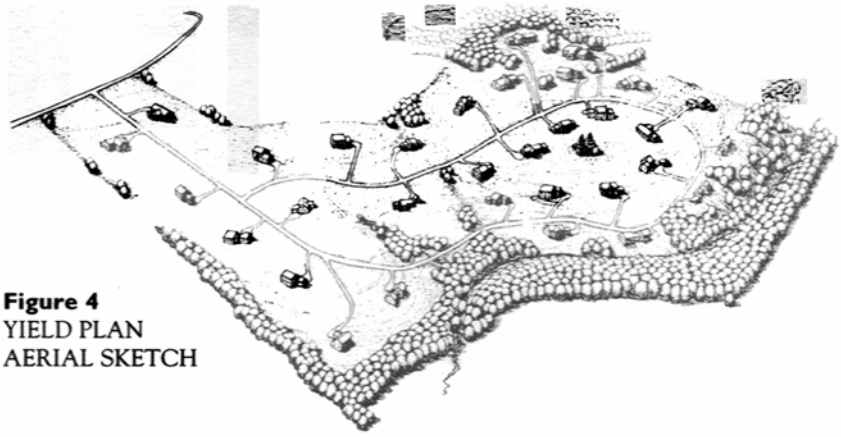


Figure 4
YIELD PLAN AERIAL SKETCH

CONVENTIONAL SUBDIVISION DESIGN

Figures 3 and 4 illustrate the typical kind of "checkerboard" layout that is permitted (sometimes even required) by local zoning and subdivision ordinances. Conventional developments such as this needlessly displace wildlife habitat and convert other natural areas into ecologically diminished suburban yardspace. The same number of houses could just as easily be accommodated onto a smaller portion of the land, not only reducing development costs but also helping to foster a greater sense of community among the new residents by providing them with a more neighborly arrangement of homes. The two-acre lots shown in these drawings are "too large to mow and too small to plow." Meanwhile, many forms of wildlife are driven farther away, and opportunities to take woodland walks or weekend strolls across wildflower meadows simply do not exist, because every acre has been divided into private lawns and yards.

THE CONTEXT

Municipal Planning for Conservation and Development

To broaden land conservation efforts throughout the region, the Natural Lands Trust has for the past three years been working on an approach to revising local zoning and subdivision ordinances that will multiply the options available to landowners, setting higher standards for both the quantity and quality of land that is set aside for permanent conservation.

Network of Conservation Lands

The ultimate goal of these planning efforts is to help communities identify and protect an interconnected network of natural lands woven into the fabric of new development, to assure greener futures for succeeding generations of residents. While traditional conservation methods such as acquisition, easements and "limited development" (involving greatly reduced densities) will continue to play an important role in certain instances, it is likely that the vast majority of undeveloped parcels in our region will ultimately be proposed for full-density residential development in the years to come. It is therefore essential that more conservation-oriented design standards be incorporated into the local land-use ordinances that govern subdivision proposals, so that the majority of new developments will contain a substantial percentage of protected open space.

Municipal Open Space Plans

The site planning principles which the Trust advocates for individual properties that are proposed by their owners for development — principles which are the main subject of this article — are part of a much larger effort to help local officials prepare community-wide open space plans. These plans typically include maps combining a variety of natural resource data with tax parcel boundaries to identify, well in advance of development, broad opportunities for conservation throughout the community.

Ordinance Improvements

After completing these maps and drafting specific planning policies to conserve significant resources, the next step involves helping local officials to update their land-use ordinances. A key provision recommended by the Trust allows municipalities to require that developers take those pre-identified conservation areas into account and design their houselots and streets around them in a respectful manner. In a typical situation, flexible standards for lot size and frontage allow for the full legal density to be achieved on one-third to one-half of the buildable land, leaving the balance in permanent conservation.

Several townships in our region have also taken the further step of requiring that developers group their homes on half or less of their unconstrained land so that upland terrestrial habitat and other ecologically important areas may be maintained

in their natural state. Current regulations in most municipalities protect only unbuildable areas such as wetlands, floodplains, and steep slopes (the so-called "obligatory open space"). Without open space design standards such as advocated by the Trust, most developers would continue to overlook other important conservation possibilities in their subdivisions, fragmenting many kinds of natural lands into individual houselots, rather than designing around them to create undivided conservation areas managed for long-term resource protection.

The kind of resource fragmentation described above is illustrated in Figures 3 and 4 and in the upper part

of Figure 5, showing a typical large-lot subdivision layout that divides all upland and lowland areas on the subject parcel into a checkerboard of houselots and streets. Houses would, of course, be located away from wetlands, floodplains and steep slopes under most current ordinances, but woodlands and meadows would typically be cut up into individual lots and converted to suburban yardspace, precluding any overall management to enhance wildlife habitat or conserve other resource values.

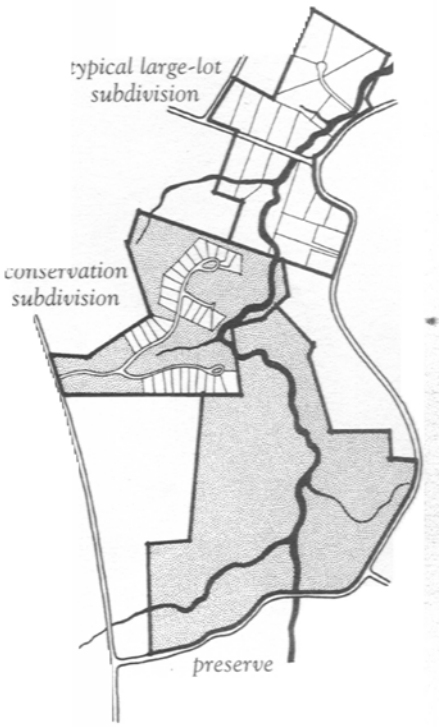


Figure 5
THREE PARCELS ON A STREAM VALLEY

In the majority of cases where complete protection of the land is not possible, new ordinance standards can be adopted to ensure that developers lay out their houselots and streets around the central organizing principle of open space conservation.

Although lots that abut conservation land typically sell more quickly and at premium prices compared with standard lots surrounded by more of the same, many developers lack experience in designing and marketing this kind of alternative, and therefore tend to continue subdividing in the conventional land-consumptive manner.

CONSERVATION SUBDIVISIONS

A new breed of development — known as "conservation subdivisions" — is illustrated in the middle section of Figure 5. In communities where all three controlling documents (the comprehensive plan and the zoning and subdivision ordinances) are coordinated to produce an interconnected network of natural lands — even after the last unprotected property is ultimately developed — subdivisions would typically contain between 50 and 70 percent conservation land. Those areas would be located in broad conformance with a community-wide "Map of Conservation and Development" to ensure that the eased land in each development will connect with similar areas on adjoining parcels.

Conserving a parcel in its entirety — either through fee ownership or holding an easement — as illustrated in the lower example in Figure 5 is, of course, preferable, but may not always be practicable. The Trust's system of preserves is based on this principle, made possible largely through the generosity of conservation-minded landowners and donors. However, neither county open space bond monies, nor funding available from the state's new "Key 93" program, will allow any single municipality to protect more than a handful of properties in this manner. The balance of this article describes a practical approach for designing full-density subdivisions around conservation principles, in accordance with new planning policies and ordinance standards developed by the Trust to help communities implement their visions of a greener future for the generations that will follow our own.

Designing Around Conservation Features: The Four-Step Process

Until now, the zoning regulations in most communities have established a "one size fits all" approach to regulating lot sizes in each of their various districts, essentially creating a single standard size for new houselots which frequently results in "checkerboard" layouts of nearly identical lots covering the entire parcel. This result is illustrated in Figures 3 and 4, which for the purposes of the following example serves one useful purpose — as a "Yield Plan" demonstrating the legal development potential of the site (in this case, 32 lots could be created).

To provide more options for landowners (and developers) who might want to conserve their site's most special features, while at the same time receiving an acceptable economic return on their property, the Trust has drafted model zoning regulations that offer a wide range of density options (from rural estate lots to village designs), each of which is related to specific standards for open space conservation. This approach is known as "multi-tiered zoning."

In addition, our staff has been drafting new standards for designing residential subdivisions and improved procedures for governing the process in which these development proposals are reviewed. The basic idea is to set up an approach in which land conservation becomes the central organizing principle around which houselots and streets are sensitively designed. As a general rule, this approach would conserve at least half the land area of each site, in addition to the wetlands, floodplains and steep slopes that are typically

protected under existing codes. This approach has been drafted to work well at both reduced density and full density levels, so that the principle of landowner equity is respected.

Among the procedures recommended by the Trust is the preparation of an "Existing Features and Site Analysis Plan." (In this article these features are all shown on Figures 6 and 7.) This critical element identifies all the special characteristics of the subject property, from unbuildable areas such as wetlands, floodplains and steep slopes, to other kinds of land that are developable but which contain certain features that merit the small amount of additional effort needed for their conservation. Such features might include mature or healthy and diverse woodlands, wildlife habitats critical for breeding or feeding, hedgerows and prime farmland, scenic views into and out of the site, and historic buildings in their rural context.

Production of the "Existing Features and Site Analysis Plan" sets the stage for beginning the four-step design process.

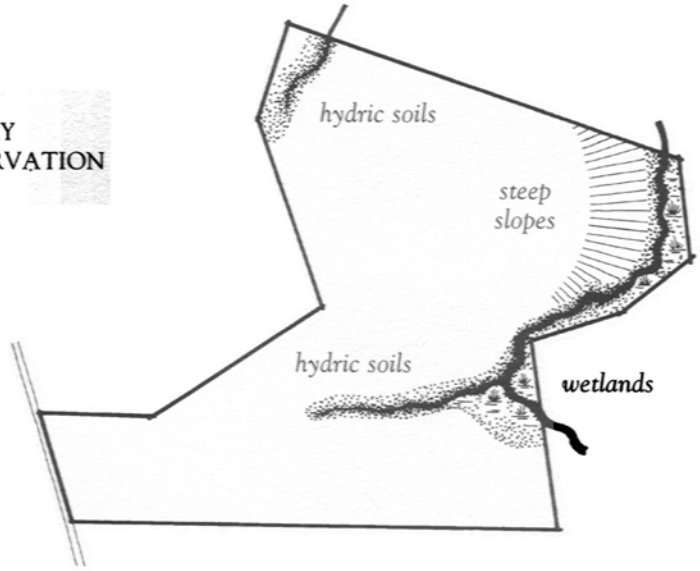


Figure 6
PRIMARY CONSERVATION AREAS

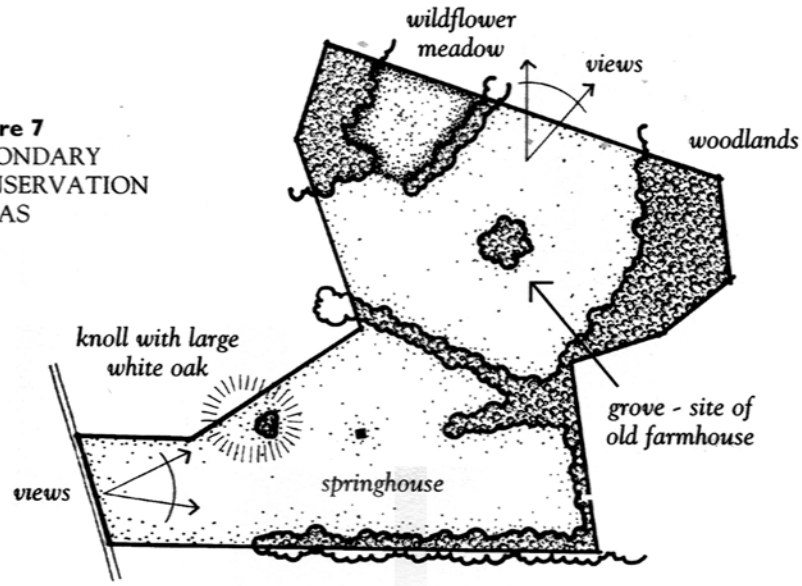


Figure 7
SECONDARY CONSERVATION AREAS

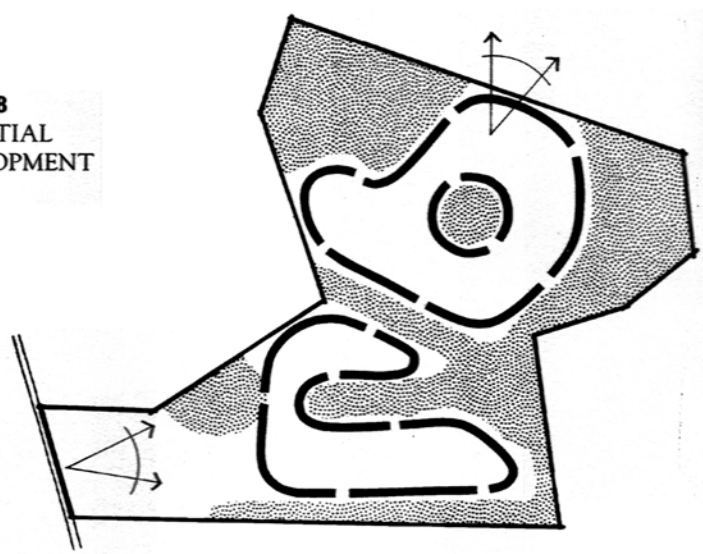


Figure 8
POTENTIAL DEVELOPMENT AREAS

Step One: Identifying Conservation Areas

The first step, which involves the identification of open space worthy of preservation, is divided into two parts: Primary Conservation Areas (Figure 6) limited to regulatory wetlands, floodplains and steep slopes, and Secondary Conservation Areas (Figure 7) including those unprotected elements of the natural and cultural landscape that deserve to be spared from clearing, grading, and development.

The act of delineating conservation areas also defines "Potential Development Areas," which occupy the balance of the site (Figure 8). This completes the first step and virtually ensures that the site's fundamental integrity will be protected, regardless of the actual configuration of houselots and streets that

will follow. In other words, once the "big picture" of conservation has been brought into focus, the rest of the design process essentially involves only lesser details. Those details, which are of critical importance to developers, realtors and future residents, are addressed during the last three steps. In Figure 7, those features include hedgerows, wildflower meadows, a large white oak tree, a grove of trees on the site of the original farmhouse and rural roads into the property from the township road.

Step Two: Locating House Sites

The second step involves locating the approximate sites of individual houses, which for marketing and quality-of-life reasons should be placed at a respectful proximity to the conservation areas, with homes backing up to woodlands or hedgerows for privacy, fronting onto a central common or wildflower meadow, or enjoying long views across open fields or boggy areas (Figure 9). In a full-density plan, the number of house sites will be the same as that shown on the "Yield Plan" (32 in this example). Other options would include voluntarily reducing that density to create a "limited development" plan, which under certain circumstances might produce the same economic payoff for the landowner.

Step Three: Aligning Streets and Trails

The third step consists of tracing a logical alignment for local streets to access the 32 homes and for informal footpaths to connect various parts of the neighborhood, making it easier for residents to enjoy walking through the open space, observing seasonal changes in the landscape and possibly meeting other folks who live at the other end of the subdivision (Figure 10).

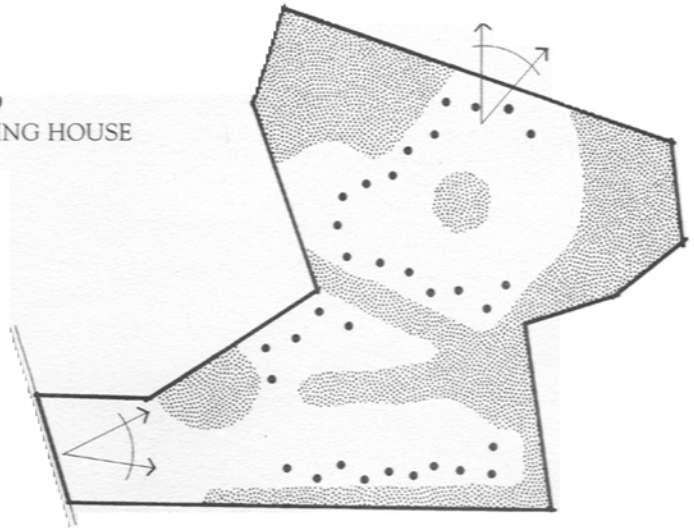


Figure 9
LOCATING HOUSE SITES

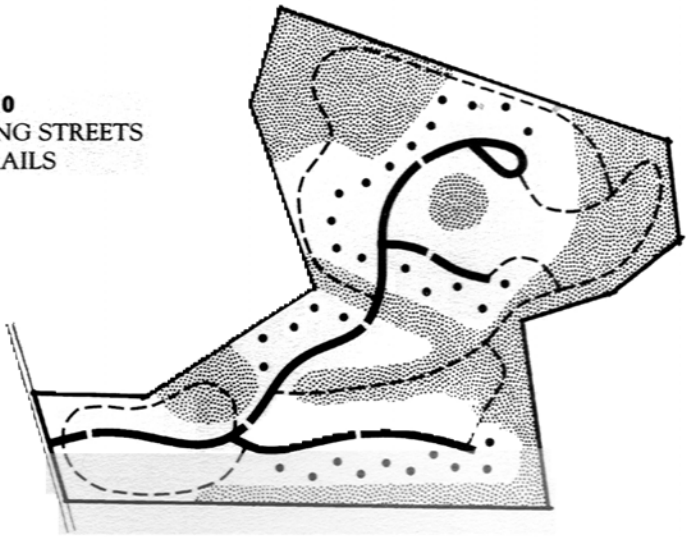


Figure 10
ALIGNING STREETS AND TRAILS

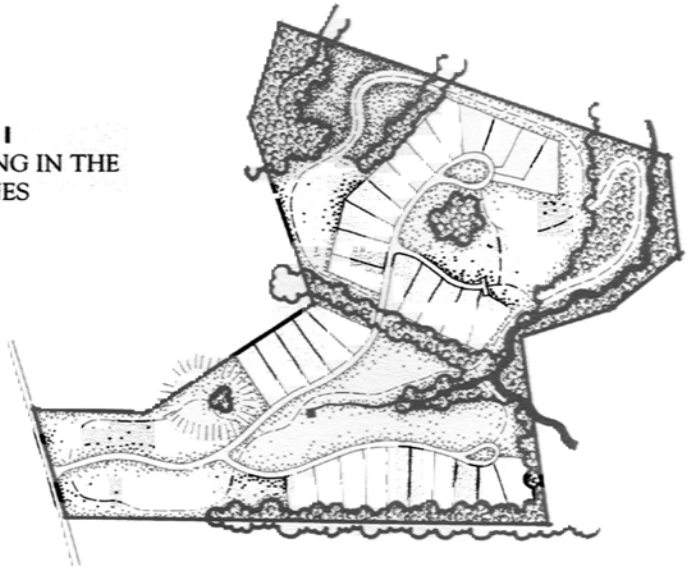


Figure 11
DRAWING IN THE LOT LINES

Step Four: Drawing in the Lot Lines

The final step is simply a matter of drawing in the lot lines, perhaps the least important part of the process. Successful developers of open space subdivisions know that most buyers prefer homes in attractive park-like settings, and that views of protected open space enable them to sell lots or houses faster and at premium prices (Figures 1 and 11). Such homes also tend to appreciate more in value, compared with those on lots in standard "cookie-cutter" developments offering no views or nearby open space.

SUMMING UP

Advantages for Municipalities, Developers, and Residents

Perhaps the most significant aspect of this design process is the way that it can help communities build an interconnected network of conservation areas. As described at the beginning of this publication, township-wide open space plans, containing "Maps of Conservation and Development", can pre-identify land to be conserved in each new residential subdivision. Of course, such plans must be supplemented by amendments to zoning and subdivision ordinances to ensure that developers design around the natural features on their property and place them into undivided conservation areas rather than allowing them to be converted to suburban lawns and streets. Conservation planning staff at the Trust have worked with a number of municipalities in our four-county region to implement such improvements and have acted as advisors to many landowners and developers.

These kinds of designs are finding a ready market among homebuyers, who are placing greater emphasis on "quality of life" issues when purchasing new houses. In our area several developers have recognized the value of open space conservation, using it successfully as a marketing tool in some of their recent subdivisions. Long vistas across 137 acres of permanently preserved fields, plus 76 acres of protected woodlands, have helped make one 418-acre subdivision in lower Bucks the fastest selling development in its price range in the County. Similarly, preservation of nearly half the woodlands at another development in southern Delaware County, has boosted sales to prospective purchasers, each of whom receives a handsome trail brochure when touring the model homes in that project.

Confirming what Trust staff had long suspected, an informal survey by *The Philadelphia Inquirer* has revealed that as many as four out of five house buyers in two new golf course developments in Montgomery County have little or no interest in playing golf. They have chosen homes there primarily because they prefer to dwell in park-like settings, ones that offer attractive views from their windows and pleasant places in which to stroll. Developers find that lots abutting or looking onto open space sell faster — and at premium prices — compared with lots that are surrounded by more of the same. The good news for everyone is that huge sums need no longer be spent clearing natural land to create artificial open space in the form of golf courses. Developers who let Nature alone can reap the same benefits at minimal cost — and with minimal disturbance to woodlands, meadows and fields.

Figure 12
A view across a protected meadow toward a group of new homes built at the edge of the woods. This view, from a township road, typifies the pattern of conservation and development represented by the examples illustrated in **Designing Open Space Subdivisions**.

TOWARD A NEW LAND ETHIC

The idea of a "land ethic" represents an evolution from the ancient Judeo-Christian ethics that govern relations among individuals and between individuals and society. Sixty years ago, Aldo Leopold suggested a third kind of ethic to deal with man's relation to the land.

As Leopold, who founded the discipline of game management at the University of Wisconsin, observed in 1933, "There is yet no ethic dealing with man's relation with the land and the animals and plants which grow upon it... The land-relation is still strictly economic, entailing privileges but not obligations."

The idea of a land ethic is probably very much alive in the minds and hearts of many rural residents, including many landowners. What farmer, for example, would truly prefer the noise of traffic or the hum of air conditioners over the sound of birdsong or the rustle of wind through the leaves? Who would prefer to see rooftops defining the horizon line instead of treetops, or parking lots instead of fields and meadows?

In Leopold's time there were few financial alternatives for those who depended upon the value of their land to ease their retirement years, or to pay for health care costs. Today a variety of options exist, allowing landowners to realize the economic value of their farms and woodlands without destroying the wildlife and ecological values of their properties. The 150-page handbook described in this brief publication (*Designing Open Space Subdivisions*) illustrates one of these options, one that could be used along with others to strike a better balance between development and natural areas conservation.

Among those other options are the purchase of development rights, the transfer of development rights, "landowner compacts" involving density shifts among contiguous parcels, bargain sales to land conservancies, and "limited development". Of the entire range of alternatives, it is likely that the approach described in our new handbook offers the greatest potential because it does not require public expenditure, does not depend upon landowner generosity, does not need a special "high end" market, does not involve complicated regulations for transferring rights to other sites and does not depend upon the cooperation of two or more adjoining landowners.

This is not to imply that the other options should not be actively encouraged in your community, but rather to place those techniques in a realistic perspective as supporting elements in *an areawide program of conservation and development that is most logically based upon the flexibility and advantages offered by "conservation subdivision design", within a comprehensive planning framework as delineated on a township-wide "Map of Conservtion and Development"*.

The great advantage of some of those other options is that many of them preserve parcels in their entirety, although they are implemented less frequently. The great advantage of open space planning and conservation design is that when they are institutionalized into local zoning and subdivision ordinances, they will be used on a day-to-day basis to protect significant percentages of land in each new subdivision that is proposed.

Further information about this approach is contained in Natural Lands Trust's newest publication, ***Designing Open Space Subdivisions****. Available for $25.00 from the Trust's offices, this comprehensive 150-page handbook is written in non-technical language and illustrates each step of the design process for six different sites. Model ordinance language is also provided in an extensive appendix, which also describes the economic benefits of conserving natural lands in new subdivisions.*

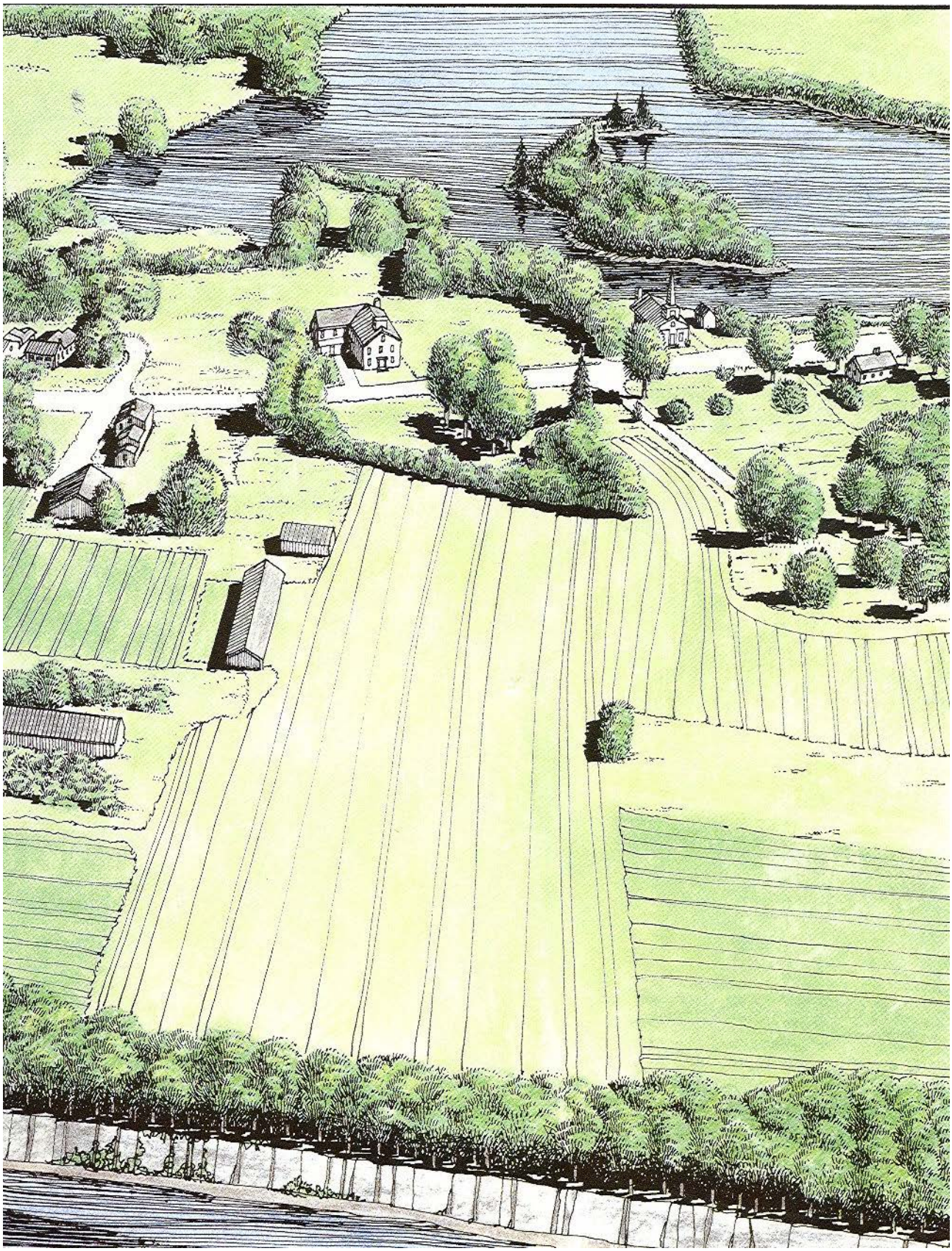
Production of the handbook was made possible by grants from the W. Alton Jones Foundation and the U.S. Environmental Protection Agency.

NATURAL LANDS TRUST

Natural Lands Trust is a regional land trust dedicated to working with people to conserve land in the Delaware Valley and other nearby areas of environmental concern by acquiring and managing preserve properties, accepting conservation easements, and encouraging and supporting the conservation efforts of landowners, communities, government agencies, and non-profit organizations.

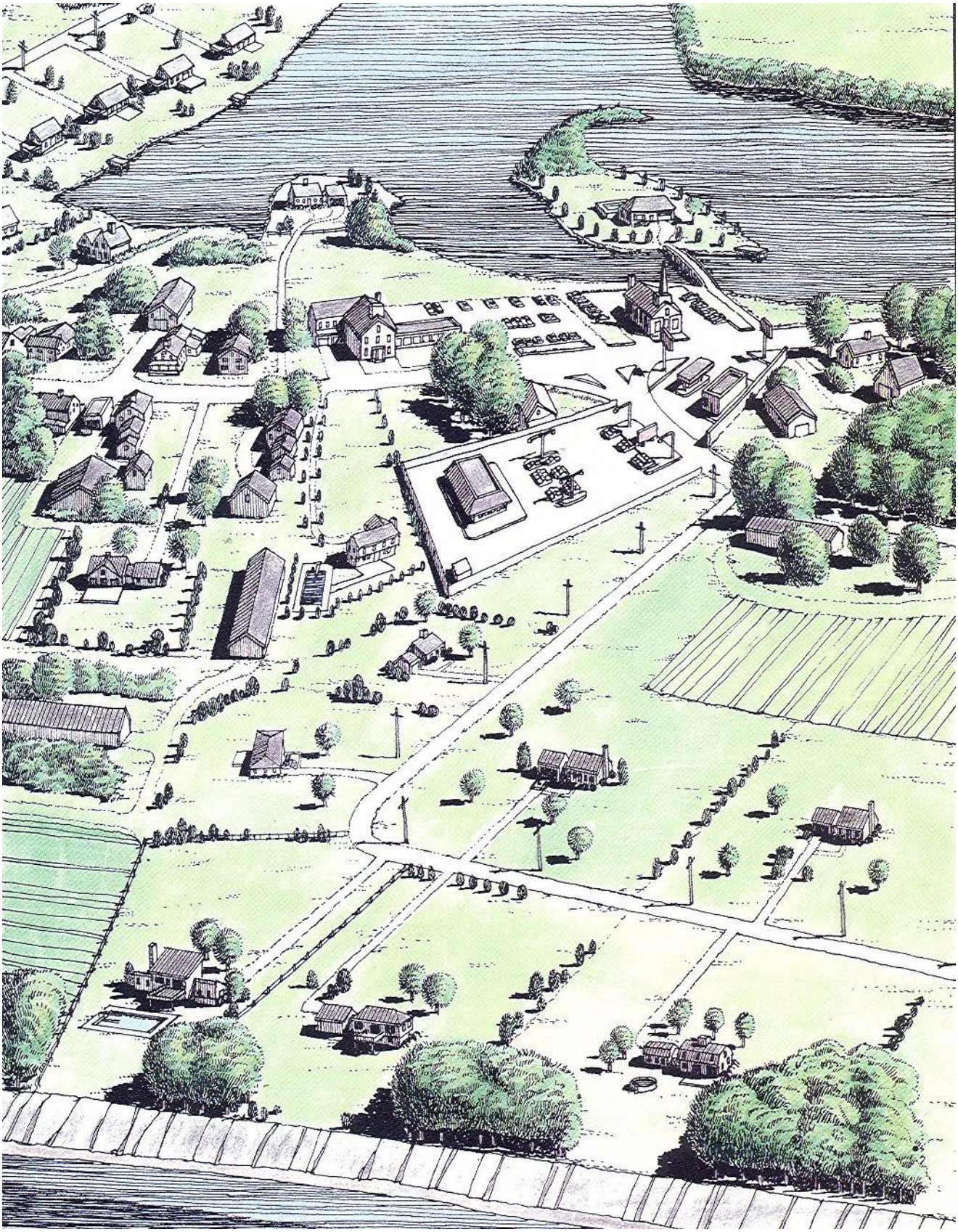
HILDACY FARM
1031 PALMERS MILL ROAD
MEDIA, PENNSYLVANIA 19063
TEL: (610) 353-5587
FAX: (610) 353-0517

Site A - Before Development



Graphics from *Dealing with Change in the Connecticut River Valley:A Design Manual for Conservation and Development*, 5th Printing, 1993. Yaro, et al.. Used by permission courtesy of the Center for Rural Massachusetts, University of Massachusetts Amherst

Site A – After Conventional Development



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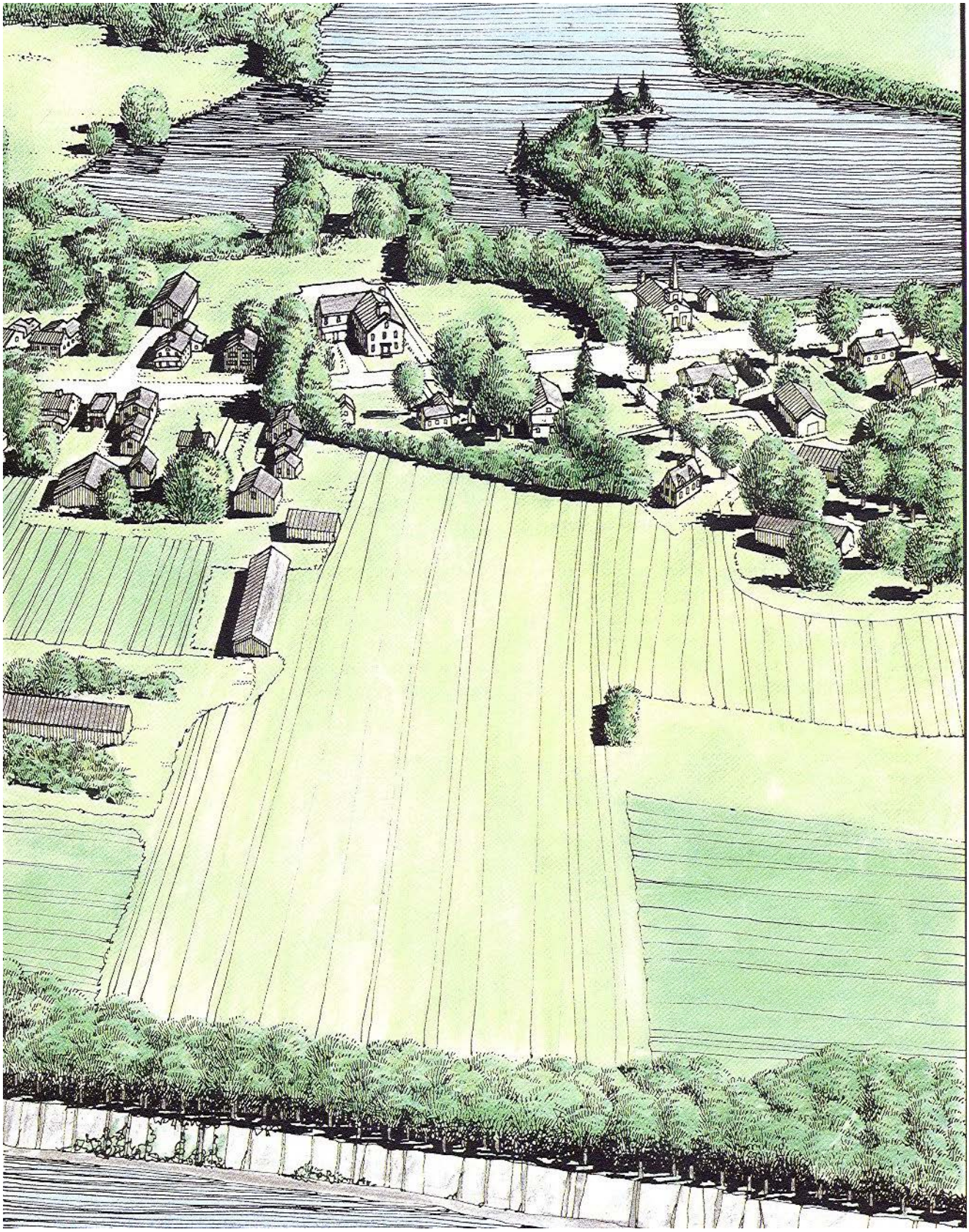
Site A – After Creative Development



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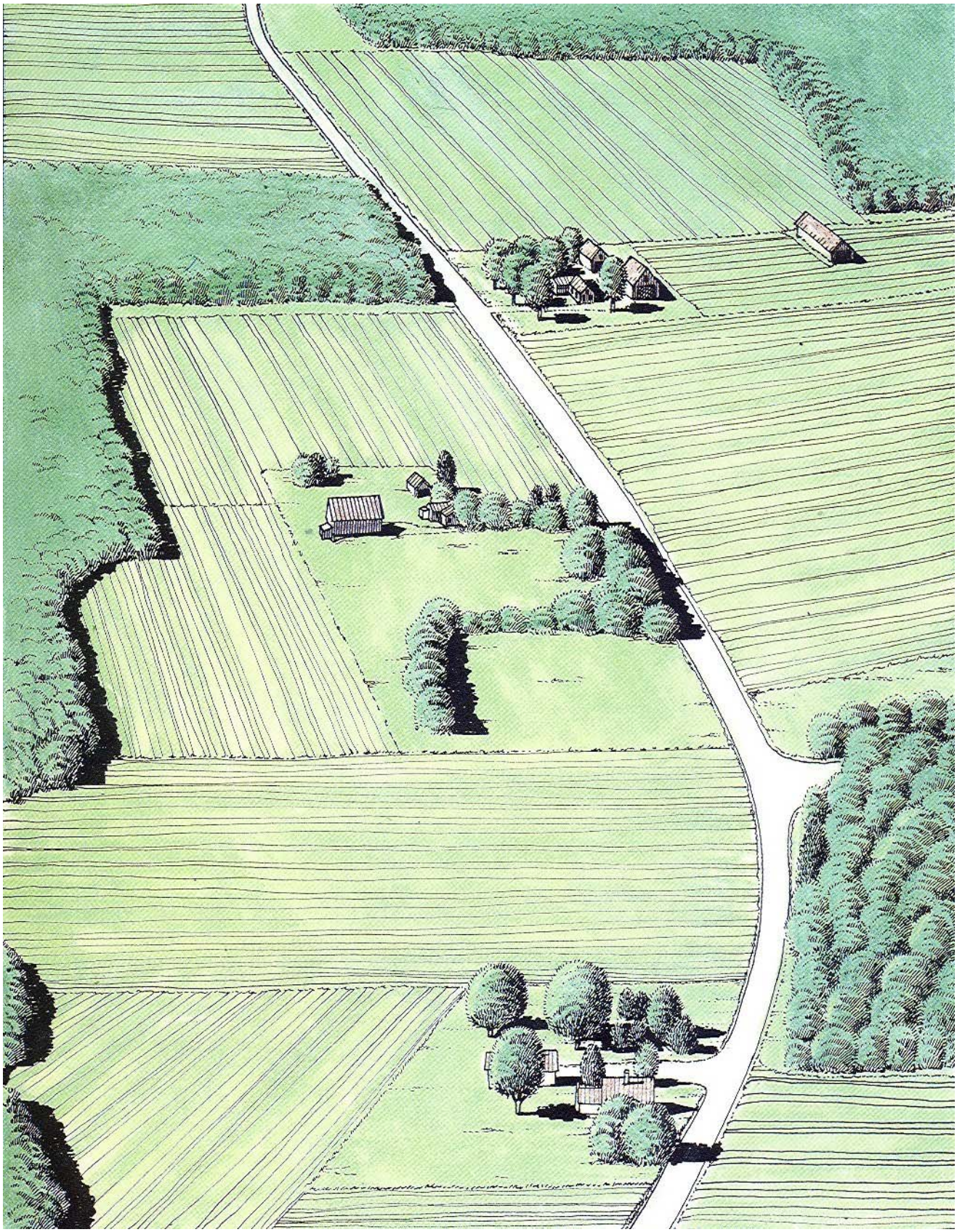
Site B – Before Development



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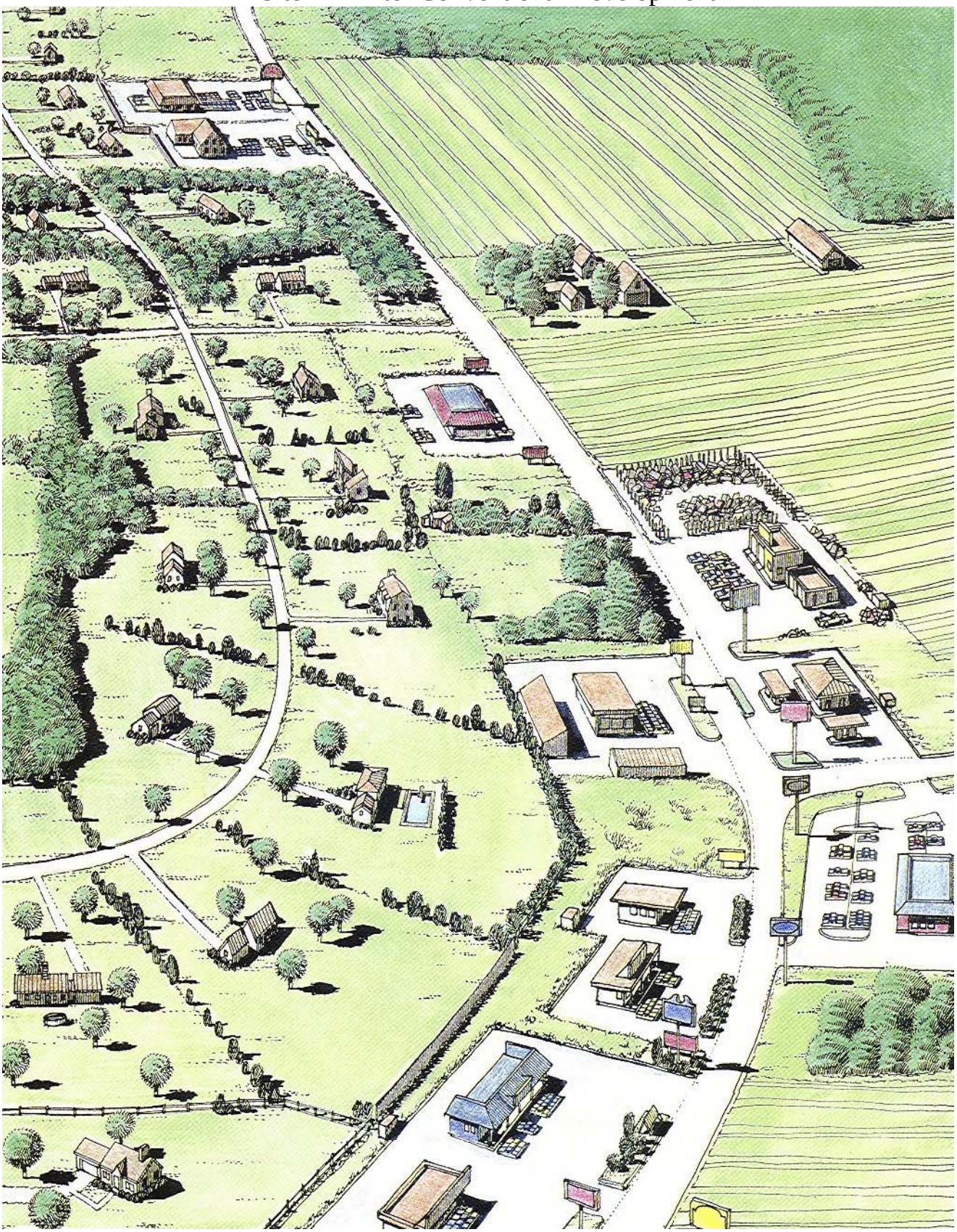
Site B – After Conventional Development



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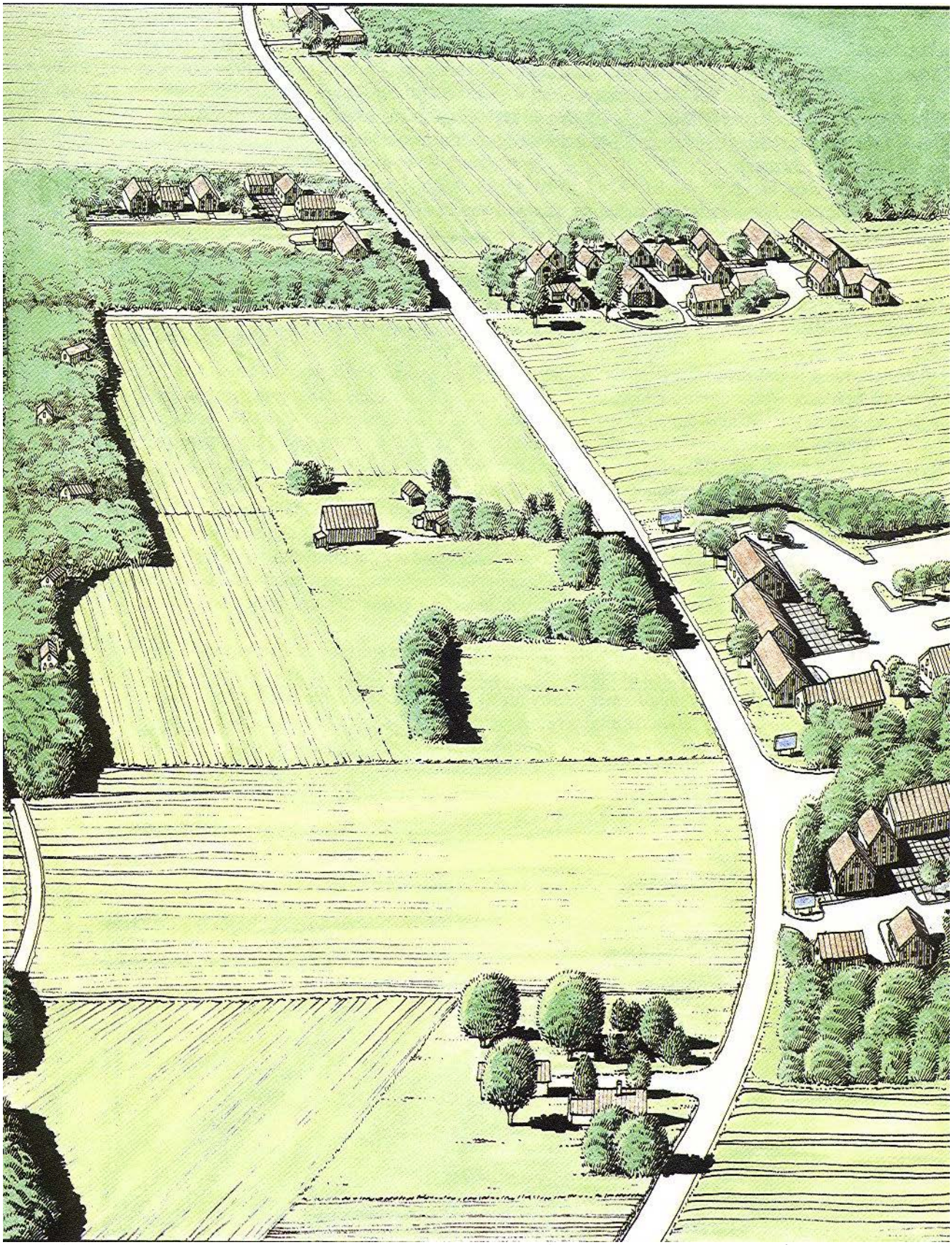
Used by permission courtesy of the Center for Rural Massachusetts, University of Massachusetts Amherst

Site B – After Creative Development



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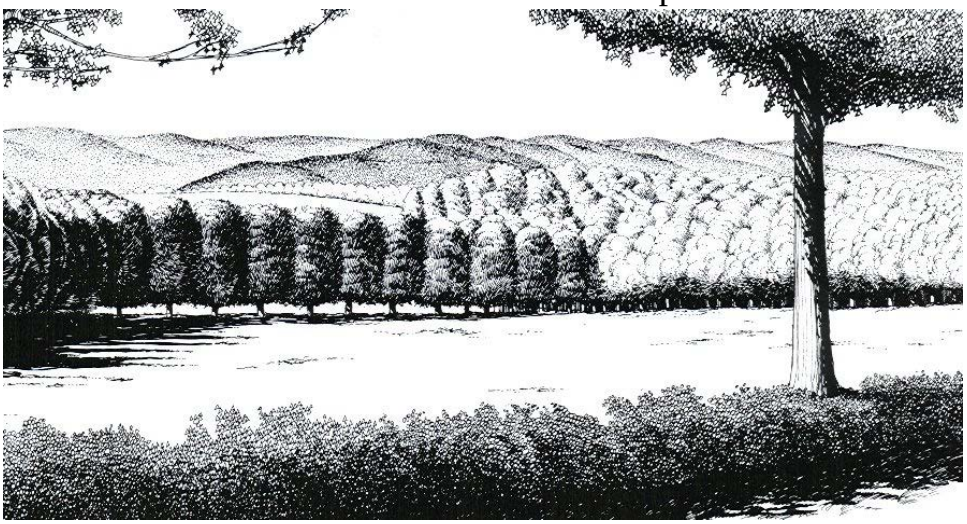
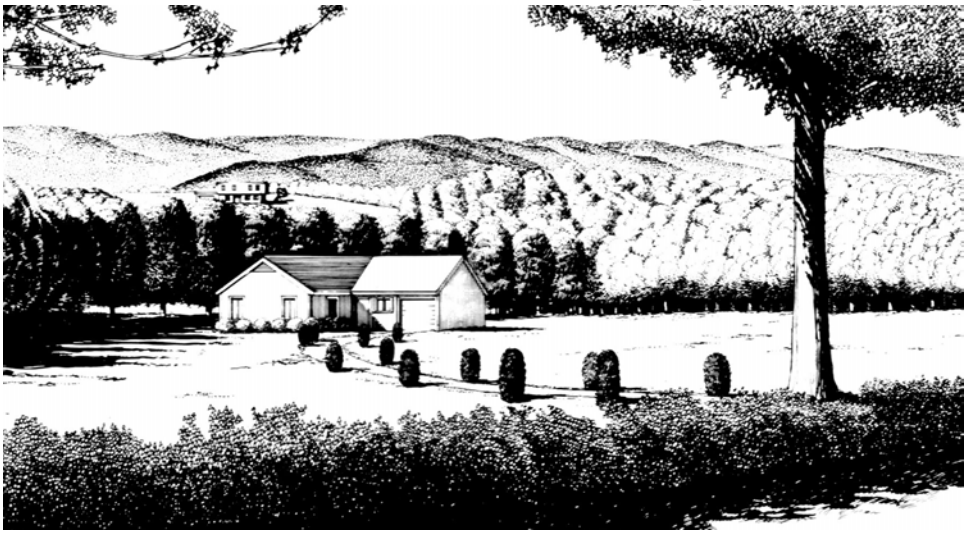
Ground View Before Development



Ground View Conventional Development



Ground View After Creative Development

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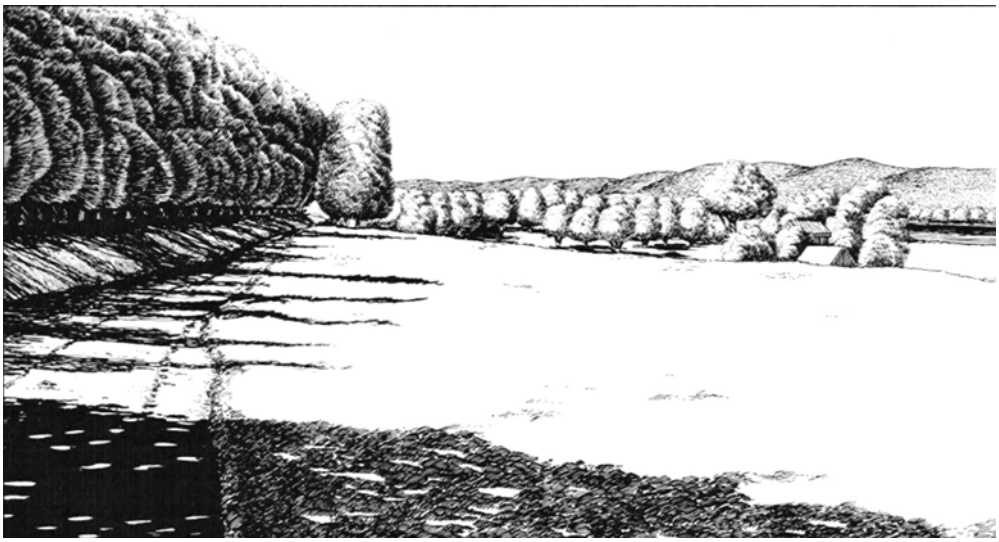
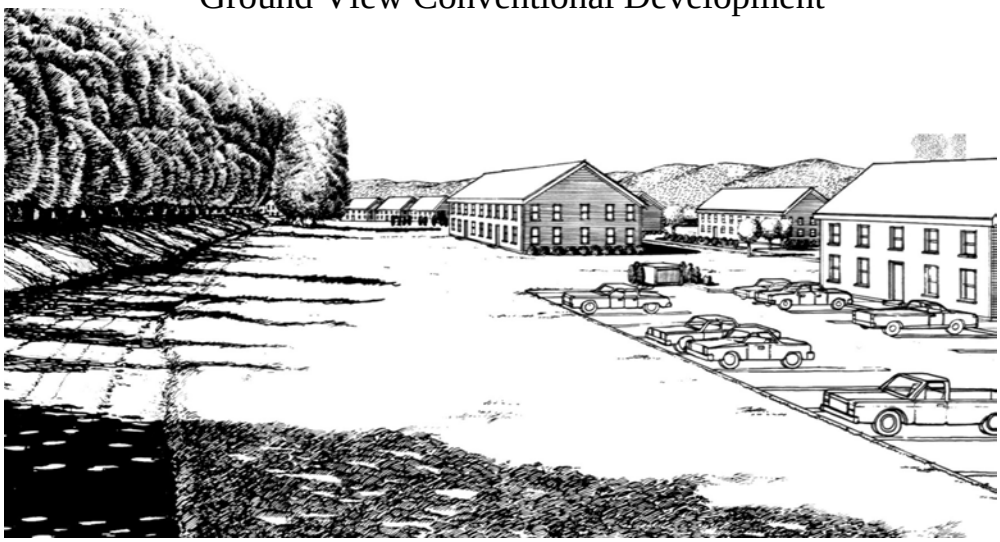
Ground View Before Development



Ground View Conventional Development



Ground View After Creative Development

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APPENDIX I

Private Right-of-Way Agreement

APPENDIX I

PRIVATE RIGHT OF WAY AGREEMENT

The following contains a checklist of provisions that shall be incorporated into a private right-of-way agreement.

☐ 1. Type of Instrument – Deed of Easement or Agreement for Easement.

☐ 2. Date

☐ 3. Parties – All property owners affected.

- Joining spouses, if any – heirs
- Corporations – designate and state of incorporation
- Partnership – the partners and partner designation

☐ 4. Consideration – Amount paid for easement if any.

☐ 5. Grant

- Personal to parties involved
- Binding on heirs and assigns
- Covenant running with the land

☐ 6. Description

- Political subdivision where located
- Metes and bounds
- Courses and distances
- Monuments, adjoiners
- Recorded map or plan
- Surveys
- Quantity

☐ 7. Recitals – Origin of the parties' title entering agreement or deed of easement.

☐ 8. Subject Matters

- Purpose of right-of-way (access and utilities)
- Width (berm, cuts, slopes, culverts)
- Drainage
- Maintenance, repair
- Cleaning
- Limitations on use
- Liability of parties or land for subject matters agreed upon- Damages

APPENDIX J

Sight Distance Form

APPENDIX J

M-950S (3-04)
PENNDOT

DRIVEWAY SIGHT DISTANCE MEASUREMENTS

(FOR LOCAL ROADS, USE PENNDOT PUB 70)

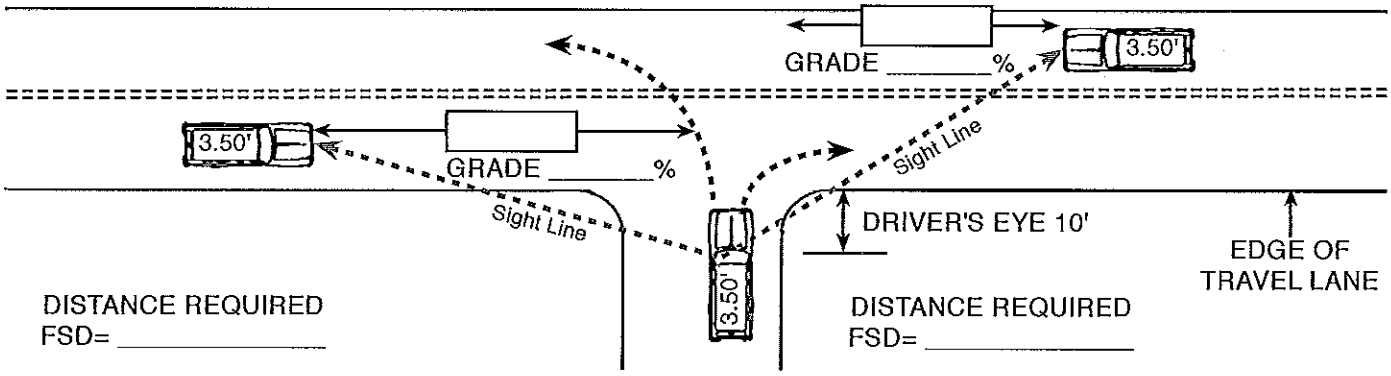
APPLICANT_____ APPLICATION NO._____

S.R._____ SEG._____ OFFSET_____ LEGAL SPEED LIMIT_____

MEASURED BY_____ DATE _____

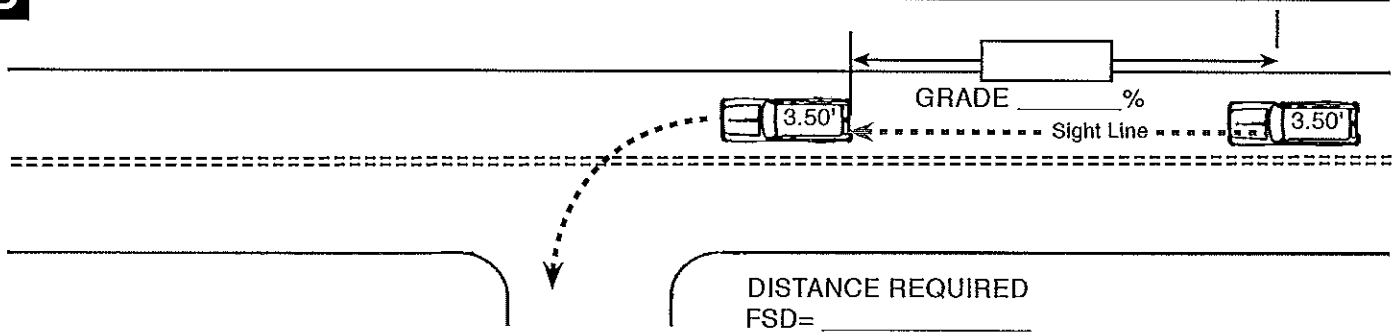
FOR DEPARTMENT USE ONLY: Safe-Running Speed _____ 85th Percentile Speed _____

A



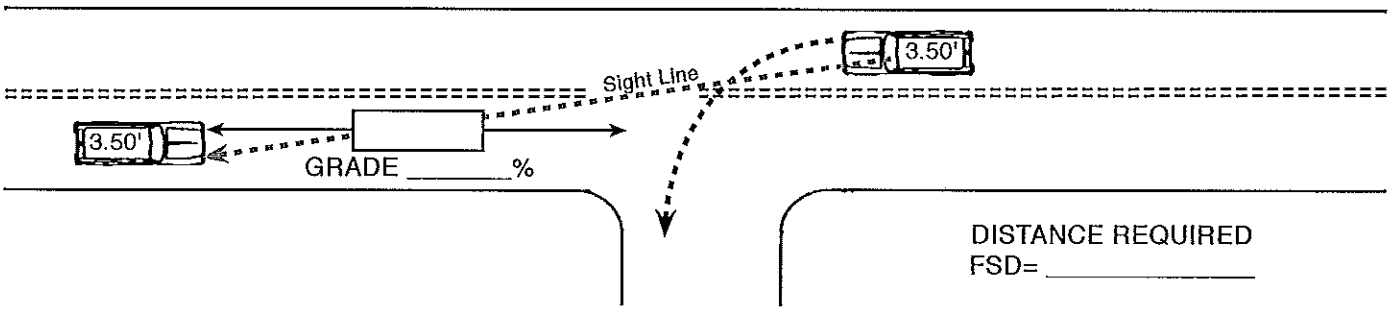
THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER AT A DRIVEWAY LOCATION CAN CONTINUOUSLY SEE ANOTHER VEHICLE APPROACHING ON THE ROADWAY.

B



THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER ON THE ROADWAY CAN CONTINUOUSLY SEE THE REAR OF A VEHICLE WHICH IS LOCATED IN THE DRIVER'S TRAVEL LANE AND WHICH IS POSITIONED TO MAKE A LEFT TURN INTO A DRIVEWAY.

C



THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER OF A VEHICLE INTENDING TO MAKE A LEFT TURN INTO A DRIVEWAY CAN CONTINUOUSLY SEE A VEHICLE APPROACHING FROM THE OPPOSITE DIRECTION.

FORMULA SIGHT DISTANCE TABLE

Speed (V) (Miles Per Hour)	Average Grade (G) (Percent)										
	Use plus grades when approaching vehicle is travelling upgrade.										
	0.0	+1.0	+2.0	+3.0	+4.0	+5.0	+6.0	+7.0	+8.0	+9.0	+10.0
25	147	145	144	143	142	140	139	138	137	136	135
30	196	194	191	189	187	185	183	182	180	178	177
35	249	245	242	239	236	233	231	228	226	224	221
40	314	309	304	299	295	291	287	284	280	277	274
45	383	376	370	364	358	353	348	343	339	334	330
50	462	453	444	436	429	422	415	409	403	397	392
55	538	527	517	508	499	490	482	475	468	461	454
	Use negative grades when approaching vehicle is travelling downgrade.										
	0.0	-1.0	-2.0	-3.0	-4.0	-5.0	-6.0	-7.0	-8.0	-9.0	-10.0
25	147	148	150	151	153	155	157	159	161	164	166
30	196	199	201	204	207	210	214	217	221	226	230
35	249	252	256	260	265	269	275	280	286	292	299
40	314	319	325	331	338	345	352	360	369	379	389
45	383	390	398	406	415	425	435	447	459	472	487
50	462	471	481	492	504	517	531	546	563	581	600
55	538	550	562	576	590	606	622	641	661	682	706

APPENDIX K

Modification Request Form

APPENDIX K

MODIFICATION REQUEST FORM

SECTION I - GENERAL INFORMATION

Applicant_____ Date_____

Address_____ Plan Title_____

_____ Phone_____

_____ Signature_____

SECTION II - MODIFICATION REOUEST

Ordinance Section Requested to be Modified_____

Specific Modification Request_____

_____

Applicant's Justification for Modification_____

_____

_____

_____

_____

Is this the minimum modification necessary? ☐ Yes ☐ No

SECTION III - STAFF AND/OR SUBDIVISION REVIEW COMMITEE RECOMMENDATION

Reviewed by: ☐ Staff ☐ Review Committee

Date of Review_____ Staff Reviewer_____

Is literal compliance with the mandatory Ordinance provision unreasonable or cause unique and undue hardship as it applies to this property? ☐ Yes ☐ No

Is the need for the modification a self-created hardship? ☐ Yes ☐ No

Will the granting of the modification detract from the character of the surrounding area? ☐ Yes ☐ No

Will granting of the modification have the effect of nullifying the intent and purpose of the ordinance or be contrary to the public interest? ☐ Yes ☐ No

Is the modification requested the minimum necessary? ☐ Yes ☐ No

Can an alternative standard be demonstrated to provide equal or better results? ☐ Yes ☐ No

Recommendation: ☐ Approval ☐ Denial

Reason(s) for Approval/Denial_____

_____

_____

_____

_____

SECTION IV - PLANNING COMMISSION ACTION

Date Action Taken_____

Action Taken: ☐ Modification Approved ☐ Modification Denied Vote_____

Reasons for Approval/Denial_____

_____

_____

_____

_____

_____

SECTION V - ADDITIONAL COMMENTS

APPENDIX L

Landscaping & Buffer Yard Calculation Form

APPENDIX L

LANDSCAPING & BUFFER CALCULATION FORM

Step A: Determine Base Number of Plantings

Site Size: _____ (in acres)	x 12	_____	Deciduous Trees	} Option 1*
	x 3	_____	Deciduous Shrubs	
	x 15	_____	Evergreen Trees	} Option 2*
	x 6	_____	Evergreen Shrubs	

*Or select a combination of the above that meets the requirements and intent of the Ordinance.

Step B: Determine Land Use Intensities **Step C: Divide By 100**

	Intensity	*Length*	*/100*
Property Line A:	_____	_____	_____
Property Line B:	_____	_____	_____
Property Line C:	_____	_____	_____
Property Line D:	_____	_____	_____
Property Line E:	_____	_____	_____

Step D: Subtract Land Use Intensity and Multiply by Number Obtained in Step C

	Intensity		*Proposed Intensity*		*x*	*Step C Number*	=	*Factor*
Property Line A:	_____	-	_____	= _____	x	_____	=	_____
Property Line B:	_____	-	_____	= _____	x	_____	=	_____
Property Line C:	_____	-	_____	= _____	x	_____	=	_____
Property Line D:	_____	-	_____	= _____	x	_____	=	_____
Property Line E:	_____	-	_____	= _____	x	_____	=	_____

Step E: Add Figure for Total _____

Step F: Convert to Percentage _____

Step G: Multiply % from Step F by Base Amount of Plantings.

Base Amount		*Step F %*	=	*Additional Plantings*	+	*Base Amount*	=	*Total*
_____	x	_____(%)	=	_____	+	_____	=	_____ (Deciduous Trees)
_____	x	_____(%)	=	_____	+	_____	=	_____ (Deciduous Shrubs)
_____	x	_____(%)	=	_____	+	_____	=	_____ (Evergreen Trees)
_____	x	_____(%)	=	_____	+	_____	=	_____ (Evergreen Shrubs)

Landscape Requirement Calculation - Example A

For this example a 3-acre commercial site has been used that has similar commercial uses along two property lines and residential uses along the other two.

Step A: Determine land use intensity

Land use intensity of the site proposed for development is Class IV.

Adjacent Land Use Intensities:

Property Line A: III (3)
Property Line B: IV (4)
Property Line C: II (2)
Property Line D: II (2)

Step B: Divide each property line length by 100

Property Line A: 435' / 100 = 4.35
Property Line B: 300' / 100 = 3.00
Property Line C: 435' / 100 = 4.35
Property Line D: 300' / 100 = 3.00

Step C: Subtract land use intensity and multiply by number derived in Step B above for each property Line

Property Line A: IV(4) - III(3) = I(1)	x 4.35	= 4.35
Property Line B: IV(4) - IV(4) = 0	x 3.00	= 0.00
Property Line C: IV(4) - II(2) = II (2)	x 4.35	= 8.70
Property Line D: IV(4) - II(2) = II (2)	x 3.00	= 6.00

Step D: Add figures derived from Step C above

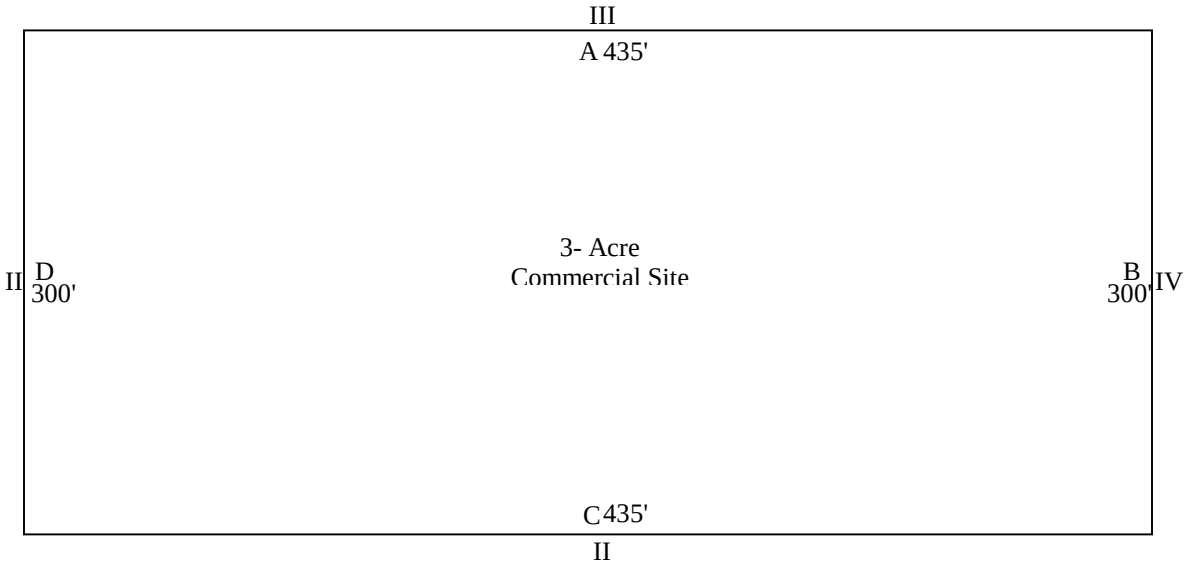
4.35 + 0 + 8.70 + 6 = 19.05

19.0% is the weighted land use incompatibility factor

Step E: Multiply the base amount of landscaping required by the ordinance by the percentage in Step D above

12 deciduous trees per acre x 3 acres = base amount of 36 deciduous trees (evergreen alternative of 45)
3 deciduous shrubs per acre x 3 acres = base amount of 9 deciduous shrubs (evergreen alternative of 18)

36 x .19(19%) = 6.84 = 7 + 36(base amount) = 43 total deciduous trees (54 for evergreen alternative)
9 x .19 (19%) = 1.71 = 2 + 9 (base amount) = 11 total deciduous shrubs (21 for evergreen alternative)



LANDSCAPING & BUFFER CALCULATION FORM

Step A: Determine Base Number of Plantings

Site Size: 1 (in acres)	x 12	12	Deciduous Trees	} Option 1*
	x 3	3	Deciduous Shrubs	
	x 15	_____	Evergreen Trees	} Option 2*
	x 6	_____	Evergreen Shrubs	

*Or select a combination of the above that meets the requirements and intent of the Ordinance.

Step B: Determine Land Use Intensities **Step C: Divide By 100**

	Intensity	*Length*	*/100*
Property Line A:	1	290’	5.80
Property Line B:	2	150’	1.50
Property Line C:	2	290’	2.90
Property Line D:	2	159’	1.50
Property Line E:	_____	_____	_____

Step D: Subtract Land Use Intensity and Multiply by Number Obtained in Step C

	Intensity		*Proposed Intensity*		*x*	*Step C Number*	=	*Factor*
Property Line A:	1	-	3	= 2	x	2.90	=	5.80
Property Line B:	2	-	3	= 1	x	1.50	=	1.50
Property Line C:	2	-	3	= 1	x	2.90	=	2.90
Property Line D:	2	-	3	= 1	x	1.50	=	1.50
Property Line E:	_____	-	_____	= _____	x	_____	=	_____

Step E: Add Figure for Total **8.8**

Step F: Convert to Percentage **8.8%**

Step G: Multiply % from Step F by Base Amount of Plantings.

Base Amount		*Step F %*	=	*Additional Plantings*	+	*Base Amount*	=	*Total*
12	x	8.8 (%)	=	1	+	12	=	13 (Deciduous Trees)
3	x	8.8 (%)	=	.264=0	+	3	=	3 (Deciduous Shrubs)
_____	x	_____(%)	=	_____	+	_____	=	_____ (Evergreen Trees)
_____	x	_____(%)	=	_____	+	_____	=	_____ (Evergreen Shrubs)

Landscape Requirement Calculation - Example B

For this example a 1-acre commercial site has been used that has agricultural uses along one property lines and residential uses along the other three.

Step A: Determine land use intensity

Land use intensity of the site proposed for development is Class III

Adjacent Land Use Intensities:

Property Line A: I (1)
Property Line B: II (2)
Property Line C: II (2)
Property Line D: II (2)

Step B: Divide each property line length by 100

Property Line A: 290' / 100 = 2.90
Property Line B: 150' / 100 = 1.50
Property Line C: 290' / 100 = 2.90
Property Line D: 150' / 100 = 1.50

Step C: Subtract land use intensity and multiply by number derived in Step B above for each property Line

Property Line A:	III(3) - I(1) = II(2)	x 2.90	=	5.80
Property Line B:	III(3) - II(2) = I(1)	x 1.50	=	1.50
Property Line C:	III(3) - II(2) = I(1)	x 2.90	=	2.90
Property Line D:	III(3) - II(2) = I(1)	x 1.50	=	1.50

Step D: Add figures derived from Step C above

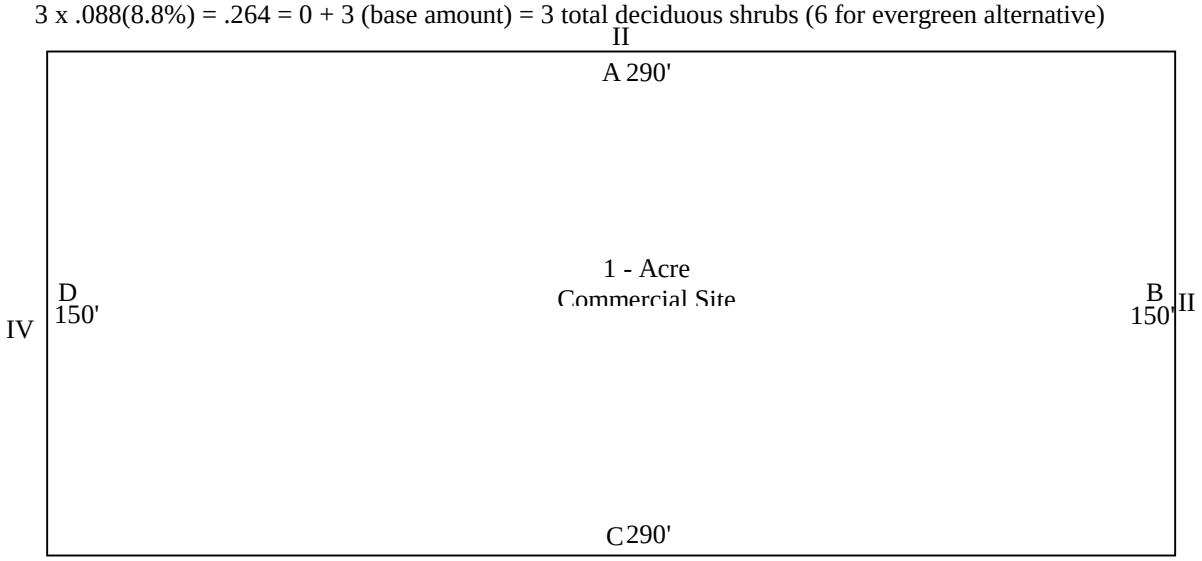
2.90 + 1.50 + 2.90 + 1.50 = 8.8

8.8% is the weighted land use incompatibility factor

Step E: Multiply the base amount of landscaping required by the ordinance by the percentage in Step D above

12 deciduous trees per acre x 1 acres = base amount of 12 deciduous trees (evergreen alternative of 15)
3 deciduous shrubs per acre x 1 acres = base amount of 3 deciduous shrubs (evergreen alternative of 6)

12 x .088(8.8%) = 1.06 = 1+ 12(base amount) = 13 total deciduous trees (16 for evergreen alternative)
3 x .088(8.8%) = .264 = 0 + 3 (base amount) = 3 total deciduous shrubs (6 for evergreen alternative)



LANDSCAPING & BUFFER CALCULATION FORM

Step A: Determine Base Number of Plantings

Site Size: 3 (in acres)	x 12	36	Deciduous Trees	} Option 1*
	x 3	9	Deciduous Shrubs	
	x 15	_____	Evergreen Trees	} Option 2*
	x 6	_____	Evergreen Shrubs	

*Or select a combination of the above that meets the requirements and intent of the Ordinance.

Step B: Determine Land Use Intensities **Step C: Divide By 100**

	Intensity	*Length*	*/100*
Property Line A:	3	435’	4.35
Property Line B:	4	300’	3.00
Property Line C:	2	435’	4.35
Property Line D:	2	_____	3.00
Property Line E:	_____	_____	_____

Step D: Subtract Land Use Intensity and Multiply by Number Obtained in Step C

	Intensity		*Proposed Intensity*			*x*	*Step C Number*		*Factor*
Property Line A:	3	-	3	=	1	x	4.35	=	4.35
Property Line B:	4	-	4	=	0	x	3.00	=	0.00
Property Line C:	4	-	2	=	2	x	4.35	=	8.70
Property Line D:	4	-	2	=	2	x	3.00	=	6.00
Property Line E:	_____	-	_____	=	_____	x	_____	=	_____

Step E: Add Figure for Total **19.05**

Step F: Convert to Percentage **19%**

Step G: Multiply % from Step F by Base Amount of Plantings.

Base Amount		*Step F %*		*Additional Plantings*	+	*Base Amount*	=	*Total*
36	x	19 (%)	=	6.84=7	+	36	=	43 (Deciduous Trees)
9	x	19 (%)	=	1.71=2	+	9	=	11 (Deciduous Shrubs)
_____	x	_____(%)	=	_____	+	_____	=	_____ (Evergreen Trees)
_____	x	_____(%)	=	_____	+	_____	=	_____ (Evergreen Shrubs)

APPENDIX M

Native Plants & Invasive Species

Landscaping with Native Plants in Pennsylvania. Pennsylvania Department of Conservation and Natural Resources.

Invasive Plants in Pennsylvania. Pennsylvania Department of Conservation and Natural Resources.

Recommended Tree Species for Communities. Provided by Tom Strausbaugh Service Forester, Pennsylvania Department of Conservation and Natural Resources, Bureau of Forestry, Bald Eagle State Forest District, Laurelton, PA.

For more information

Places and organizations in Pennsylvania

Audubon Society of Western Pennsylvania, 614 Dorseyville Road, Pittsburgh, PA 15238-1618, Tel (412) 963-6100, Fax (412) 963-6761, www.enviroweb.org/orgs/aswp

Bowman's Hill Wildflower Preserve, Washington Crossing Historic Park, PO Box 685, New Hope, PA 18938-0685, Tel (215) 862-2924, Fax (215) 862-1846, Native plant preserve, plant sales, native seed, educational programs, www.bhwp.org

Brandywine Conservancy, Brandywine River Museum, PO Box 141, Chadds Ford, PA 19317, Tel (610) 388-2700, Fax (610) 388-3814, Native seeds, plants, garden, and bookstore; Environmental Management Center offers planning and conservation services, www.brandywinemuseum.org

Department of Conservation and Natural Resources; Bureau of Forestry; PO Box 8552, Harrisburg, PA 17105-8552, Tel (717) 787-3444, Fax (717) 783-5109, , Invasive plant brochure; list of native plant & seed suppliers in PA; list of rare, endangered, threatened species, www.dcnr.state.pa.us/forestry

Morris Arboretum of the University of Pennsylvania, 9414 Meadowbrook Avenue, Philadelphia, PA 19118, Tel (215) 247-5777, www.upenn.edu/morris, *PA Flora Project Website:* Arboretum and gardens (some natives), educational programs, PA Flora Project, www.upenn.edu/paflora

"Native Plants in the Landscape" Conference (each June at Millersville, Lancaster County, PA); Millersville University Dept. of Continuing Education, Tel (717) 872-3030, Fax (717) 871-2022

Pennsylvania Landscape & Nursery Association, 1707 S. Cameron Street, Harrisburg, PA, 17104, Tel (717) 238-1673, Fax (717) 238-1675, www.plna.com

Pennsylvania Native Plants Society, 1001 East College Avenue, State College, PA 16801

Penn State Cooperative Extension, Department of Horticulture, 102 Tyson Building, University Park, PA, 16802, Tel (814) 865-2571, Fax (814) 863- 6139 For local information, contact the extension office in your county listed in the blue section of your phone book or by locating their office on the Web at www.extension.psu.edu

Pittsburgh Garden Center Place; 1059 Shady Ave., Pittsburgh, PA 15232, Tel (412) 441-4442, Fax (412) 665-2368, Green Line (412) 665-2364, Education programs, trfn.clpgh.org/garden

Rodale Institute, 611 Siegfriedale Road, Kutztown, PA 19530, Tel (610) 683-1400, Fax (610) 683-8548, Gardens, landscaping brochures, organic gardening and farming events and products, www.rodaleinstitute.org

Western Pennsylvania Conservancy, 209 Fourth Avenue, Pittsburgh, PA 15222, Tel (412) 288-2777, Fax (412) 281-1792, www.paconserve.org

Other Internet Sites

Look for many other listings under "native plants" on the Internet.

Plant Conservation Alliance, www.nps/plants/alien

Lady Bird Johnson Wildflower Center, www.wildflower.org

Center for Plant Conservation, Missouri Botanical Garden, www.mobot.org/cpc

The Nature Conservancy, www.tnc.org

The New England Wildflower Society, www.newfs.org/index.html

U.S. Environmental Protection Agency, Green Landscaping with Native Plants, www.epa.gov/greenacres/

Books

Bir, Richard. *Growing and Propagating Showy, Native Woody Plants.* University of North Carolina Press. ISBN# 0-8078-4366-0

Dirr, M.A. 1990. *Manual of Woody Landscape Plants,* 4 ed. Stipes Publishing Co; 10-12 Chester St; Champaign, IL 61820. ISBN# 0-87563-347-1

Ferreneia, Viki. 1993. *Wildflowers in Your Garden.* New York: Regina Ryan, Random House. ISBN# 0-679-41453-3

Hightshoe, G.L. 1988. *Native Trees, Shrubs, and Vines for Urban and Rural America.* New York: Van Nostrand Reinhold. ISBN# 0-442-23274-8

Mickel, John. 1994. *Ferns for American Gardens.* New York: Macmillan. ISBN# 0-02-584491-1

Newcomb, Lawrence. 1977. *Newcomb's Wildflower Guide.* Boston: Little, Brown, & Co. ISBN# 0-316-60441-0

Ottesen, Carole. 1995. *The Native Plant Primer.* New York: Harmony Books. ISBN# 0-517-59215-0

Petrides, G.A. 1972. *A Field Guide to Trees and Shrubs.* Boston: Houghton Mifflin. Peterson Field Guide Series. ISBN# 0-395-17579-8

Phillips, H.R. 1985. *Growing and Propagating Wild Flowers.* Chapel Hill: University of North Carolina Press. ISBN# 0-8078-4131-5

Rhoads, A.F. and Klein, W.M. 1993. *The Vascular Flora of Pennsylvania, Annotated Checklist and Atlas.* American Philosophical Soc.; 104 S. Fifth St.; Philadelphia, PA 19106. ISBN#0-87169-207-4

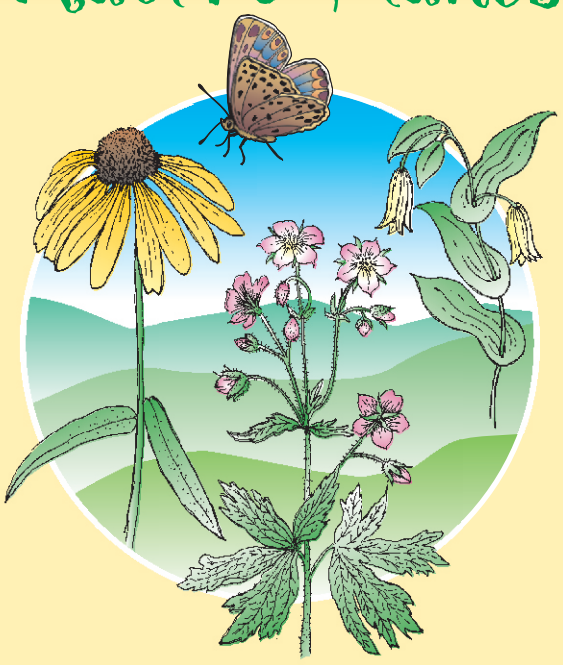
Rhoads, A.F. and Block, T.A. 2000. *The Plants of Pennsylvania, An Illustrated Manual.* Philadelphia: University of Pennsylvania. ISBN# 0-8122-3535-5

Roberts, E.A. and Rehmann, Elsa. 1996. *American Plants for American Gardens.* Athens: University of Georgia Press. ISBN# 0-8203-1851-5

Stein, Sara. 1993. *Noah's Garden, Restoring the Ecology of Our Own Back Yards.* Houghton Mifflin. ISBN# 0-395-65373-8

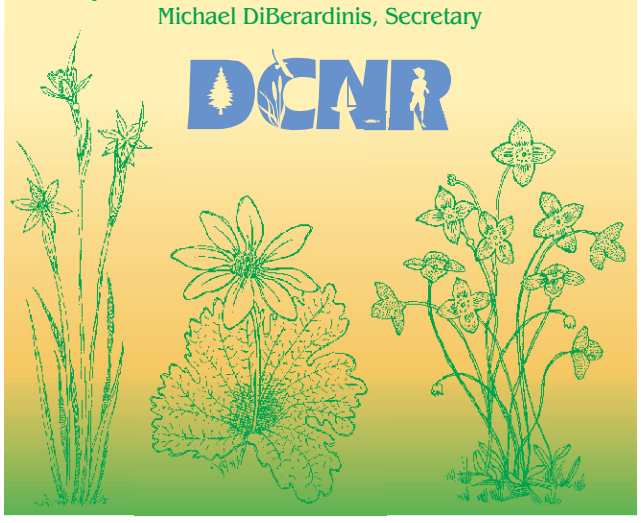
Strasbaugh, P.D. and Core, E.L. *Flora of West Virginia.* Grantsville, WV: Seneca Books, INC. ISBN# 0-89092-010-9

Landscaping with Native Plants



in Pennsylvania

Commonwealth of Pennsylvania
Edward G. Rendell, Governor
Department of Conservation & Natural Resources
Michael DiBerardinis, Secretary



So what exactly is a Native Plant?

A **native plant** is one which occurred within the state before settlement by Europeans. Native plants include ferns and clubmosses; grasses, sedges, rushes, and their kin; flowering perennials; annuals which only live one year; biennials, which have a two year life cycle; and, of course, the woody trees, shrubs, and vines which covered "Penn's Woods" when the first settlers arrived. There are over 2,100 native plant species known in Pennsylvania.

An **introduced** or **non-native plant** is one that has been brought into the state and become established. At the turn of the 21st century, about 1,300 species of non-native plants existed in Pennsylvania. That is 37 percent of Pennsylvania's total plant flora (which is about 3,400 species), and more introduced plants are identified every year.

An **invasive plant** is a species that has become a weed pest. One that grows aggressively, spreads, and displaces other plants. Although some native plants are aggressive on disturbed areas, most invasive plants are introduced from other continents, leaving behind pests, diseases, predators, and other natural controls.

While new plants are coming into Pennsylvania, native plants are being lost to habitat destruction, invasive plants, and introduced pests and diseases. By 2000, 5 percent of Pennsylvania native plant species had been eliminated and another 25 percent were in danger of becoming so. The good news is that action can be taken to protect and enhance the remaining diversity of beautiful and often useful plant species which grace our Commonwealth:

Protect native plant communities and minimize habitat destruction
Landscape with native plants
Learn more about native plants
Buy nursery-propagated native plants
Do not remove native plants from the wild
Practice responsible landscaping techniques

Go Native with these 6 basics:

1. Protect native plant communities and minimize habitat destruction

The most important guideline is to conserve already existing areas of native vegetation as a whole, functioning unit. The easiest, least expensive, and best way to conserve Pennsylvania's plant heritage is to protect existing native plant communities from further disturbance. If disturbance is necessary, strive for minimum habitat destruction. In some cases ecological restoration may be necessary, which can include planting native species, removing invasive introduced species, controlling erosion, and loosening soil compaction.

2. Landscape with native plants

Native plant communities have been destroyed in many areas and therefore landscaping is required; parks, yards, streets, and campuses, for example. Well-chosen native plants perform well in these landscapes. The Department of Conservation and Natural Resources (DCNR)-Bureau of Forestry (BOF) recommends avoiding rare, endangered, and threatened plants and instead choosing native plant species which grow commonly throughout the state. These hardy and adaptable plants do well in a wide variety of conditions and have a much better chance of success in gardens. For a list of recommended native plants easily purchased, see the inside of this brochure. If you do not want all natives, plant adapted introduced plants suited for the site, colorful annuals, or flowering plants that will not escape and become environmental weeds.

3. Learn more about native plants

Learn what plants are native in your area. This brochure lists just a few of the resources for this region, but there are many more. Many field guides can get you started.

4. Buy nursery-propagated native plants

Most retail nurseries and mail-order catalogs now offer native plants. The more consumers request native plants, the more this supply will grow. If you want guaranteed ornamental characteristics, cultivars (named varieties) are available in some cases; for instance, New England Aster has a cultivar named 'Purple Dome',which was selected for shorter height and showier flowers. Cultivars should be predictable in attributes like height, color, blooming period, or absence of seed pods/thorns—qualities many gardeners want. If your goal is genetic diversity, however, ask for straight species, not cultivars, grown from local seed sources. Plants grown from seed have much more variety than cloned cultivars.

5. Do not remove native plants from the wild

Taking native plants from the wild depletes native populations. Also, many wild-collected plants do not survive transplanting. Prevent wild-collecting of plants by making sure that plants you buy are propagated at a nursery, or by starting plants yourself from a local seed supply (Collect seed only with the property owner's permission). Ask the DCNR-BOF for a list of native plant and seed sources in Pennsylvania.

6. Practice responsible landscaping techniques

The first rule of responsible landscaping is to **plant the right plants in the right environment:** never introduce invasive plants into your landscape that will aggressively spread off your property and invade native plant communities. They can drastically alter ecosystems and give you and your neighbors maintenance headaches for years to come. Ask the DCNR-BOF for the brochure "Invasive Plants in Pennsylvania."

When landscaping with native plants, it is important to **choose plants that will grow well at the site:** wet or dry, shade or sun, acid or neutral soil. A good trick is to notice which native plants are thriving nearby, and to use those clues to guide plant selection. This brochure lists some information, but more is available from plant nurseries, catalogs, books, or the Internet.

For soil fertility, compost and mulch of leaves or grass clippings provide slow release nutrients. Chemical fertilizers often provide too many nutrients too quickly for native plants, and this flush of nutrients gives weeds a competitive edge. Proper site preparation begins with a soil test before applying fertilizer.

Try **organic pest control.** Keep the soil covered to prevent weeds. Remove invasive plants nearby. Take out severely diseased plants, or ones with insect infestations. Many native plants attract beneficial insects which help *control* pests, so try creating habitat for "good bugs."

In Summary

Native plants help create beautiful landscapes that provide wildlife habitat and reduce maintenance costs. Their greatest benefit, though, may be the increased awareness about which plants are native and which are not, and the protection of remaining native plant communities. Children and adults can have a high-quality educational experience right in their own backyard, park, school, or workplace. Loss of native plant communities is not just in the tropical rainforest!

Revised from original text by:
Cyane Gresham

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Recommended Native Plants for Landscaping in Pennsylvania

The species on this list are native plants suggested for landscaping in Pennsylvania. They have been selected because they tend to grow widely throughout the state; they are common and will likely do well if matched to their preferred growing conditions. By definition, none of these plants are rare, endangered, threatened, or extinct in the state. These plants are also commonly cultivated and used in horticulture; they should be available for purchase and should perform well in garden conditions;
Common Name: since there often are many common names for the same plant, these species are arranged alphabetically by scientific name.
Scientific Name: Scientific name from Rhoads and Klein, 1993, *The Vascular Flora of Pennsylvania* (see resource list).

Zone Preference: Pennsylvania is generally divided into two horticultural zones: **USDA zone 5** in the northern half of the state and higher elevations where the average minimum temperature may reach –10 to –20F. **USDA Zone 6** is in the southern half of the state and lower elevations where the average coldest temperature is 0 to –10F. An X in the zone 6 column means that a plant grows fairly widely through that zone where minimums are 0 to –10F; if there is an X in both Zone columns, it means that the plant grows throughout the whole state in both temperature zones. If there is a dash (-), the plant grows partially in that zone, but not throughout the area.
Caution: Edible and herbal uses should be carefully researched as these notes are not an endorsement or recommendation.

Herbaceous Perennials

	Common Name	Scientific Name	Zone Preference 5	Zone Preference 6	Bloom Period	Bloom Color	Light Preference Sun	Light Preference Med	Light Preference Shade	Moisture Preference Wet	Moisture Preference Moist	Moisture Preference Dry	Height in Feet	Notes
Showy Flowers	Doll's eyes	*Actaea pachypoda*	X	--	Apr-Jun	white			✸		●		1 - 3	Interesting berries
	Wild columbine	*Aquilegia canadensis*	X	X	Apr-Jun	red and yellow		✸	✸		●	○	1 - 3	Commonly cultivated; spreads by seed; hummingbirds
	Jack-in-the-pulpit	*Arisaema triphyllum*	X	X	Apr-Jun	green-purple		✸	✸	●	●		1 - 3	Unusual flower; bright red berries
	Wild ginger	*Asarum canadense*	X	X	Apr-May	maroon			✸		●		< 1	Edible and herbal uses
	Swamp milkweed	*Asclepias incarnata*	--	X	Jul-Aug	rose	✸	✸		●	●		2 - 4	Butterfly plant; needs wet-moist soil
	Common milkweed	*Asclepias syriaca*	X	X	Jun-Aug	pink	✸	✸			●	○	2 - 6	Butterfly plant; interesting seed pods
	Butterfly-weed	*Asclepias tuberosa*		X	May-Sep	orange	✸	✸	✸		●	○	1 - 3	Butterfly plant; tolerates dry conditions; taproot
	New England aster	*Aster novae-angliae*	--	X	Aug-Oct	purple	✸	✸			●		2 - 6	Showy and frequently cultivated
	Turtlehead	*Chelone glabra*	X	X	Jul-Sep	whitish	✸	✸	✸	●	●		1 - 3	Tolerates wet; strong grower; herbal uses; hummingbirds
	Joe-Pye weed	*Eupatorium fistulosum*	--	X	Aug-Sep	purple	✸	✸		●	●		3 - 6	Good for insects in the garden; herbal uses
	White snakeroot	*Eupatorium rugosum*	--	X	Jul-Oct	white	✸	✸	✸		●	○	2 - 3	Tough plant; can grow in dry shade; cultivars available
	Gaura	*Gaura biennis*		X	Jul-Sep	white	✸	✸			●		1 - 6	Attractive flowers
	Wood geranium	*Geranium maculatum*	X	X	Apr-Jul	rose	✸	✸	✸		●		1 - 2	Adaptable plant; long bloom time; spreader; herbal uses
	Common sneezeweed	*Helenium autumnale*	--	X	Aug-Oct	yellow	✸	✸	✸	●	●		2 - 6	Tolerates wet areas; showy flowers; herbal uses
	Sunflowers	*Helianthus sp.*	--	X	Jul-Sep	yellow	✸	✸	✸	●	●	○	4 - 6	Perennials; often aggressive; showy flowers; good for birds
	Oxeye sunflower	*Heliopsis helianthoides*	--	X	Jul-Sep	yellow	✸	✸	✸		●		1 - 5	Long bloom time; butterfly plant
	Alum-root	*Heuchera americana*		X	May-Aug	greenish	✸	✸	✸		●		1 - 2	Long bloom time; many cultivars and hybrids
	Cardinal flower	*Lobelia cardinalis*	--	X	Jul-Sep	scarlet	✸	✸	✸	●	●		2 - 5	Long bloom time; butterfly and hummingbird plant
	Great blue lobelia	*Lobelia siphilitica*	--	X	Jul-Oct	blue	✸	✸	✸	●	●		1 - 3	Long bloom time; white cultivars; hummingbirds
	Monkey-flower	*Mimulus ringens*	X	X	Jul-Sep	violet	✸	✸		●	●		2 - 3	Grows in moist places; interesting flowers
	Partridge-berry	*Mitchella repens*	X	X	Jun-Jul	white		✸	✸		●	○	< 1	Evergreen; ground cover; berry edible and showy
	Bee-balm	*Monarda didyma*	X	--	Jul-Aug	red	✸	✸	✸		●		2 - 5	Showy flowers; aromatic; butterfly plant; herbal uses
	Bee-balm	*Monarda fistulosa*	--	--	Jul-Aug	violet	✸	✸			●	○	2 - 5	Aromatic; tolerates dry soils; herbal uses
	Sundrops	*Oenothera fruticosa*	--	X	Jun-Sep	yellow	✸	✸			●		1 - 3	Bright flowers; long bloom time
	Sundrops	*Oenothera perennis*	X	X	Jun-Aug	yellow	✸				●	○	1 - 2	Bright flowers; long bloom time
	Beard-tongue	*Penstemon digitalis*	--	X	May-Jul	white	✸				●	○	2 - 5	Colored cultivars; hummingbirds
	Phlox	*Phlox divaricata*	--	--	May-Jun	lilac	✸	✸	✸	●	●		1 - 2	Aromatic; butterflies
	Phlox	*Phlox maculata*	--	X	Jun-Sep	purple	✸	✸	✸	●	●		1 - 3	Aromatic; showy flowers; butterflies
	Phlox	*Phlox paniculata*	--	X	Jul-Oct	pink	✸	✸	✸	●	●		2 - 5	Aromatic; showy flowers; butterflies
	May-apple	*Podophyllum peltatum*	--	X	May	white		✸	✸		●		1 - 2	Ground cover; edible fruit; mottled foliage
	Spreading Jacob's ladder	*Polemonium reptans*	--	--	Apr-Jun	blue	✸	✸	✸		●		1 - 2	Attractive flowers; slow spreader; herbal uses
	Solomon's seal	*Polygonatum pubescens*	--	X	Apr-Jun	yellow	✸	✸	✸		●		1 - 3	Not fussy; blue berries; herbal and edible uses
	Black-eyed Susan	*Rudbeckia hirta*	X	X	May-Sep	orange	✸	✸	✸		●	○	2 - 3	Bright daisy-like flowers; long bloom time; many cultivars
	Cutleaf coneflower	*Rudbeckia lacianata*	X	X	Jul-Sep	yellow	✸	✸		●	●		2 - 6	Tall daisy; tolerates wet soil; herbal
	Bloodroot	*Sanguinaria canadensis*	--	X	Mar-May	white		✸	✸		●		< 1	Red juice; herbal uses
	Golden ragwort	*Senecio aureus*	--	X	May-Jul	yellow	✸	✸	✸	●	●		1 - 2	Wetland plant; long bloom time; early daisy-like flowers
	False Solomon's seal	*Smilacina racemosa*	X	X	May-Jul	white		✸	✸		●	○	1 - 2	Plume like flower; red berries; herbal uses
	Wrinkle-leaf goldenrod	*Solidago rugosa*	X	X	Jul-Nov	yellow	✸	✸	✸		●		2 - 6	Aggressive; tough plant; butterflies
	Nodding ladies-tresses	*Spiranthes cernua*	--	--	Aug-Oct	white	✸	✸		●	●		1 - 2	Likes moist, acid soil; orchid flowers; herbal uses
	Tall meadow-rue	*Thalictrum pubescens*	X	X	May-Jun	white	✸	✸	✸	●	●		2 -8	Wet to moist soil; tall plant; delicate flowers
	Foamflower	*Tiarella cordifolia*	X	--	Apr-Jul	white		✸	✸		●		< 1	Attractive, long-blooming flower; many cultivars
	Trillium	*Trillium grandiflorum*	--	--	Apr-Jun	white			✸		●		1 - 2	Showy flowers; common in western PA
	Blue vervain	*Verbena hastata*	X	X	Jun-Sep	blue	✸	✸		●	●		2 - 5	Wet-moist soils; bright flowers; herbal uses
	New York ironweed	*Vernonia noveboracensis*	--	X	Jul-Sep	purple	✸	✸		●	●		3 - 6	Tall plant of wet-moist soils; brilliant flowers
	American dog violet	*Viola conspersa*	--	X	Apr-May	violet	✸	✸	✸	●	●		< 1	Delicate plant and flower; edible
	Common blue violet	*Viola sororia*	--	X	Apr-May	violet	✸	✸	✸		●		< 1	Delicate plant and flower; edible
	Golden-Alexanders	*Zizia aurea*	--	--	Apr-Jun	gold	✸	✸	✸		●		1 - 2	Not fussy; attracts good insects
Grasses	Big bluestem	*Andropogon gerardii*	--	--	Jun-Sep		✸	✸			●	○	3 - 5	Clump forming; attractive, with winter interest
	Lurid sedge	*Carex lurida*	X	X	Jun-Oct		✸	✸	✸	●			1 - 2	Wetland plant; interesting seeds
	Bottlebrush grass	*Elymus hystrix*	--	X	Jun-Aug			✸	✸		●		2 - 4	Grass which grows in shade
	Riverbank wild-rye	*Elymus riparius*	X	X	Jul-Sep		✸	✸		●	●		3 - 5	Good for streambank conditions
	Virginia wild-rye	*Elymus virginicus*	X	X	Jul-Sep		✸	✸	✸	●	●		2 - 4	Grass which tolerates a wide range of conditions
	Switch grass	*Panicum virgatum*	--	--	Aug-Sep		✸				●	○	3 - 6	Clump grass; can help control erosion
	Little bluestem	*Schizachyrium scoparium*	--	X	Jul-Sep		✸					○	2 - 4	Clump grass; tolerates poor soil; winter interest
	Indian grass	*Sorghastrum nutans*	--	--	Aug-Sep		✸				●	○	3 - 6	Clump grass; tall with beautiful flowers
Ferns	Maidenhair fern	*Adiantum pedatum*	X	X					✸		●		1 - 2	Grows in clumps; delicate texture; herbal uses
	Evergreen shield fern	*Dryopteris marginalis*	X	X				✸	✸		●	○	1 - 3	Evergreen; clump-former; attractive
	Interrupted fern	*Osmunda claytoniana*	X	X				✸	✸		●		2 - 4	Grows in clumps; distinctive fronds
	Christmas fern	*Polystichum achrostichoides*	X	X				✸	✸		●		1 - 2	Evergreen; grows in clumps

Woody Plants

	Common Name	Scientific Name	Zone Preference 5	Zone Preference 6	Bloom Period	Wildlife Value	Light Preference Sun	Light Preference Med	Light Preference Shade	Moisture Preference Wet	Moisture Preference Moist	Moisture Preference Dry	Height in Feet	Notes
Medium to Large Trees	Red maple	*Acer rubrum*	X	X	Mar-Apr	very high	✸	✸	✸	●	●	○	40 - 60	Red flowers; adaptable; fall color
	Sugar maple	*Acer saccharum*	X	X	Apr-May	very high		✸	✸		●		60 - 75	Yellow flowers in spring; fall color; maple syrup
	Yellow birch	*Betula alleghaniensis*	X		Apr-May	very high		✸	✸		●		60 - 80	Catkins in winter
	Black birch	*Betula lenta*	--	--	Apr-May	very high		✸	✸		●	○	45 - 55	Catkins in winter
	River birch	*Betula nigra*	--	--	Apr-May	very high	✸	✸	✸	●	●		60 - 80	Catkins; striking bark; grows in eastern & central PA
	American beech	*Fagus grandifolia*	X	X	Apr-May	high	✸	✸	✸		●		50 - 70	Beautiful tree; edible nuts; attractive bark
	White ash	*Fraxinus americana*	--	X	Apr-May	intermediate	✸	✸	✸		●	○	50 - 80	Fast growth; fall color
	Green ash	*Fraxinus pennsylvanica*	--	--	Apr-May	intermediate	✸	✸	✸	●	●		30 - 50	Fast growth; fall color
	Tulip poplar	*Liriodendron tulipfera*	--	X	May-Jun	intermediate	✸	✸	✸		●	○	75 - 100	Green flowers in early summer; fast growth
	Black-gum	*Nyssa sylvatica*	--	X	Apr-May	high	✸	✸	✸	●	●		30 - 60	Outstanding fall color
	Eastern white pine	*Pinus strobus*	X	X		very high	✸	✸	✸		●	○	50 - 80	Evergreen conifer
	Sycamore	*Platanus occidentalis*	--	--	Apr-May	low	✸	✸	✸		●		75 - 100	Showy bark; drops fruits
	White oak	*Quercus alba*	--	X	Mar-May	very high	✸	✸	✸		●	○	50 - 100	Edible nuts; majestic
	Chestnut Oak	*Quercus montana*	--	X	May-Jun	very high		✸	✸			○	40 - 75	Fall color; nuts attractive to wildlife
	Pin Oak	*Quercus palustris*		X	Apr-May	very high	✸	✸		●	●		60 - 70	Common ornamental street trees; fall color
	Red Oak	*Quercus rubra*	X	X	Apr-May	very high	✸	✸			●	○	60 - 80	Hardy and long-lived tree; fall color
	Sassafras	*Sassafras albidum*	--	X	April	high	✸	✸	✸		●		30 - 50	Edible and medicinal uses; fall color
	Basswood	*Tilia americana*	X	X	May-Jun	very low	✸	✸					60 - 80	Flowers aromatic, with herbal uses; multiple trunks
	Canada hemlock	*Tsuga canadensis*	X	X		high		✸	✸		●		40 - 70	Evergreen conifer; PA state tree
Small Trees and Shrubs	Smooth alder	*Alnus serrulata*	--	X	Mar-Apr	high	✸	✸	✸	●			6 - 10	Yellow catkins; multi-stemmed; needs wet soil
	Serviceberry	*Amelanchier arborea*	--	X	Mar-May	high	✸	✸	✸		●	○	15 - 25	White flowers in spring; edible berries; fall color
	Black chokeberry	*Aronia melanocarpa*	--	--	Mar-Jul	intermediate	✸	✸	✸	●	●	○	3 - 6	White flowers; multi-stemmed; berries; fall color
	New Jersey tea	*Ceanothus americanus*	--	X	May-Sep	intermediate	✸	✸	✸		●	○	< 3	White flowers; multi-stemmed; tough; fixes nitrogen
	Buttonbush	*Cephalanthus occidentalis*	--	X	Jun-Sep	intermediate	✸	✸	✸	●	●		6 - 15	White flowers; multi-stemmed; interesting fruit
	Redbud	*Cercis canadensis*		--	April	very low		✸	✸		●	○	20 - 35	Purple flowers in spring; fixes nitrogen
	Alternate-leaved dogwood	*Cornus alternifolia*	X	X	May-Jun	very high		✸	✸		●		15 - 25	White flowers in early summer; blue berries
	Silky dogwood	*Cornus amomum*	--	X	May-Jul	very high	✸	✸		●	●		6 - 12	White flowers in summer; blue berries; multi-stemmed
	Flowering dogwood	*Cornus florida*	--	X	Apr-Jun	very high		✸	✸		●		10 - 30	White bracts in spring; red berries; diseases
	Witch-hazel	*Hamamelis virginiana*	X	X	Sep-Nov	low		✸	✸		●		20 - 30	Yellow flowers; multi-stemmed; fragrant; medicinal
	Wild hydrangea	*Hydrangea arborescens*	--	X	Jun-Jul	low		✸	✸		●		3 - 5	White blooms in mid-summer; multi-stemmed
	Winterberry	*Ilex verticillata*	--	X	May-Jun	high	✸	✸	✸	●	●		6 - 10	Showy berries in winter; multi-stemmed
	Mountain laurel	*Kalmia latifolia*	--	X	May-Jul	very low	✸	✸	✸	●	●	○	7 - 15	White fl.; evergreen; multi-stemmed; Pa state flower
	Spicebush	*Lindera benzoin*	--	X	Mar-May	high		✸	✸	●	●		6 - 12	Berries and foliage in fall; multi-stemmed; herbal uses
	Ninebark	*Physocarpus opulifolius*	--	X	May-Jul	intermediate	✸	✸	✸	●	●		5 - 10	Pink flowers; papery bark; multi-stemmed
	Wild plum	*Prunus americana*	--	X	Apr-May	high	✸	✸	✸		●	○	15 - 25	White flowers; edible fruit; multi-stemmed
	Rosebay	*Rhododendron maximum*	--	--	Jun-Jul	very low			✸	●	●		10 - 30	Rose flowers; evergreen; multi-stemmed
	Pinxter-flower	*Rhododendron periclymenoides*	--	X	May-Jun	low	✸	✸	✸		●	○	4 - 8	White-pink flowers; multi-stemmed
	Black willow	*Salix nigra*	--	X	Apr-May	intermediate	✸	✸	✸	●	●		30 - 50	Catkins in spring; needs wet to moist soil
	Silky willow	*Salix sericea*	X	X	May	intermediate	✸	✸	✸	●			< 12	Catkins; needs wet conditions; multi-stemmed
	Elderberry	*Sambucus canadensis*	X	X	Jun-Jul	very high	✸	✸	✸	●	●		5 - 15	White fl.; multi-stemmed; edible berries & flowers
	Lowbush blueberry	*Vaccinium angustifolium*	--	--	May-Jun	very high	✸	✸			●	○	1 - 2	White flowers; multi-stemmed; edible berries
	Highbush blueberry	*Vaccinium corymbosum*	--	--	May-Jun	very high	✸	✸	✸	●	●		6 - 12	White fl.; multi-stemmed; edible berries; fall color
	Maple-leaved viburnum	*Viburnum acerifolium*	X	X	May-Jun	intermediate		✸	✸	●	●	○	4 - 6	White fl.; multi-stemmed; edible berries; fall color
	Arrow-wood	*Virburnum recognitum*	--	--	May-Jun	very high	✸	✸	✸	●	●		3 - 15	White flowers in late spring; multi-stemmed
	Virginia creeper	*Parthenocissus quinquefolia*	--	--	July	high	✸	✸	✸	●	●	○	10 - 40	Fall color; berries important for wildlife; considered a vine

Invasive Plants in Pennsylvania

The species below are the most serious threats or worst offenders to our native ecosystems. Many have been designed as "Noxious Weeds" by the PA Department of Agriculture and are also a major concern to our agricultural community.

SCIENTIFIC NAME	COMMON NAME	PLANT FORM	NOTES	PENNSYLVANIA DISTRIBUTION
Alliaria petiolata	Garlic mustard	Flower	Invasive in many states; spreading aggressively in woodlands by seed	Freq: SE, SC, SW, NW; Occ: NE
Carduus nutans	Musk thistle	Flower	PA Noxious Weed	Freq: SE, SC, SW, NE, NC, NW
Cirsium arvense	Canada thistle	Flower	PA Noxious Weed	Freq: SE, SC, SW, NE, NC, NW
Cirsium vulgare	Bull thistle	Flower	PA Noxious Weed	Freq: SE, SC, SW, NE, NC, NW
Datura stramonium	Jimsonweed	Flower	Sometimes cultivated; spreads by seed, PA Noxious Weed	Freq: SE, SC, SW; Occ: NE
Galega officinalis	Goatsrue	Flower	PA and Federal Noxious Weed, one location in SE PA	Rare: SE
Heracleum mantegazzianum	Giant hogweed	Flower	PA and Federal Noxious Weed; sap can cause burning blisters	Rare: NW
Lythrum salicaria, L. virgatum	Purple loosestrife	Flower	Garden escape which has become invasive in many states; PA Noxious weed	Freq: SE; Occ: SC, SW, NE, NC, NW
Microstegium vimineum	Japanese stilt grass	Grass	Annual grass; invasive in many states; spreading through woodlands by seed	Freq: SE; Occ: SC
Phragmites australis	Common reed	Grass	Native and introduced strains; wetland grass which can form huge colonies	Freq: SE; Occ: SC, SW, NE, NW
Polygonum (Falopia) cuspidatum	Japanese knotweed	Flower	Invasive in many states; difficult to control; spreads by roots and seeds	Freq: SE; Occ: SC, SW, NE, NW; Rare: NC
Sorghum bicolor ssp. drummondii	Shattercane	Grass	Grass; PA noxious weed	Freq: SE; Occ: SC, NC
Sorghum halepense	Johnson grass	Grass	Grass; PA noxious weed; spreads by roots and seeds	Freq: SE; Occ: SC, SW, NE, NW
Elaeagnus umbellata	Autumn olive	Shrub	Escaped from plantings and invasive in many states; rapidly spread by birds	Freq: SE, SC; Occ: SW; Rare: NE, NW
Lonicera maackii	Amur honeysuckle	Shrub	Escaped from plantings; seeds spread by birds	Occ: SE, SC, NW
Lonicera morrowii	Morrow's honeysuckle	Shrub	Escaped from plantings and invasive in many states; seeds spread by birds	Freq: SE, SC, SW; Occ: NE, NC, NW
Lonicera standishii	Standish honeysuckle	Shrub	Escaped from plantings; seeds spread by birds	Occ: SE
Lonicera tatarica	Tartarian honeysuckle	Shrub	Escaped from plantings; seeds spread by birds	Freq: SE, SC, SW; Occ: NE, NW
Rosa multiflora	Multiflora rose	Shrub	Invasive in many states; seeds spread by birds; PA noxious weed	Freq: SE, SC, SW; Occ: NE, NC, NW
**Acer platanoides*	Norway maple	Tree	Commonly planted and escaped; invasive in many states; wind spreads prolific seeds	Freq: Se; Occ: SE, SW
Ailanthus altissima	Tree-of -heaven	Tree	Invasive in many states; wind spreads prolific seeds	Freq: SE, SC; Occ: SW
Celastrus orbiculatus	Oriental bittersweet	Vine	Escaped from cultivation and invasive in many states; spreading rapidly (by birds)	Freq: SE, SC, SW; Rare: NE, NW
Lonicera japonica	Japanese honeysuckle	Vine	Invasive in many states	Freq: SE, SC; Occ: SW, NE
Polygonum perfoliatum	Mile-a-minute vine	Vine	Range expanding, PA Noxious weed	Freq: SE; Rare: SW
Pueraria lobata	Kudzu	Vine	Invasive in many states; PA Noxious weed	Freq: SE; Rare: SW

The following species are invasive plants that are known to invade our native plant communities and are deserving of our vigilance.

Aegopodium podagraria	Goutweed	Flower	Commonly planted in the past and escaped; spreads aggressively by roots	Freq: SE; Occ: SC, SW, NE, NC, NW
Bromus tectorum	Cheatgrass	Grass	Annual grass; very invasive throughout the west; spreads by seed	Freq: SE, SC; Occ: SW, NE, NW; Rare: NC
Hesperis matronalis	Dame's rocket	Flower	Planted in gardens; escaped and naturalized along roads; spreads by seed	Freq: SE, SC, SW, NE; Occ: NC, NW
Myriophyllum spicatum	Eurasian water-milfoil	Flower	Invasive in many states; aquatic	Freq: SE, NW; Occ: NE; rare: SC, SW
Ornithogallum nutans, umbellatum	Star-of-Bethlehem	Flower	Common garden plant which has widely escaped	Freq: SE, SC, SW
Pastinaca sativa	Wild parsnip	Flower	Found commonly along roadsides; widespread and abundant; spread by seed	Freq: SE, SC, SW; Occ: NE, NC, NW
Perilla frutescens	Beefsteak plant	Flower	Garden escape; widespread mostly along roadsides; spreads by seed	Freq: SE, SC
Phalaris arundinacea	Reed canary grass	Grass	Aggressive wetland grass; native and introduced strains; widespread and abundant	Freq: SE, SC, SW; Occ: NE, NC, NW
Ranunculus ficaria	Lesser celandine	Flower	Spreads by roots and shoots; can be very aggressive in wetlands	Freq: SE; Rare: SC, SW
**Berberis thunbergii*	Japanese barberry	Shrub	Escaped from cultivation and invasive in many states; spread by birds	Freq: SE, SC, NE; Occ: SW, NC, NW
Berberis vulgaris	European barberry	Shrub	Escaped from cultivation; spread by birds	Freq: SE; Occ: SC, SW, NE, NC, NW
Elaegnus angustifolia	Russian olive	Shrub	Escaped from plantings and invasive in many states; spread by birds	Occ: SE, SC, SW
Ligustrum obtusifolium	Border privet	Shrub	Escaped from cultivation; seeds spread by birds	Freq: SE, SC; Occ: SW, NE, NW; Rare: NC
Ligustrum vulgare	Common privet	Shrub	Planted very commonly in the past and escaped; invasive in many states	Freq: SE, SC; Occ: SW, NE
Lonicera morrowii x tatarica	Bell's honeysuckle	Shrub	Escaped from cultivation	Occ: SE, SC, NW
Rhamnus catharticus	Common buckthorn	Shrub	Becoming a problem in PA	Freq: SE, SC; Occ: SW
Rhamnus frangula	Glossy buckthorn	Shrub	Becoming a problem in PA	Occ: SE, SC, SW, NE, NC, NW
Rubus phoenicolasius	Wineberry	Shrub	Common bramble; not cultivated; spreads by seed	Freq: SE, SC; Occ: SW
Ulmus pumila	Siberian elm	Tree	Escaped from cultivation	Occ: SE, SC; Rare: SW
Akebia quinata	Fiveleaf akebia	Vine	Escaped from cultivation and becoming a major problem in the Philadelphia area	Occ: SE; Rare: SC
Ampelopsis brevipedunculata	Porcelain-berry	Vine	Escaped from cultivation; spread by birds	Occ: SE, SW

The following species are considered invasive plants in the southeastern portion of Pennsylvania. These species are not known to be a major concern throughout the rest of the state, yet.

**Miscanthus sinensis*	Maiden grass	Grass	Commonly planted ornamental grass which can escape and spread by seed	Freq: SE
Trapa natans	Water chestnut	Flower	Wetland plant; should not be introduced as it will escape, spread, and naturalize	Rare: SE, NE
**Euonymus alatus*	Winged Euonymus	Shrub	Escaped from plantings; invasive in moist forests	Freq: SE; Rare: SW
**Spiraea japonica*	Japanese spiraea	Shrub	Frequently planted; escaped in some areas	Freq: SE; Occ: SC, SW, NE, NW
**Viburnum opulus var. opulus*	Guelder rose	Shrub	Resembles native *Viburnum trilobum* which it replaces; both are cultivated and planted	Freq: SE; Occ: SC, SW, NW
Acer pseudoplatanus	Sycamore maple	Tree	Escaped from cultivation ; wind spreads prolific seeds	Occ: SE; Rare SC, SW
Paulownia tomentosa	Empress tree	Tree	Prolific seeds fall to start new seedlings	Freq: SE; Rare: SC, SW
**Pyrus calleryana*	Callery pear	Tree	Commonly planted street tree; becoming a problem as an escape	Freq: SE; Rare: SC, SW, NW

This list of invasive species is not meant to be definitive, but rather a guideline to some of the most troublesome species that degrade native plant communities in Pennsylvania. These species were chosen from a more extensive list compiled from adjacent state or regional lists of invasive plant species. Input was sought from experienced individuals familiar with Pennsylvania's flora from a field perspective. For a more extensive list of invasive species, please contact DCNR, Bureau of Forestry, P.O. Box 8552, Harrisburg, PA 17105-8552.

Pennsylvania Regions

Six Pennsylvania Regions were used to show state distribution:

SE = Southeast
NE = Northeast
SC = South Central
NC = North Central
SW = Southwest
NW = Northwest

Pennsylvania Distribution

Qualitative descriptors from ranges in Rhoads and Klein: (1993)— see printed resources

Freq. = Frequent
Occ. = Occasional
Rare

SITUATIONAL INVASIVES: Some plants become problematic invasive species to a given area. For example, some species are commonly planted for quick groundcover but can be a serious problem when planted, seeded or discarded near native herbaceous communities. These situational invasives require greater care and monitoring when planted near native plant communities. These species include: **Crown-Vetch, Coronilla varia; English Ivy, *Hedera heli;* *Tall fescue, *Festuca elatior;* *Orange day-lily, *Hemerocallis fulva.***

(ASTERIX): An **asterix (*)** denotes that the species has cultivars that are not known to be invasive. Cultivars are cultivated varieties of plant species bred for predictable attributes like shorter height, showier flowers, or colored foliage. An example is Norway Maple 'Crimson King' grown for its reddish leaves; this cultivar is not known to be invasive. Another example are the day lilies which have a host of cultivars that are not known as invasives. If you choose to plant a cultivar of an invasive species, ask a PA certified horticulturalist (PCH), your Penn State extension agent, or a professional horticulturalist about the cultivar's potential to be invasive.

Invasive Plants in Pennsylvania

Commonwealth of Pennsylvania
Mark Schweiker, Governor
Department of Conservation & Natural Resources
John C. Oliver, Secretary

What is an invasive plant?

"Invasive plant" is a name for a species that has become a weed pest, a plant which grows aggressively, spreads, and displaces other plants. Invasive plants tend to appear on disturbed ground, and the most aggressive can actually invade existing ecosystems. Invasive plants are generally undesirable because they are difficult to control, can escape from cultivation, and can dominate whole areas. In short, invasive plant infestations can be extremely expensive to control, as well as environmentally destructive.

A small number of invasives are "native," meaning they occurred in Pennsylvania before settlement by Europeans but became aggressive after the landscape was altered. However, most invasive plants arrived from other continents and are often referred to as "exotic," "alien," "introduced," or "non-native" invasives. An aggressive plant freed from its environmental, pest, and disease limits, can become an invader of other ecosystems. This brochure lists the most troublesome invasive plants that occur in Pennsylvania and impact native plant communities.

Characteristics of invasive plants

Invasive plants are noted for their ability to grow and spread aggressively. Invasive plants can be trees, shrubs, vines, grasses, or flowers, and they can reproduce rapidly by roots, seeds, shoots, or all three. Invasive plants tend to:

- not be native to North America;
- spread, reproducing by roots or shoots;
- mature quickly;
- if spread by seed, produce numerous seeds that disperse and sprout easily;
- be generalists that can grow in many different conditions; and
- be exploiters and colonizers of disturbed ground.

Impact of invasive plants

The primary reason to *not* landscape with invasives is that they are degrading our native environments. In fact, second only to habitat loss, invasives are a major factor in the decline of native plants. Plants like Kudzu, Purple Loosestrife, and Garlic Mustard are displacing native plants and degrading habitat for native insects, birds, and animals. Endangered, rare, and threatened native species of plants and animals are especially at risk because they often occur in such small populations that make them particularly vulnerable.

Another reason to avoid invasives is that invasive plants, even when grown in a cultivated yard, can spread, escape, and cause landscape maintenance weeding problems for years to come. In urban and suburban areas there is a good chance that the worst weeds on your property are escaped plants, like Japanese Honeysuckle, Multiflora Rose, Japanese Knotweed, and Oriental Bittersweet. In yards, gardens, fields, and parks these plants are very expensive to control.

What can I do?

The best insurance against future problems is to **avoid the use of known invasive plants** and educate others about the problems of invasives. This brochure lists many of the plants that are invasive in Pennsylvania. Plants on this list should be avoided because they can escape cultivation and aggressively move into surrounding ecosystems. One way to avoid invasives is to choose plants that are native to your area. Natives often are adapted to a specific environmental niche, and have natural controls that keep them in balance..

Minimize landscape disturbance. Invasive plants thrive on bare soil and disturbed ground where the native plant community has been displaced. The key to controlling invasives is to **protect healthy native plant communities.**

Use fertilizers wisely. Proper site preparation begins with a soil test before applying fertilizer. High nitrogen levels sometimes give an advantage to invasive species that are better adapted to using plentiful nutrients for explosive growth. For soil fertility, try using organic, slow-decomposing compost and mulches.

Have a land management plan for maintenance over time. It makes sense when designing a property to plan for future maintenance. Lawns are maintained by weekly mowing, while gardens are often hand-weeded. Meadows in Pennsylvania may need to be mowed every year. Woodlands are probably the lowest-maintenance landscape, but they too will need to be monitored and invasive plants removed.

Scout your property annually for invasives or other problems. The best way to control invasives is prevention, and prevention can only happen through vigilance. Listed in this brochure are resources to help property owners.

Remove invasives before they are a problem. Effective scouting or monitoring means that problems are found while they are still small and easily controllable. For instance, do not let invasive plants go to seed. Mechanical removal through digging or cutting is preferred. Large populations of invasives may need to be stopped chemically with spot applications of herbicide by trained individuals or by homeowners carefully following label instructions.

Replace invasive plants with native or non-invasive species. Invasives are good at exploiting bare soil and empty niches. When you remove an invasive plant, unless there is another plant substituted, the invasive will tend to come right back. What grows in the future depends largely on what is there now; so it is important to fill that niche with a desirable plant that will provide seed for the future.

Remove invasives first when their densities are low. This gives the most immediate success because invasive plant control works best where there is a functioning native plant community still in place which can move right into the empty niche.

- **Avoid using known invasive plants**
- **Minimize landscape disturbance**
- **Protect healthy native plant communities**
- **Use fertilizers wisely**
- **Have a land management plan for maintenance over time**
- **Scout (and keep scouting)**
- **Remove invasives before they become a problem**
- **Replace invasive plants with native or noninvasive species**
- **Remove invasives first where their densities are low.**

Revised from original text by Cyane Gresham

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A pressing problem

Recognition of the problem of invasive plants is growing, at the same time as damage to native ecosystems is mounting. Identifying invasive plants and understanding the potential damage they can cause is essential to stopping their spread and protecting native vegetation. Recent publications specifically on invasive plant control and a good field guide can help identify and avoid planting invasive plants. Try to learn as much as possible about this issue. The Internet is an excellent way to access the rapidly growing body of information on this topic.

For more information
Printed resources

"*Invasive Plants, Weeds of the Global Garden*." 1996. Brooklyn Botanic Garden, 1000 Washington Avenue, Brooklyn, NY 11225. ISSN #0362-5850

Bright, Chris and Starke, Linda. 1998. *Life Out of Bounds: Bioinvasion in a Borderless World.* WWNorton: Worldwatch. ISBN# 0393318141

Brown, Lauren. 1979. *Grasses, An Identification Guide.* Boston: Houghton Mifflin. ISBN# 0-395-27624-1

Darke, Rick. *The Color Encyclopedia of Ornamental Grasses.* Timber Press. ISBN# 0-88192-4644

Devine, R.S. 1999 *Alien Invasion, America's Battle with Non-Native Animals and Plants*. National Geographic Society. ISBN# 07922274490

Hoffman, Randy and Kearns, Kelly, eds. 1977. *Wisconsin Manual of Control Recommendations for Ecologically Invasive Plants.* WI BER, WIDNR, PO Box 7921, Madison, WI 53707.

"Landscaping With Native Plants." 2000. Brochure available from PA Dept. of Conservation and Natural Resources, Bureau of Forestry, PO Box 8552, Harrisburg, PA 17105-8552.

Marinelli, Janet. 1998. *Stalking the Wild Amaranth, Gardening in the Age of Extinction.* New York: Henry Holt. ISBN# 0-8050-4415-9

Natural Areas Journal. Natural Areas Association (NAA), 320 South Third Street, Rockford, IL 61104-2063. ISSN# 0885-8608 *See Internet site.*

Newcomb, Lawrence. 1977. *Newcomb's Wildflower Guide.* Boston: Little, Brown, and Co. ISBN# 0-316-60441-0

Petrides, G.A. 1988. *A Field Guide to Eastern Trees.* Boston: Houghton Mifflin; Peterson Field Guide Series, No. 11. ISBN# 0-395-90455-2

Rhoads, A.F. and Klein, W.M. 1993. *The Vascular Flora of Pennsylvania.* Philadelphia, PA: American Philosophical Soc. ISBN# 0-87169-207-4

Rhoads, A.F. and Block, T.A. 2000. *The Plants of Pennsylvania, An Illustrated Manual*. Philadelphia: University of Pennsylvania. ISBN# 0-8122-3535-5

Stein, Sara. 1997. *Planting Noah's Garden, Further Adventures in Backyard Ecology.* Boston: Houghton Mifflin. ISBN# 0-395-70960-1

Tennessee Exotic Pest Plant Council. 1997. *Tennessee Exotic Plant Management Manual.* From: Friends of Warner Parks, 50 Vaughn Road, Nashville, TN 37221. Tel (615) 370-8051 *Text on Internet site.*

Virginia Department of Conservation and Recreation. *Invasive Alien Plant Species.* Dept. of Conservation and Recreation, Div. of Natural Heritage, 1500 E. Main Street, Suite 312, Richmond, VA 23219. Tel (804) 786-7951 *Text on Internet site.*

Westbrooks, R.G. 1998. *Invasive Plants: Changing the Landscape of America, Factbook.* Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW); Washington, D.C. 109pp., US Government Printing Office, Washington D.C. 20402. *See Internet site.*

Internet

Brooklyn Botanic Garden, Invasive Plants, www.bbg.org/gardening/natural/invasive

Fed. Interagency Committee for the Management of Noxious and Exotic Weeds, refuges.fws.gov/ficmnewfiles/ficmnewhomepage.html

Morris Arboretum PA Flora Project, www.upenn.edu/paflora

Pennsylvania DCNR, Bureau of Forestry, www.dcnr.state.pa.us/forestry/pndi

Plant Conservation Alliance, Alien Plant Working Group, www.nps.gov/plants/alien

National Biological Information Infrastructure (President Clinton's Executive Order on Invasive Species, signed February 3, 1999), www.nbii.gov/invasive/pub.html

Natural Areas Association, www.natareas.org

New England Wild Flower Society, www.newfs.org/invasive/invasive.htm

The Nature Conservancy, Wildland Weeds Management and Research Program, tnc.weeds.ucdavis.edu

Southeast Exotic Pest Plant Council, www.webriver.com/tn-eppc

U.S. Department of Agriculture, Invaders Database System Noxious Weeds in the U.S. & Canada, invader.dbs.umt.edu/noxious_weeds

VA Dept. of Conservation and Recreation, Invasive Alien Plant Species of Virginia, www.state.va.us/~dcr/dnh/invproj.htm

Western Pennsylvania Conservancy, www.paconserve.org

THE RODALE INSTITUTE — Healthy Soil • Healthy Food • Healthy People

PENNSYLVANIA LANDSCAPE & NURSERY ASSOCIATION
www.plna.com

RECOMMENDED TREE SPECIES FOR COMMUNITIES

The following is a list of trees compiled for their characteristics as good urban trees. Before choosing a tree it is **extremely important** that the planting site be examined to assure that the tree is planted in a site that is suited for it's mature size and growing conditions. It is recommended that other reference materials such as **Street Tree Factsheets** or the **Manual of Woody Landscape Plants (Dirr)** be used to determine the growth requirements and tolerance of each tree.

SMALL TREES

A small tree has a mature height of 25-35 feet. These trees are suited for planting under electrical wires, adjacent to structures, or other small sites with limited growing space.

Hedge Maple – Acer campestre
Amur Maple – Acer ginnala
Thornless Cockspur Hawthorn – Crataegus crusgalli inermis
Washington Hawthorn – Crataegus phaenonpyrum 'Winter King' or 'Sentry'
Crabapples (many varieties)
- Columnar Siberian Crab
- Red Baron Crab
- Pink Spires
- Red Jewel
- Sentinnel
- Sugar Tyme
- Spring Snow no fruit, rounded
- Tschonoski

t - **American hornbeam** – Carpinus caroliniana
Canada Red Cherry – Prunus Virginia Shubert
***Japanese Flowering Cherry** – Prunus serrulata "Amanogawa', 'Kwanzan'
Shadblow/Serviceberry – Amelanchier x grandifolia 'Robin Hill', 'Autumn Billance' or 'Cumulus'
Mountain Ash (European or Korean) – Sorbus aucuparia or alnifolia
Japanese Tree Lilac – Syringa reticulata 'Ivory Silk' or 'Summer Snow'
Columnar Sargent Cherry – Prunus sargenti columnaris

MEDIUM TREES: mature height of 35-50 feet

Carolina Silverbell – Halesia Carolina Treeform
Golden Raintree – Koelreuteria paniculata Treeform
Amur Corktree – Phellodenron amurense 'Macho' or 'Shademaster' male only
European Hornbeam – Carpinus betulus (also upright var. 'Fastigiata')
***Callery Pear** – Pyrus calleryana 'Redspire', 'Aristocrat', 'Chanticlear', or 'Capital'(upright) Stay away from 'Bradford'
Sawtooth Oak – Quercus acutissima
Ruby Red Horsechestnut – Aesculus x carnea 'Briotii'
Imperial Honeylocust – Gleditsia tricanthos inermis 'Imperial' (small variety of honeylocust)

LARGE TREES: mature height of 50 feet or more

Hackberry – Celtis occidentalis 'Magnifica' or 'Praire Pride'
London Planetree – Platanus acerifolia 'Bloodgood'
t – Northern Red Oak – Quercus rubra
Pin Oak – Quercus palustris
Shumard Oak – Quercus shumardii
English Oak – Quercus robur
Shingle Oak – Quercus imbricaria
Honeylocust – Gleditsia tricanthos inermis 'Skyline', 'Shademaster'
Ginkgo – Gingko biloba
Green Ash – Fraxinus pennsylvanica 'Summit', 'Patmore', 'Urbanite'
White Ash – Fraxinus Americana 'Rosehill' or 'Autumn Purple'
Zelkova – Zelkova serrata 'Green Vase'
Little Leaf Linden – Tilia cordata 'Greenspire' or others
Silver Linden – Tilia tomentosa
Redmond Linden – Tilia Americana 'Redmond'
t - Sweetgum – Liquidambar styraciflua ('Roundifolia' is seedless)
t – Blackgum or Tupelo – Nyssa sylvatica
Turkish Filbert – Corylus colurna
Kentucky Coffee Tree – Gymnocladus dioica
Hardy Rubber Tree – Eucommia ulmoides
Dawn Redwood – Metasequoia glyptostroboides
Bald Cypress – Taxodium distichum
Chinese or Lacebark Elm – Ulmus parvifolia 'Dynasty' or 'Ohio'
Groenveldt Elm – Ulmus hollandica 'Groenveldt'
Pagodatree or Scholartree – Sophora japonica 'Regent' 'Princeton Upright'
***Norway Maple** – Acer platanoides 'Superform', 'Emerald Green', 'Summer Shade', 'Cleveland', 'Columnar'
***Red Maple** – Acer rubrum 'Red Sunset', 'October Glory', 'Armstrong', 'Karpick'
Sycamore Maple – Acer pseudoplantus

*** -** These trees have been over planted in many communities in Northeastern Pennsylvania. Check your community before planting.

t– Signifies somewhat difficult to transplant.

Note: Some of the trees listed above are extremely hard to find in local nurseries, but worth looking for.

DIVERSITY: When planting trees in our communities we must remember the lessons learned from Dutch Elm Disease. If we plant too many of just one or two species of tree and a disease begins to attack that species we will lose most of our community trees. A good rule of thumb is to not let one species of tree account for more than 10% of the overall trees in a community. If 10 different species of trees were chose and planted in equal amounts this 10% rule would be met.

For more information regarding appropriate tree species for communities contact:

Bald Eagle State Forest District - Service Forester
Penn State Cooperative Extension

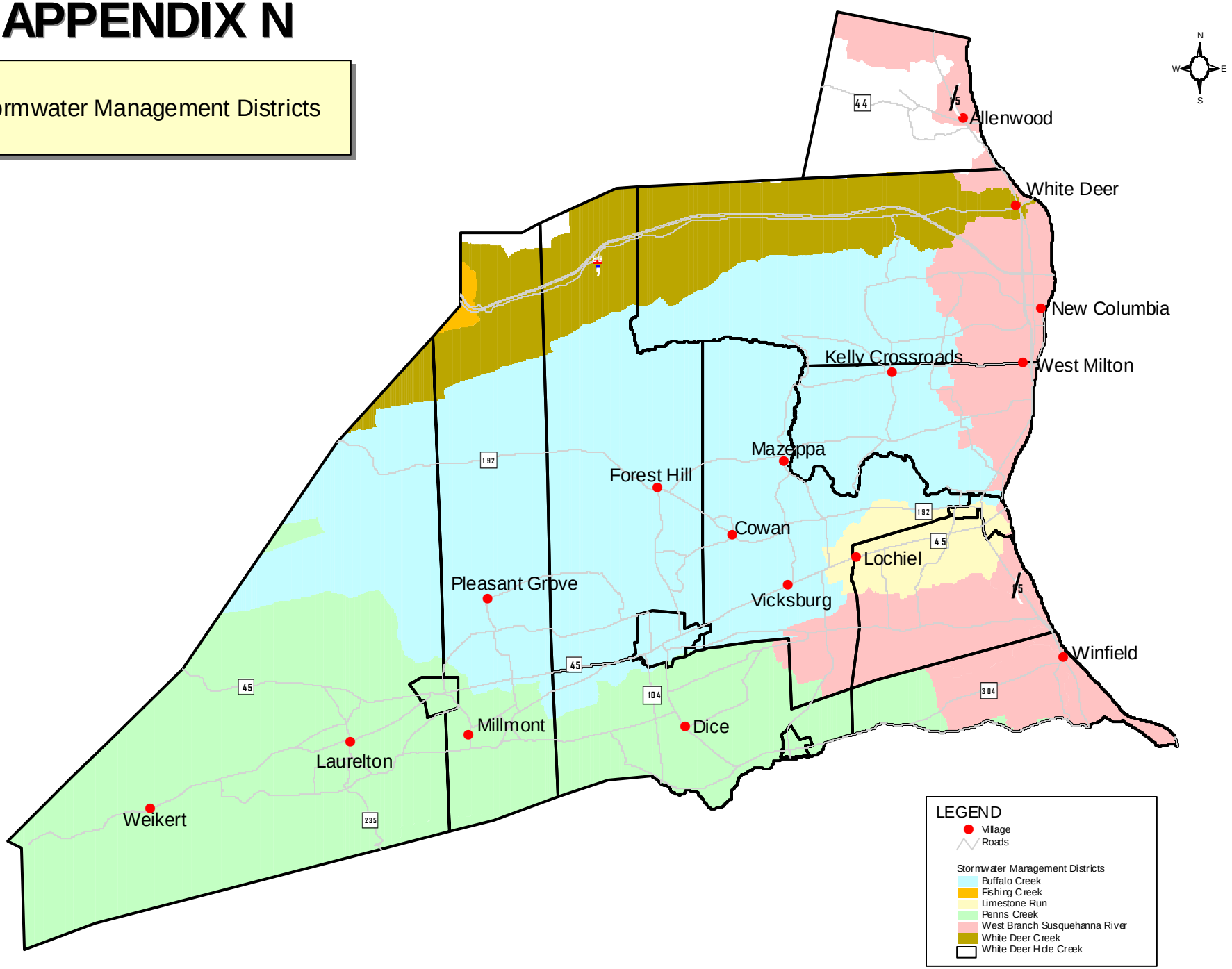
APPENDIX N

Stormwater Management Districts

APPENDIX N

APPENDIX N

Stormwater Management Districts



APPENDIX O

Stormwater Credits

APPENDIX O

APPENDIX O

Stormwater Credits For Effective Site Planning

0.1 Stormwater Credits

In Pennsylvania, there are many programs at both the State and local level that seek to minimize the impact of land development. Critical areas, forest conservation, and local stream buffer requirements are designed to reduce nonpoint source pollution. Non-structural practices can play a significant role in reducing water quality impacts and are increasingly recognized as a critical feature of every stormwater BMP plan, particularly with respect to site design. In most cases, non-structural practices must be combined with structural practices to meet stormwater requirements. The key benefit of non-structural practices is that they can reduce the generation of stormwater from the site; thereby reducing the size and cost of stormwater storage. In addition, they can provide partial removal of many pollutants. Non-structural practices have been classified into six broad groups and are designed to mesh with existing state and local programs (e.g., forest conservation, stream buffers, etc.). To promote greater use, a series of six stormwater credits are provided for designers that use these site planning techniques.

Credit 1. Natural Area Conservation
Credit 2. Disconnection of Rooftop Runoff
Credit 3. Disconnection of Non-Rooftop Runoff
Credit 4. Sheet Flow to Buffers
Credit 5. Grass Channel
Credit 6. Environmentally Sensitive Development

This Appendix describes each of the credits for the six groups of non-structural practices, specifies minimum criteria to be eligible for the credit, and provides an example of how the credit is calculated. Designers should check with the Municipal Engineer to ensure that the credit is applicable to their jurisdiction.

In general, the stormwater sizing criteria provide a strong incentive to reduce impervious cover at development sites. Storage requirements for all five stormwater sizing criteria are directly related to impervious cover. Thus, significant reductions in impervious cover result in smaller required storage volumes and, consequently, lower BMP construction costs.

These and other site design techniques can help to reduce impervious cover, and consequently, the stormwater treatment volume needed at a site. The techniques presented in this Chapter are considered options to be used by the designer to help reduce the need for stormwater BMP storage capacity. Due to local safety codes, soil conditions, and topography, some of these site design features will be restricted. Designers are encouraged to consult with the Municipal Engineer to determine restrictions on non-structural strategies.

NOTE: In this chapter, *italics* indicate mandatory performance criteria, whereas suggested design criteria are shown in normal typeface.

These credits are an integral part of a project's overall stormwater management plan and BMP storage volume calculation. Therefore, use of these credits shall be documented at the initial (concept) design stage, documented with submission of final grading plans, and verified with "as-built" plans. If a planned credit is not implemented, then BMP volumes shall be increased appropriately to stormwater sizing criteria.

Table O.1 Summary of Stormwater Credits

Stormwater Credit	WQ_v	Re_v	Cp_v or Q_p
Natural Area Conservation	Reduce Site Area	No credit. Use as receiving area w/Percent Area Method.	Forest/meadow CN for natural areas
Disconnection of Rooftop Runoff	Reduced R_v	No credit. Use with Percent Area Method.	Longer tc (increased flow path). CN credit.
Disconnection of Non-Rooftop Runoff	Reduced R_v	No credit. Use with Percent Area Method.	Longer tc (increased flow path) CN credit
Sheet Flow to Buffers	Subtract contributing site area to BMP	Reduced Re_v	CN credit
Open Channel Use	May meet WQ_v	Meets Re_v	Longer tc (increased flow path) No CN credit
Environmentally Sensitive Development	Meets WQ_v	Meets Re_v	No CN credit tc may increase

O.2 Natural Area Conservation Credit

A stormwater credit is given when natural areas are conserved at development sites, thereby retaining pre development hydrologic and water quality characteristics. A simple WQ_v credit is granted for all **conservation areas permanently protected under conservation easements or other locally acceptable means**. Examples of natural area conservation include:

- forest retention areas
- non-tidal wetlands and associated buffers
- other lands in protective easement (floodplains, open space, steep slopes)
- stream systems

Under the credit, a designer can subtract conservation areas from total site area when computing the water quality volume. **The volumetric runoff coefficient, R_v, is still calculated based on the percent impervious cover for the entire site.**

As an additional incentive, the post development curve number (CN) used to compute the Cp_v or Qp2, and Qp10 for all natural areas protected by conservation easements can be assumed to be woods in good condition when calculating the total site CN.

As an example, the required WQ_v for a ten acre site with three acres of impervious area and three acres of protected conservation area before the credit would be:

WQ_v = [(P)(R_v)(A)]/12; where P= 1.2”, R_v= 0.05+0.009(30%)
WQ_v = [(1.2”) (0.32)(10 acres)]/12 = 0.320 ac-ft
Under the credit, three acres of conservation are subtracted from total site area, which yields a smaller storage volume:
WQ_v =[(P)(R_v)(A)]/12; where P=1.2”, R_v=0.05+0.009(30%)
WQ_v =[(1.2”)(0.32)(10-3 acres)]/12 = 0.224 ac-ft

The recharge requirement (Re_v) is not reduced using this credit.

Criteria for Natural Area Credit

To receive the credit, the proposed conservation area:

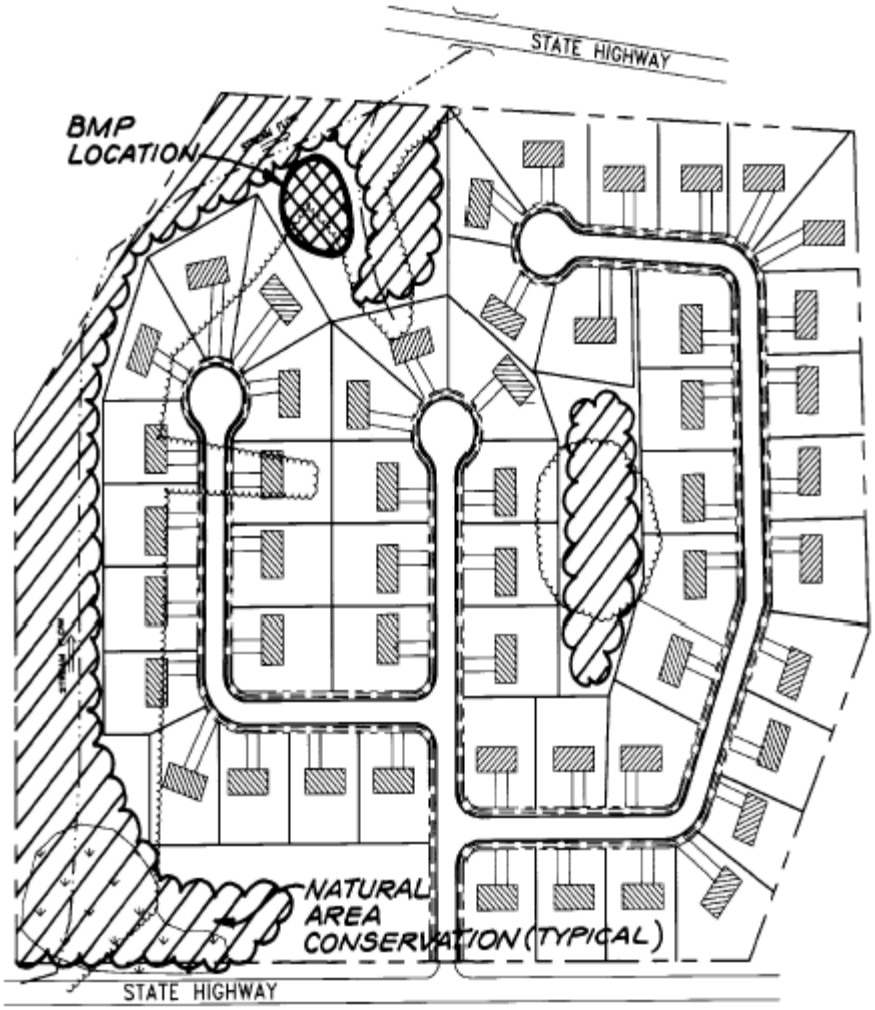
- *Shall not be disturbed during project construction (e.g., cleared or graded) except for temporary impacts associated with incidental utility construction or mitigation and aforestation projects.*

- *Shall be protected by having the limits of disturbance clearly shown on all construction drawings and delimited in the field except as provided for above.*

- *Shall be located within an acceptable conservation easement or other enforceable instrument that ensures perpetual protection of the proposed area. The easement must clearly specify how the natural area vegetation shall be managed and boundaries will be marked* [Note: managed turf (e.g., playgrounds, regularly maintained open areas) is not an acceptable form of vegetation management], *and shall be located within the project site.*

Example of Calculating Natural Area Credit

Site Data - 51 Single Family Lots
Area = 38 ac
Conservation Area = 7.0 ac
Impervious Area = 13.8 ac
R_v = .38, P= 1.2”
Post dev. CN = 78
Original WQ_v = 1.44 ac-ft
Original Re_v = 0.25 ac-ft
Original Cp_v = 1.65 ac-ft



Computation of Stormwater Credits

$WQ_v = [(P)(R_v)(A)]/12$
$= [(1.2)(.38)(38.0 - 7.0 \text{ ac})]/12$
$= 1.18$ ac-ft

Re_v = Same as original
(However, area draining to Natural Area may be used with the Percent Area Method)
CN reduced from 78 to 75

O.3 Disconnection of Rooftop Runoff Credit

A credit is given when rooftop runoff is disconnected and then directed to a pervious area where it can either infiltrate into the soil or filter over it. The credit is typically obtained by grading the site to promote overland filtering or by providing bioretention areas on single family residential lots.

If a rooftop is adequately disconnected, the disconnected impervious area may be deducted from total impervious cover (therefore reducing WQ_v). In addition, disconnected rooftops can be used to meet the Re_v requirement as a non-structural practice using the percent area method.

Post development CN's for disconnected rooftop areas used to compute Cp_v and Q_p can be assumed to be woods in good condition.

Criteria for Disconnection of Rooftop Runoff Credit

The credit is subject to the following restrictions:

- *Rooftop cannot be within a designated hotspot.*
- *Disconnection shall cause no basement seepage.*
- *The contributing area of rooftop to each disconnected discharge shall be 500 square feet or less.*
- *The length of the "disconnection" shall be 75 feet or greater, or compensated using Table O.1*
- *Dry wells, french drains, raingardens, or other similar storage devices may be utilized to compensate for areas with disconnection lengths less than 75 feet. (See Table O.1 and Figure O.1, dry wells are prohibited in "D" soils)*
- *In residential development applications, disconnections will only be credited for lot sizes greater than 6000 sq. ft.*
- *The entire vegetative "disconnection" shall be on an average slope of 5% or less.*
- *The disconnection must drain continuously through a vegetated channel, swale, or through a filter strip to the property line or BMP.*
- *Downspouts must be at least 10 feet away from the nearest impervious surface to discourage "re-connections".*
- *For those rooftops draining directly to a buffer, only the rooftop disconnection credit or the buffer credit may be used, not both.*

Figure O.1 Schematic of Dry Well

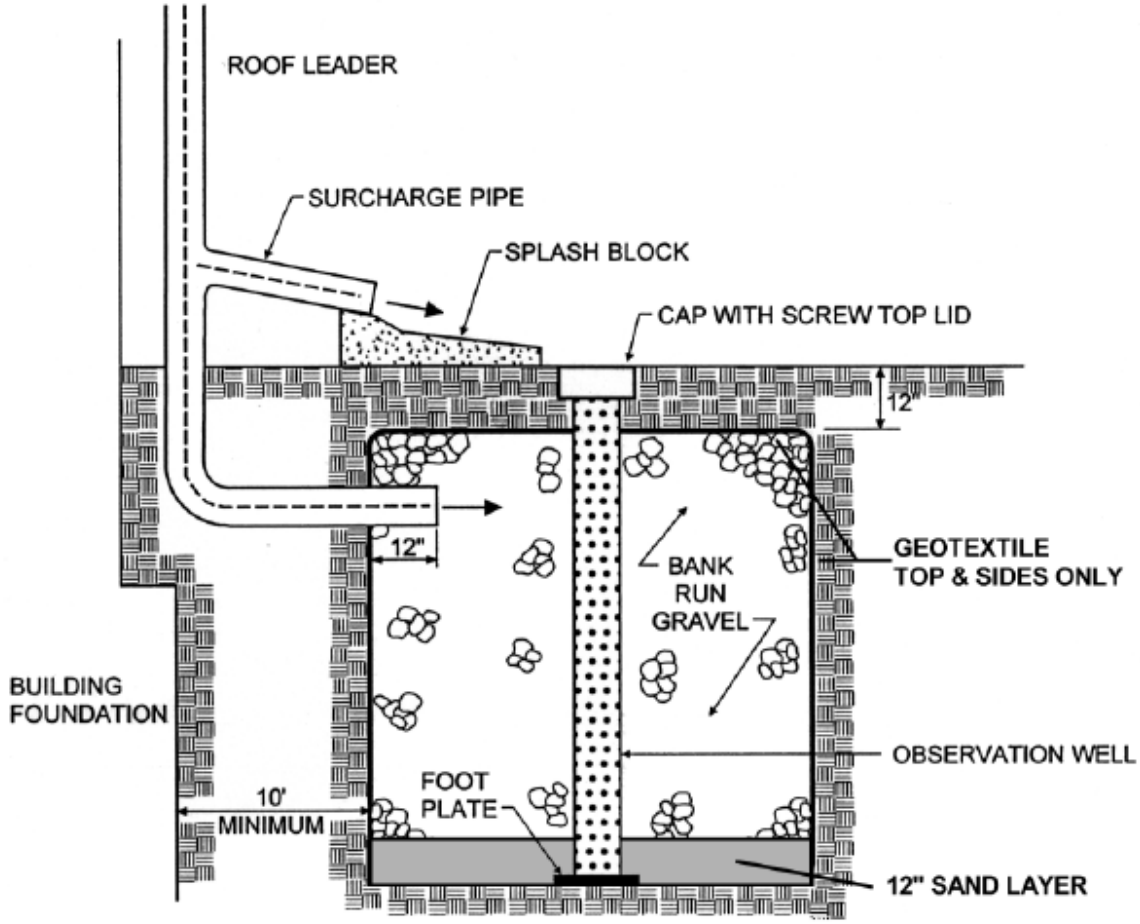


Table O.1 Rooftop Disconnection Compensation Storage Volume Requirements (Per Disconnection Using Drywells, Raingardens, etc.)

Disconnection Length Provided	**0 - 14 ft.**	**15 - 29 ft.**	**30 - 44 ft.**	**45 - 59 ft.**	**60 - 74 ft.**	**≥75 ft.**
% WQ_v Treated by Disconnect	**0%**	**20%**	**40%**	**60%**	**80%**	**100%**
% WQ_v Treated by Storage	**100%**	**80%**	**60%**	**40%**	**20%**	**0%**
Max. Storage Volume*	**48 cu-ft.**	**39 cu-ft.**	**30 cu-ft.**	**21 cu-ft.**	**12 cu-ft.**	**0 cu-ft.**

*Assuming 500 square feet roof area to each downspout.

Example of Using the Rooftop Disconnection Credit

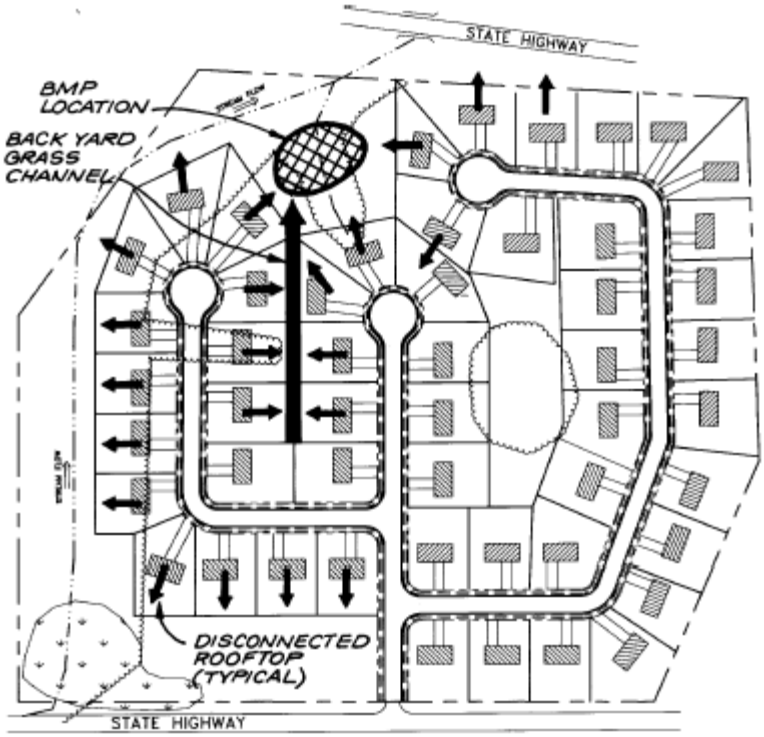
Site Data - 51 Single Family Lots
Area = 38 ac, ½ ac lots
Original Impervious Area = 13.80 ac
Original R_v = 0.38
Post dev. CN = 78
# of Disconnected Rooftops = 22
Original WQ_v = 1.44 ac-ft
Original Re_v = 0.25 ac-ft
Original Cp_v = 1.65 ac-ft

60% B Soils
40% C Soils
Composite *S*=0.218 (21.8%)

22 Lots Disconnected w/5
Downspouts each
2500 sf. each lot

Net impervious area reduction =
(22)(2500)/43560 = 1.3 ac

Net Impervious Area =
13.8 - 1.3 = 12.5 ac



Computation of Stormwater Credit:

New R_v= 0.05+0.009 (12.5 ac/38 ac) = 0.35
WQ_v= [(1.2)(.35)(38 ac)]/ 12 = 1.33 ac-ft

Required Re_v (Percent Area Method)
Re_v = 21.8%x13.8 ac. =3.01 ac
Re_v treated by disconnection =1.3 ac
Re_v remaining for treatment = 1.71 acres non structurally or 0.14 ac-ft structurally

CN reduced from 78 to 76

O.4 Disconnection of Non-Rooftop Runoff Credit

Credit is given for practices that disconnect surface impervious cover runoff by directing it to pervious areas where it is either infiltrated into the soil or filtered (by overland flow). This credit can be obtained by grading the site to promote overland vegetative filtering or providing bioretention areas on single family residential lots.

These "disconnected" areas can be subtracted from the impervious area when computing WQ_v. In addition, disconnected surface impervious cover can be used to meet the Re_v requirement as a non-structural practice using the percent area method.

Criteria for Disconnection of Non-Rooftop Runoff Credit

The credit is subject to the following restrictions:

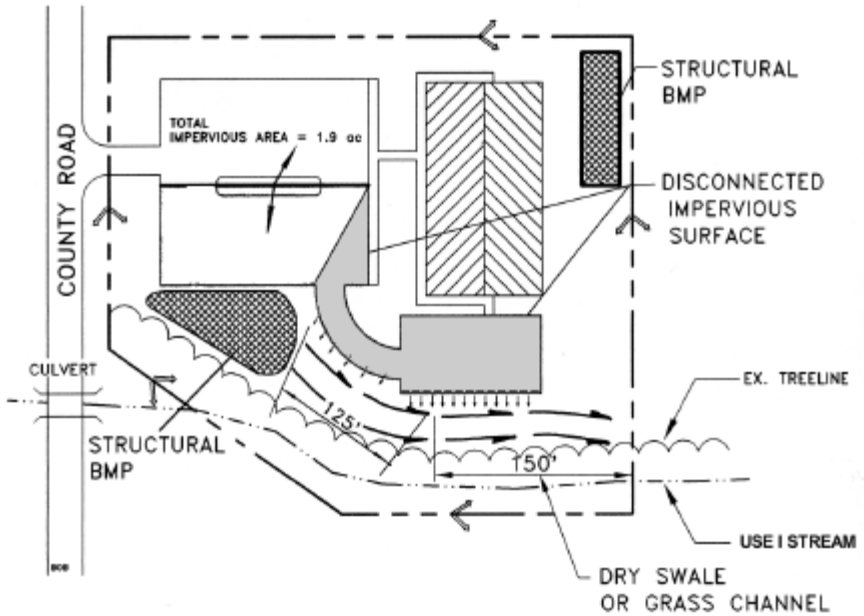
- *Runoff cannot come from a designated hotspot.*
- *The maximum contributing impervious flow path length shall be 75 feet.*
- *The disconnection shall drain continuously through a vegetated channel, swale, or filter strip to the property line or BMP.*
- *The length of the "disconnection" must be equal to or greater than the contributing length.*
- *The entire vegetative "disconnection" shall be on an average slope of 5% or less.*
- *The surface impervious area to any one discharge location cannot exceed 1,000 ft^2.*
- *Disconnections are encouraged on relatively permeable soils (HSG's A and B).*
- *If the site cannot meet the required disconnect length, a spreading device, such as a french drain, gravel trench or other storage device may be needed for compensation.*
- *For those areas draining directly to a buffer, only the non rooftop disconnection credit or the stream buffer credit can be used, not both.*

Example of Calculating the Non-Rooftop Disconnection Credit

Site Data -Community Center
Area = 3.0 ac
Original Impervious Area =
1.9 ac = 63.3%
Original R_v = .62
Post dev. CN = 83
B Soils, S = 0.27
Original WQ_v = 8102 ft^3
Original Re_v = 1688 ft^3
Original Cp_v = N/A

0.33 ac of surface imperviousness disconnected

Net impervious area reduction
1.9 - 0.33 = 1.57 ac



Computation of Stormwater Credit:

New R_v = 0.05+.009 (1.57 ac/3.0 ac)= .52
WQ_v = [(1.2)(0.52)(3.0 ac)] 12 = 0.16 ac-ft (6795 $ft.^3$)

Required Re_v (Percent area method)
$Re_v = (S)(Ai)$ = (0.27)(1.9 ac) = 0.51 ac
Re_v treated by disconnection = 0.33 ac
Re_v remaining for treatment = 0.18 ac non structurally or 595.8 cf structurally

Post developed CN may be reduced

O.5 Sheetflow to Buffers Credit

This credit is given when stormwater runoff is effectively treated by a natural buffer to a stream or forested area. Effective treatment is achieved when pervious and impervious area runoff is discharged to a grass or forested buffer through overland flow. The use of a filter strip is also recommended to treat overland flow in the green space of a development site.

The credits include:

1. The area draining by sheet flow to a buffer is subtracted from the total site area in the WQ_v calculation.

2. The area draining to the buffer contributes to the recharge requirement, Re_v.

3. A *wooded* CN can be used for the contributing area if it drains to a forested buffer.

Criteria for Sheetflow to Buffers Credit

The credit is subject to the following conditions:

- *The minimum buffer width shall be 50 feet as measured from bankfull elevation or centerline of the buffer.*

- *The maximum contributing length shall be 150 feet for pervious surfaces and 75 feet for impervious surfaces.*

- *Runoff shall enter the buffer as sheet flow. Either the average contributing overland slope shall be 5.0% or less, or a concrete level spreading device shall be used where sheet flow can no longer be maintained.*

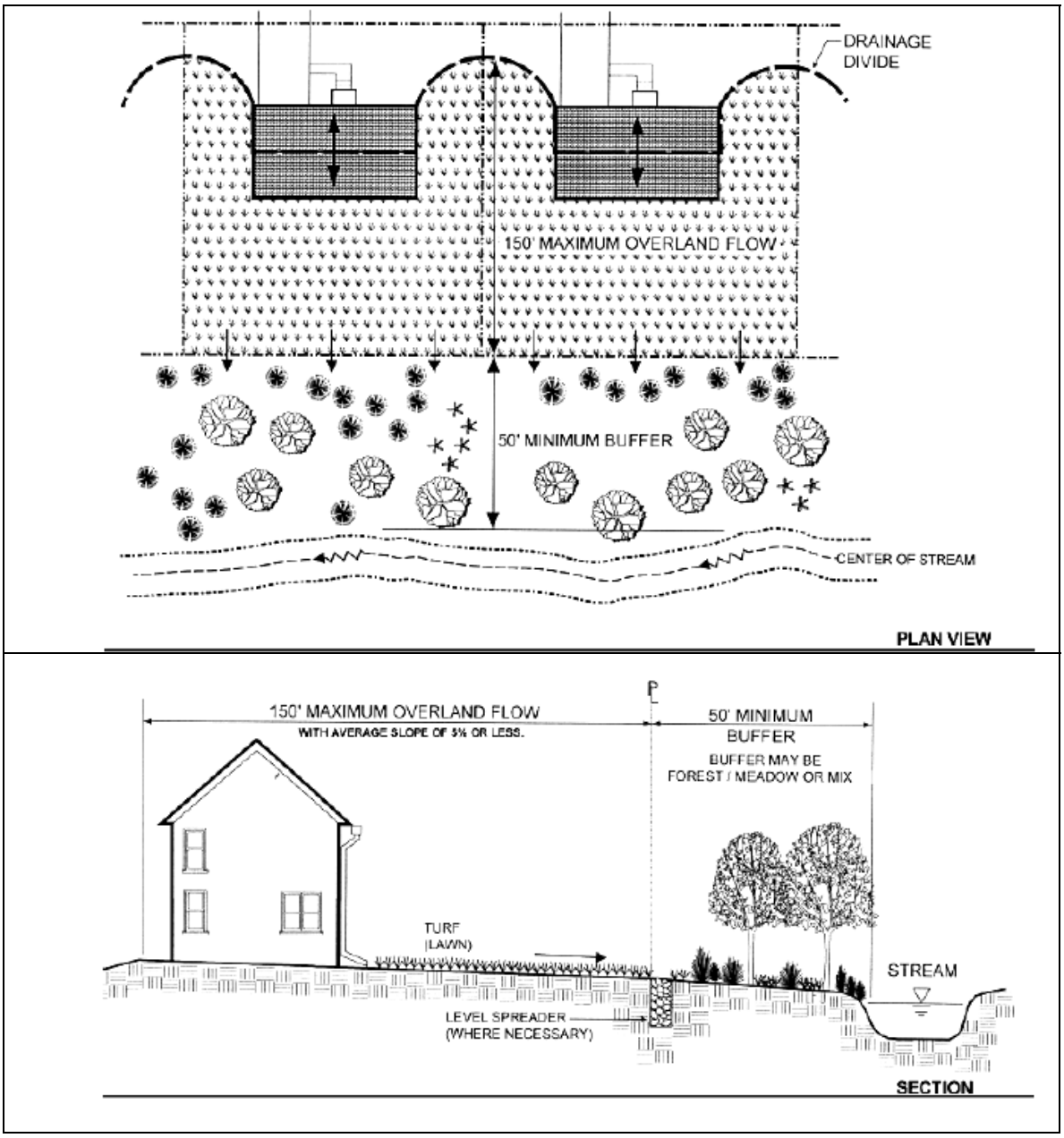
- *Not applicable if rooftop or non rooftop disconnection is already provided.*

- *Buffers shall remain unmanaged other than routine debris removal.*

- *Shall be located within an acceptable conservation easement or other enforceable instrument that ensures perpetual protection of the proposed area. The easement must clearly specify how the natural area vegetation shall be managed and boundaries will be marked* [Note: managed turf (e.g., playgrounds, regularly maintained open areas) is not an acceptable form of vegetation management].

Figure O.2 illustrates how a buffer or filter strip can be used to treat stormwater from adjacent pervious and impervious areas.

Figure O.2 Example of Sheetflow to Buffers Credit

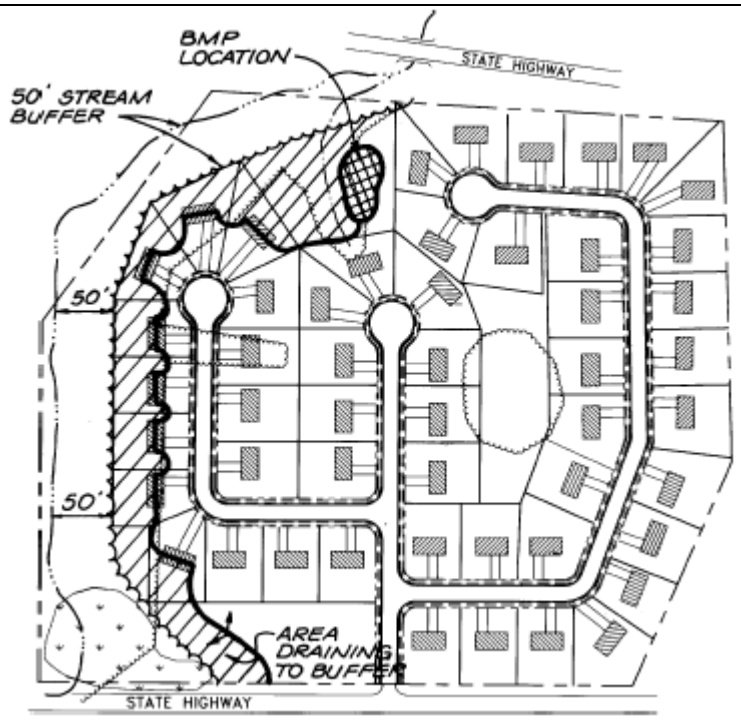


Example of Using the Sheetflow to Buffers Credit

Site Data - 51 Single Family
Area = 38.0 ac
Original Impervious Area =
13.8 ac = 36.3%
Original R_v = .38
Post-dev. CN = 78

Original WQ_v = 1.44 ac-ft
Original Re_v = 0.24 ac-ft
Original Cp_v = 1.65 ac-ft

Credit
5.0 ac draining to buffer/filter strip
Rooftops represent 3% of site
imperviousness = 0.41 ac



Computation of Stormwater Credits

New drainage area = 38 ac - 5 ac= 33.0 ac
R_v remains unchanged to BMP; R_v=0.05+0.009(36.3)=0.38

WQ_v =[(P)(R_v)(A)]/12
=[(1.2)(0.38)(33.0 ac.)]/12
= 1.25 ac-ft

Required Re_v (Percent Area Method)
Re_v = 21.8%×13.8 ac. = 3.01 acres
Re_v treated by disconnection = 0.41 acres
Re_v remaining for treatment = 2.60 acres non structurally or 0.207 ac-ft structurally

CN is reduced slightly

O.6 Grass Channel Credit (in lieu of Curb and Gutter)

Credit may be given when open grass channels are used to reduce the volume of runoff and pollutants during smaller storms (e.g., < 1 inch). The schematic of the grass channel is provided in Figure O.3.

Use of a grass channel will automatically meet the Re_v for impervious areas draining into the channel. However, Re_v for impervious areas not draining to grass channels must still be addressed. If designed according to the following criteria, the grass channel will meet the WQ_v as well.

CNs for channel protection or peak flow control (Cp_v or Q_p) will not change.

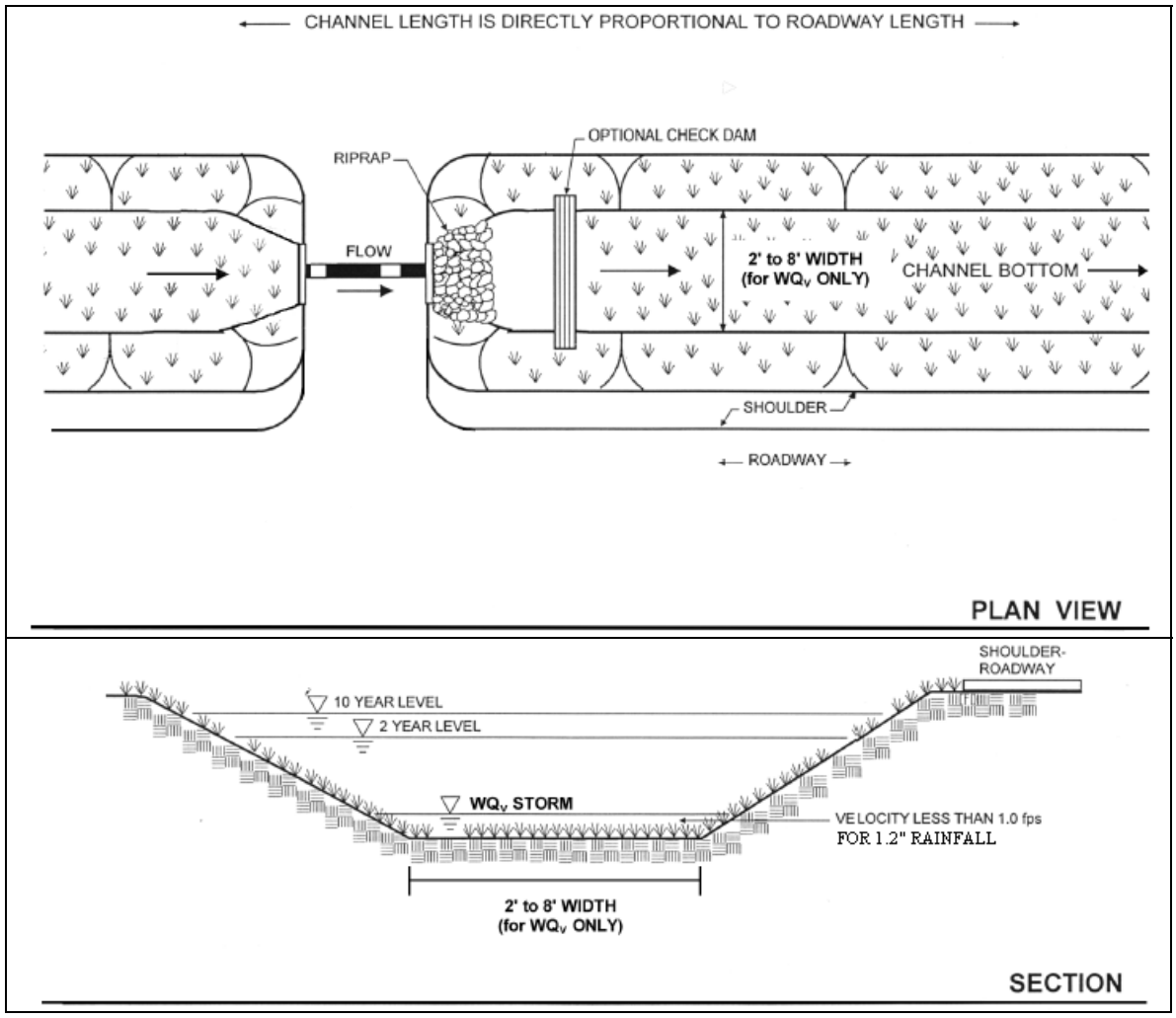
Criteria for the Grass Channel Credit

The WQ_v credit is obtained if a grass channel meets the following criteria:

- *The maximum flow velocity for runoff from the 1.2 inch rainfall shall be less than or equal to 1.0 fps (see Appendix L for methodology to compute flowrate).*
- *The maximum flow velocity for runoff from the 10-year design event shall be non-erosive.*
- *The bottom width shall be 2 feet minimum and 8 feet maximum.*
- *The side slopes shall be 3:1 or flatter.*
- *The channel slope shall be less than or equal to 4.0%.*
- *Not applicable if rooftop disconnection is already provided (see Credit O.2).*

An example of a grass channel is provided in Figure O.3.

Figure O.3 Example of Grass Channel

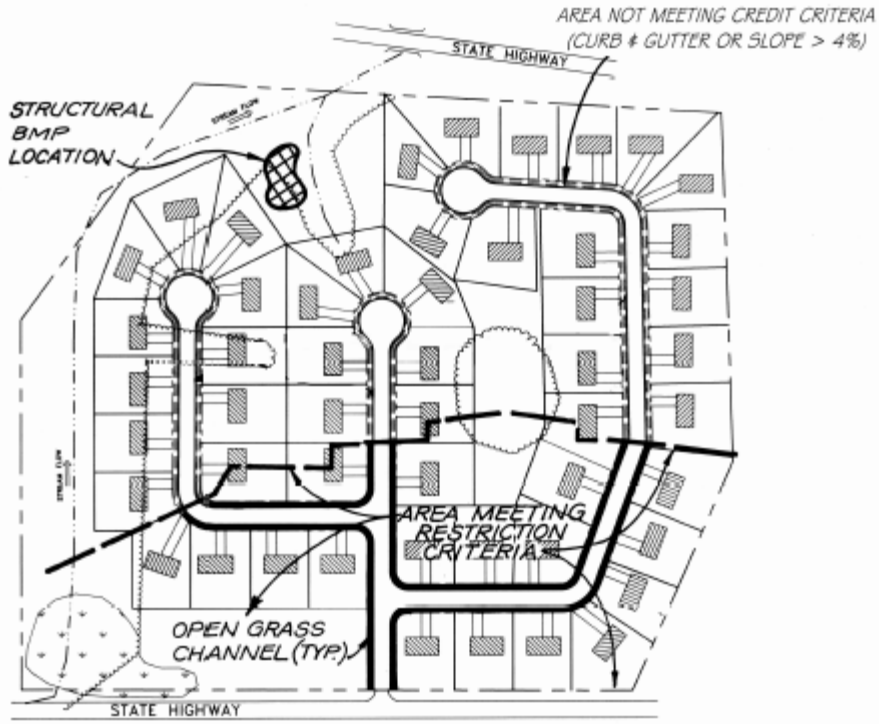


Example of Grass Channel Credit

Site Data - 51 Single Family Residences
Area = 38.0 ac
Original Impervious Area = 13.8 = 36.3%
R_v = 0.38
CN = 78

Original WQ_v = 1.44 ac-ft
Original Re_v = 0.25 ac-ft
Original Cp_v = 1.65 ac-ft

Credit
12.5 ac meet grass channel criteria



Computation of Stormwater Credits

New WQ_v Area = 38 ac - 12.5 ac = 25.5 ac
WQ_v = [(1.2)(0.38)(25.5 ac)]/12
= 0.97 ac-ft

Required Re_v (Percent Area Method)
Rev =21.8%×13.8 ac =3.01 ac
4.5 ac of imperviousness lie within area drained by grass channels, and
4.5 ac > 3.01 ac
Re_v requirement is met
Cp_v and Q_p: No change

O.7 Environmentally Sensitive Development Credit

Credit is given when a group of environmental site design techniques are applied to low density or residential development. The credit eliminates the need for structural practices to treat both the Re_v and WQ_v and is intended for use on large lots.

Criteria for Environmentally Sensitive Development Credit

These criteria can be met without the use of structural practices in certain low density residential developments when the following conditions are met:

For Single Lot Development:

- *Total site impervious cover is less than 15%.*
- *Lot size shall be at least two acres.*
- *Rooftop runoff is disconnected in accordance with the criteria outlined in Section O.3.*
- *Grass channels are used to convey runoff versus curb and gutter.*

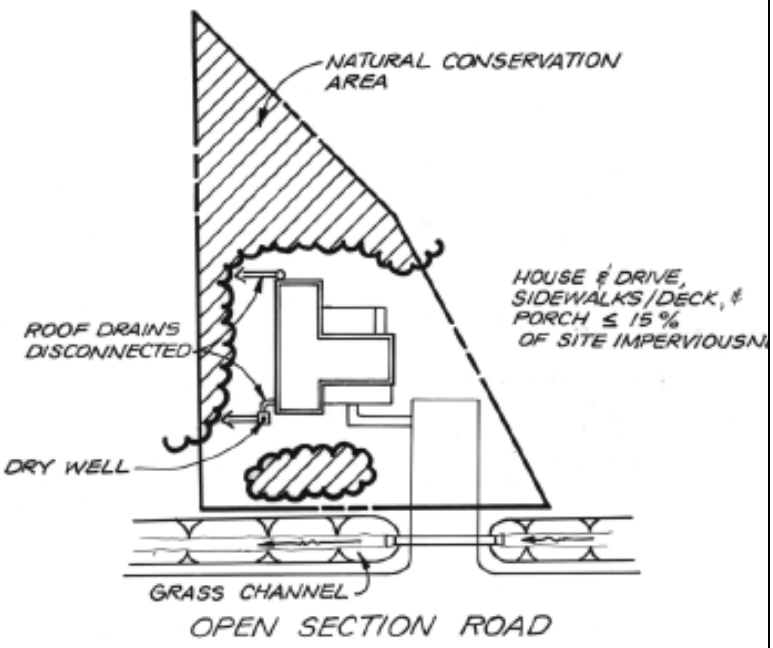
For Multiple Lot Development:

- *Total site impervious cover is less than 15%.*
- *Lot size shall be at least two acres if clustering techniques are not used.*
- *If clustering techniques are used, the average lot size shall not be greater than 50% of the minimum lot size as identified in the appropriate local zoning ordinance and shall be at least one half acre.*
- *Rooftop runoff is disconnected in accordance with the criteria outlined in Section O.3.*
- *Grass channels are used to convey runoff versus curb and gutter.*
- *A minimum of 25% of the site is protected in natural conservation areas (by permanent easement or other similar measure).*
- *The design shall address stormwater (Re_v, WQ_v, Cp_v, and extreme events) for all roadway and connected impervious surfaces.*

Example of Environmentally Sensitive Development Credit

Site Data - 1 Single Family Lot
Area = 2.5 ac
Conservation Area = 0.6 ac
Impervious Area = .35 ac (includes adjacent road surface) = 14%
B soils
$R_v = 0.05+0.009(14) = 0.18$
CN = 65

WQ_v : Use P=0.2 as I<15%
$WQ_v = [(0.2)(A)]/12$
$= [(0.2)(2.5)]/12\times(43560 \text{ ft/ac})$
$= 1{,}815 \text{ ft}^3$
$Re_v = [(S)(R_v)(A)]\ 12$
$= [(0.27)(0.18)(2.5)]/\ 12\times(43{,}560\text{ft/ac})$
$= 441.0 \text{ ft}^3$



Computation of Stormwater Credits:

WQ_v is met by site design
Re_v is met by site design
Cp_v: No change in CN, tc may be longer which would reduce Q_p requirements

APPENDIX P

Stormwater Tables, Calculations, Curve Numbers, IDF Charts, etc.

APPENDIX P

Appendix P-1 Runoff Curve Numbers
Source: NRCS (SCS) TR-55

Appendix P-2 Runoff Coefficients for the Rational Method
Source: Rawls, W.J., S.L. Long, and R.H. McCuen, 1981. Comparison of Urban Flood Frequency Procedures. Preliminary Draft Report prepared for the Soil Conservation Service, Beltsville, Maryland.

Appendix P-3: Design Storm Rainfall Amount (Inches)
Source: NRCS (SCS) TR-55

Appendix P-4: NRCS (SCS) Type II Rainfall Distribution

Appendix P-5: Penndot Storm Intensity-Duration-Frequency Curve Region 3
Source: "Field Manual of Pennsylvania Department of Transportation" Storm Intensity-Duration-Frequency Charts P D T - I D F" May 1986.

Appendix P-6: Manning Roughness Coefficients
Roughness Coefficients (Manning's "n") For Overland / Sheet Flow (From U.S. Army Corps of Engineers & NRCS TR-55)

Appendix P-7: Release Rate Percentage Procedures

Appendix P-8: Method for Computing Peak Discharge for Water Quality Storm

Appendix P-9: Acceptable Stormwater Best Management Practices (BMP's)

Appendix P-10: Computations of the Channel Protection Storage Volume (Cp_v)

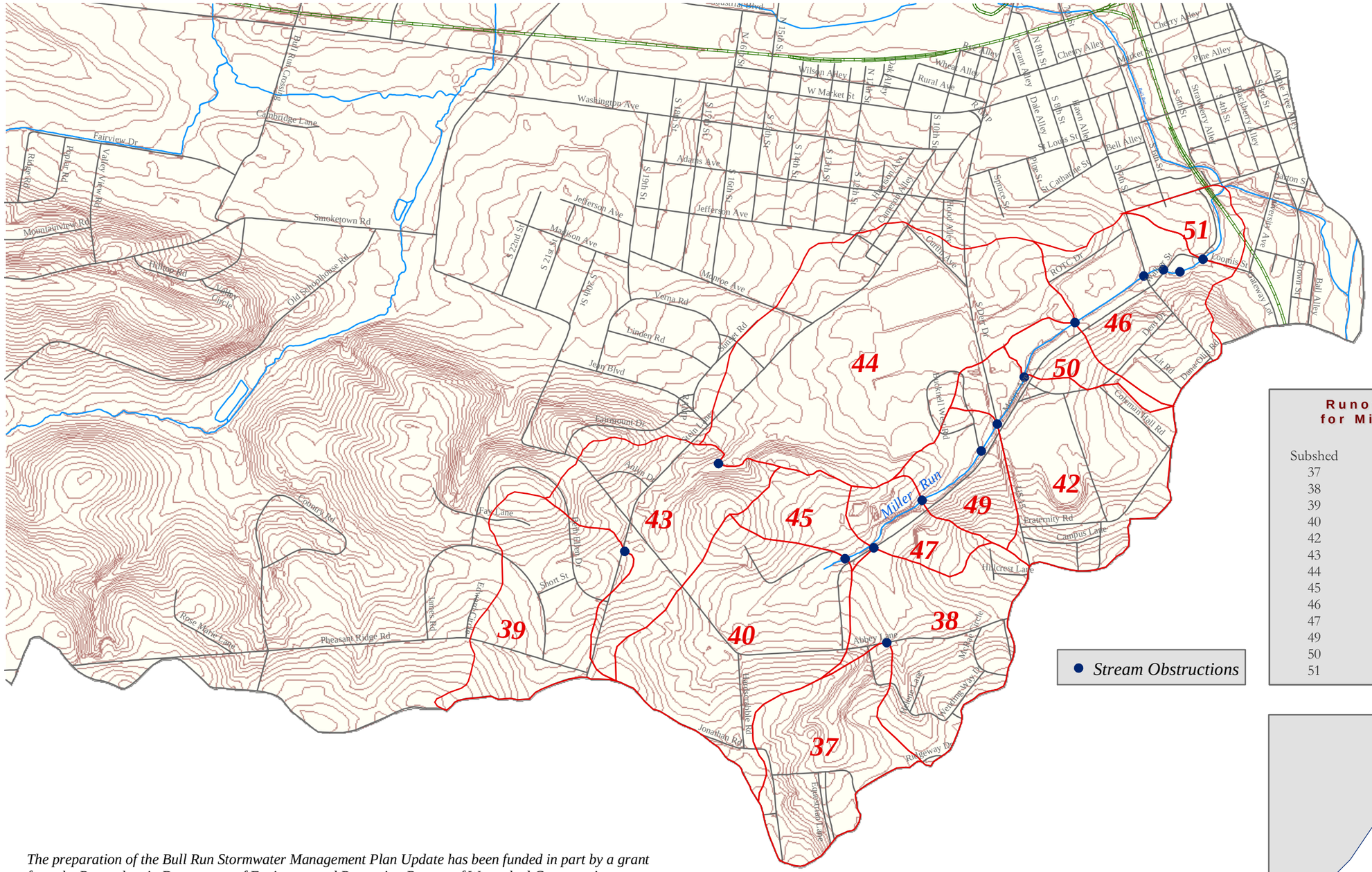
Appendix P-11: Calculations for Hypothetical Development Scenario

APPENDIX Q

Stormwater Performance Standards Maps

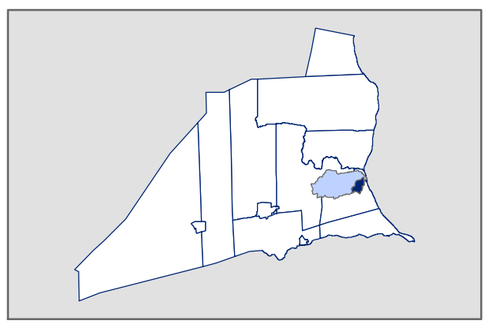
APPENDIX Q

PLATE 4 - MILLER RUN SUBWATERSHED



Runoff Curve Numbers for Miller Run Subsheds

Subshed	Weighted Curve	Future Weighted Curve
37	76.938	76.673
38	77.066	77.064
39	80.430	80.086
40	71.943	71.804
42	83.827	83.232
43	75.506	75.506
44	76.146	75.622
45	77.255	77.255
46	80.556	84.224
47	82.699	82.699
49	82.560	78.846
50	78.852	78.852
51	88.058	88.058



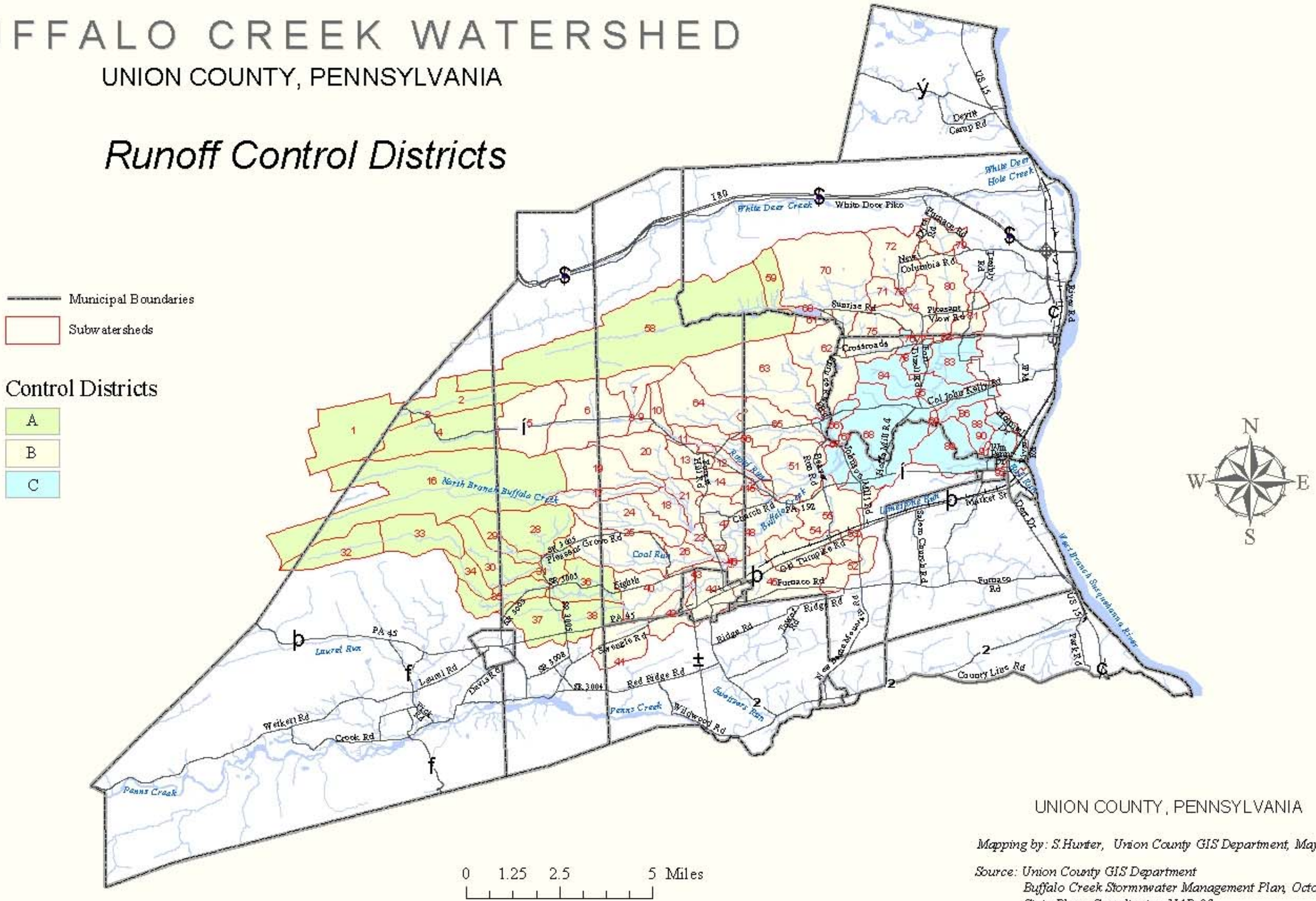
The preparation of the Bull Run Stormwater Management Plan Update has been funded in part by a grant from the Pennsylvania Department of Environmental Protection Bureau of Watershed Conservation.

Source: Union County GIS Department, January 2002
State Plane Coordinates, North Zone, NAD 83

BUFFALO CREEK WATERSHED

UNION COUNTY, PENNSYLVANIA

Runoff Control Districts



UNION COUNTY, PENNSYLVANIA

Mapping by: S.Hunter, Union County GIS Department, May 2002

Source: Union County GIS Department
Buffalo Creek Stormwater Management Plan, October 1998
State Plane Coordinates, NAD 83

APPENDIX R

Stormwater Facilities Maintenance Agreement

APPENDIX R

APPENDIX R

STORMWATER MANAGEMENT FACILITIES MAINTENANCE AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 20__, by and between **Harry A. Knight**, (hereinafter the "Landowner"), Box 20, Mifflinburg, Union County, Pennsylvania, 17844;

AND

Hartley Township, (hereinafter the "Municipality") Union County; Pennsylvania, P.O. Box 128, Laurelton, Union County, Pennsylvania, 17835.

WITNESSETH

WHEREAS, the Landowner is the fee simple owner of a certain tract of real property as recorded and vested by deed in the land records of Union County, Pennsylvania, Recorder of Deeds Office Deed Book 15 at Page 59, and identified by Tax Parcel Identification Number(s) 011-024-56-(hereinafter "Property");

WHEREAS, the Landowner intends to build and develop this Property by constructing permanent improvements as more fully shown upon a plan prepared by XYZ Engineering Corp. entitled "Final Land Development Plan of Hartley Acres" (hereinafter "Plan") dated February 2, 2002, which is expressly made a part hereof as approved by the Union County Planning Commission;

WHEREAS, the "Plan" for Hartley Acres provides for the detention, retention, infiltration, and/or conveyance of stormwater within the confines of the Property; and

WHEREAS, the Municipality and the Landowner and his heirs, successors and assigns, including an homeowners or other association of owners, agree that the health, safety, and welfare of the residents of the Municipality require that on-site stormwater management facilities be constructed and maintained on the Property; and

WHEREAS, the Union County Planning Commission requires, through the implementation of the Union County Subdivision and Land Development Ordinance, that stormwater management facilities as shown on the Plan be constructed and adequately maintained by the Landowner, his heirs, successors and assigns.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions, the parties hereto, intended to be legally bound hereby, agree as follows:

1. The on-site stormwater management facilities shall be constructed by the Landowner, his heirs, successors and assigns, in accordance with the terms, conditions and specifications identified on the Plan.

2. The Landowner, his heirs, successors, and assigns do hereby establish a permanent easement for stormwater management facilities and access to said facilities as more fully shown upon the Plan. The stormwater management facility easement shall run with and bind the land and fee simple owners, their heirs, executors, administrators, successors and assigns.

3. The Landowner, his heirs, successors and assigns, shall maintain the stormwater management facilities in good working condition, acceptable to the Municipality so that they are performing their design functions. This includes maintenance of all pipes, channels, swales and other structures built to convey stormwater to the facility as well as all structures, improvements, and vegetation provided to control the quantity and quality of the stormwater.

4. The Landowner, his heirs, successors and assigns shall inspect the stormwater management facilities and submit an inspection report annually. The purpose of the inspection is to assure safe and proper functioning of the facilities. The inspection report shall cover the entire facility including berms, outlet structure, pond areas, access roads, etc. Deficiencies shall be noted in the inspection report. At a minimum, maintenance inspections shall be performed in accordance with the following schedule:
    - Annually for the first 5 years after the construction of the stormwater facilities,
    - Once every 2 years thereafter, or
    - During or immediately upon the cessation of a 100 year or greater precipitation event.
5. The Landowner, his heirs, successors and assigns, hereby grant permission to the Municipality, its authorized agents and employees upon presentation of proper identification, to enter upon the Property at reasonable times, and to inspect the stormwater management facilities whenever the

Municipality deems necessary. The purpose of the inspection is to assure safe and proper functioning of the facilities. The inspection shall cover the entire facilities, berms, outlet structures, pond areas, access roads, etc. When inspections are conducted, the Municipality shall give the Landowner, his heirs, successors and assigns copies of the inspection report with findings and evaluations.

6. All reasonable costs for said inspections shall be born by the Landowner, his heirs, successors and assigns and payable to the Municipality.

7. In the event the Landowner, his heirs, successors and assigns, fails to maintain the stormwater management facilities in good working condition acceptable to the Municipality, the Municipality may enter upon the Property and take such necessary and prudent action to maintain said stormwater management facilities and to charge the costs of the maintenance and/or repairs to the Landowner, his heirs, successors and assigns. This provision shall not be construed as to allow the Municipality to erect any structure of a permanent nature on the land of the Landowner, outside of any easement belonging to the Municipality. It is expressly understood and agreed that the Municipality is under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Municipality.

8. The Landowner, his heirs, successors and assigns, will perform maintenance in accordance with the maintenance schedule for the stormwater management facilities including sediment removal as outlined on the Maintenance Plan and schedule described in Exhibit A, attached hereto.

9. In the event the Municipality, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like on account of the Landowner, his heirs, successors and assigns failure to perform such work, the Landowner, his heirs, successors and assigns, shall reimburse the Municipality upon demand, within 30 days of receipt of invoice thereof, for all costs incurred by the Municipality hereunder. If not paid within said 30-day period, the Municipality may enter a lien against the Property in the amount of such costs, or may proceed to recover its costs through proceedings in equity or at law as authorized under the provisions of the Municipal Lien Law.

10. The Landowner, his heirs, successors and assigns, shall indemnify the Municipality and its agents and employees against any and all damages, accidents, casualties, occurrences or claims which might arise or be asserted against the Municipality for the construction, presence, existence or maintenance of the stormwater management facilities by the Landowner, his heirs, successors and assigns.

11. In the event a claim is asserted against the Municipality, its agents or employees, the Municipality shall promptly notify the Landowner, his heirs, successors and assigns, and they shall defend, at their own expense, any suit based on such claim. If any judgment or claims against the Municipality, its agents or employees shall be allowed, the Landowner, his heirs, successors and assigns shall pay all costs and expenses in connection therewith.

12. In the advent of an emergency or the occurrence of special or unusual circumstances or situations, the Municipality may enter the Property, if the Landowner, his heirs, successors and assigns are not immediately available, without notification or identification, to inspect and perform necessary maintenance and repairs, if needed, when the health, safety or welfare of the citizens is at jeopardy. However, the Municipality shall notify the landowner, his heirs, successors and assigns of any inspection, maintenance, or repair undertaken within 5 business days of the activity. The Landowner, his heirs, successors and assigns shall reimburse the Municipality for its costs.

13. No structures may be placed within or on the Stormwater Management Facilities and easement and no landscaping or grading is permitted within said easement which would impede stormwater flow or alter the course of the flow within said easement, nor impede the functioning of stormwater inlets, outlet structures, infiltration beds, or any other element of the stormwater management facility.

14. This agreement shall be recorded in the land records of Union County, Pennsylvania, and shall constitute a covenant running with the property and/or an equitable servitude, and shall be binding on the landowner, his administrators, executors, assigns, heirs and any other successors in interest in perpetuity.

IN WITNESS WHEREOF, intending to be legally bound hereby, the parties hereto have set their hands and seals the day and year first above written

ATTEST: **HARTLEY TOWNSHIP**

_____ _____
Chairman

_____
Vice Chairman

_____
Secretary

ATTEST: **LANDOWNER**

_____ _____
Harry A. Knight

STATE OF PENNSYLVANIA **)**
)SS:
COUNTY OF UNION **)**

Hartley Township, County of Union, Pennsylvania. I, _____, a Notary Public in and for the County and State aforesaid, whose commission expires on the _____day of _____, 20__, do hereby certify that Harry A. Knight, whose name is signed to the foregoing Agreement bearing the date of the _____day of _____, 20__, personally appeared before me (known to me or satisfactorily proven) in my said County and State and acknowledges that he executed the same for the purpose therein contained.

GIVEN UNDER MY HAND THIS _____ day of _____, 20___.

_____
NOTARY PUBLIC

This Agreement shall be recorded among the land records of Union County, Pennsylvania and shall constitute a covenant running with the Property and/or equitable servitude, and shall be binding on the Landowner, his administrators, executors, assigns, heirs and any other successors in interests, in perpetuity.

RECORDED in the Office of the Recorder of Deeds in and for Union County, in Record Book_____, Page _____.

WITNESS my hand and official seal this _____day of _____, 20___.

_____

RECORDER OF DEEDS

EXHIBIT A

STORMWATER MANAGEMENT FACILITIES MAINTENANCE SCHEDULE

The Landowner, his heirs, successors and assigns shall maintain all stormwater management and permanent erosion and sediment pollution control facilities that are proposed as part of the Plan.

The Landowner, his heirs, successors and assigns shall complete a visual inspection of all stormwater management and permanent erosion and sediment pollution control facilities at least once every six months and immediately after significant storm events during the first year and in all subsequent years until all lots within the said development are sold. The visual inspection shall include:

(1) An examination of the stormwater collection, conveyance, detention and infiltration facilities for debris deposition (such debris may include, but is not limited to, aggregate material, leaves, grass clippings, and soil material); and

(2) An examination of the stormwater facilities for settlement, sinkholes, structural cracking, excessive vegetation, erosion, etc.

The Landowner, his heirs, successors and assigns shall immediately repair any damage to the stormwater management and permanent erosion and sedimentation pollution control facilities. The Landowner, his heirs, successors and assigns shall place topsoil on all areas that experience minor erosion and shall seed and mulch such areas immediately. The Landowner, his heirs, successors and assigns repair damage to riprap areas using material that meets or exceeds the riprap gradation size specified on the construction detail sheets of the Plan.

The Landowner, his heirs, successors and assigns shall notify the Hartley Township Supervisors, Union County Conservation District and the Union County Planning Commission prior to initiating any major repair activities.

APPENDIX S

PA Code for Campgrounds

APPENDIX S

CHAPTER 19. ORGANIZED CAMPS AND CAMPGROUNDS

GENERAL PROVISIONS

Sec.
19.1. Definitions.
19.2. Submission of plans to Department.
19.3. Waiver of requirements.
19.4. Water supply.
19.5. Plumbing.
19.6. Sewage disposal.
19.7. Bathing places.
19.8. Vector control.

PERMITS

19.11. General requirement.
19.12. Application.
19.13. Issuance.
19.14. Revocation and suspension.

TOILET FACILITIES

19.21. General requirement.
19.22. Design.
19.23. Maintenance.
19.24. Toilet room.
19.25. Organized camps.
19.26. Campgrounds.
19.27. Soap and towels.

SANITARY STATIONS

19.31. General requirement.
19.32. Ratio.
19.33. Construction.
19.34. Public warning.

GARBAGE AND REFUSE

19.41. Collection.
19.42. Storage.
19.43. Disposal.
19.44. Cleaning of area.

Authority

The provisions of this Chapter 19 issued under sections 1917-A and 1920-A of The Administrative Code of 1929 (71 P. S. §§ 510-17 and 510-20), unless otherwise noted.

Source

The provisions of this Chapter 19 adopted September 18, 1971, effective September 18, 1971, 1 Pa.B. 1921; renumbered from 25 Pa. Code Chapter 191, June 7, 1996, effective June 8, 1996, 26 Pa.B. 2707, unless otherwise noted. Immediately preceding text appears at serial pages (167993) to (168000).

Cross References

This chapter cited in 28 Pa. Code § 17.11 (relating to minimum program activities); 28 Pa. Code § 17.31 (relating to minimum program activities); and 28 Pa. Code § 17.61 (relating to minimum program activities).

GENERAL PROVISIONS

§ 19.1. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

Campground—A portion of land used for the purpose of providing a space or spaces for trailers or tents, for camping purposes regardless of whether a fee has been charged for the leasing, renting or occupancy of the space.

Garbage—Putrescible wastes, except sewage and body waste, including animal and vegetable offal.

Organized camp—A combination of programs and facilities established for the primary purpose of providing an outdoor group living experience for children, youth and adults, with social, recreational and educational objectives and operated and used for 5 or more consecutive days during one or more seasons of the year.

Person—An individual, firm, partnership, company, corporation, trustee, association, county, authority, the Commonwealth or a public or private entity.

Refuse—Nonputrescible wastes generally regarded and classified as rubbish, trash, junk and similar designations which have been rejected by the owner or possessor as useless or worthless.

Sanitary station—A facility used for disposing of sewage from trailer holding tanks.

Sewage—A substance which contains any of the waste products or excrementitious or other discharge from the bodies of human beings or animals.

Sewerage system—A community or individual system, publicly or privately owned, for the collection and disposal of sewage and industrial wastes of a liquid nature, including various devices for the treatment of the sewage or industrial wastes.

Tent—A portable lodging unit usually made of skins, canvas, plastic or strong cloth stretched and usually sustained by poles, and dependent upon separate toilet and lavatory facilities.

Trailer—A vehicular portable structure built on, or designed to be mounted, on a chassis or wheels, or constructed as an integral part of a self-propelled

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vehicle for use as a temporary dwelling for travel, recreation and vacation and commonly known as travel trailers, pick-up coaches, motor homes or camping trailers.

Trailer or *tent space*—A parcel of land in an organized camp or campground for the placement of a single trailer or tent and the exclusive use of its occupants.

Water supply—A source of water, and water treatment, storage, transmission and distribution facilities.

§ 19.2. Submission of plans to Department.

(a) Before work is begun in the construction, remodeling or alteration of an organized camp or campground or in the conversion of an existing establishment or facility to an organized camp or campground, properly prepared plans and specifications shall be submitted to and approved by the Department.

(b) The plans and specifications shall include, if applicable, data relating to the grounds, buildings, equipment, sewage disposal, water supply, including plumbing, refuse disposal and other information that may be required by the Department.

§ 19.3. Waiver of requirements.

The Department may waive compliance with one or more provisions of this chapter for specific events as long as the lives and health of the public or the persons on the premises will not be adversely affected thereby.

§ 19.4. Water supply.

(a) Water used in the operation of an organized camp or campground shall be provided from a supply approved by the Department. Approval of a water supply shall be based upon satisfactory compliance with construction standards for water supplies approved by the Department.

(b) The water supply shall be adequate in quantity and shall meet the bacteriological and chemical water standards of the Department.

(c) An unapproved water supply shall be made inaccessible to the public in a manner deemed satisfactory to the Department.

§ 19.5. Plumbing.

(a) Plumbing shall be sized, installed and maintained so as to carry adequate quantities of water to required locations throughout the organized camp or campground and to properly convey sewage and liquid wastes from the establishment of the sewerage or sewage disposal system.

(b) Plumbing shall serve to prevent contamination of the water supply and may not create an insanitary condition or nuisance.

§ 19.6. Sewage disposal.

Sewage disposal systems serving an organized camp or campground shall be approved by the Department. Approval shall be based upon satisfactory compliance with Chapter 73 (relating to standards for sewage disposal facilities) and The Clean Streams Law (35 P. S. § 691.1—691.1001).

§ 19.7. Bathing places.

The construction, modification, maintenance and operation of a bathing place in an organized camp or campground shall be subject to the provisions of the Public Bathing Law (35 P. S. § 672—680d) and the rules and regulations of the Department.

§ 19.8. Vector control.

Adequate measures for the control of arthropods and rodents which the Department deems a public health hazard shall be taken in a manner satisfactory to the Department.

PERMITS

§ 19.11. General requirement.

A person may not operate at a place within this Commonwealth, and a person may not permit to be operated on his premises within this Commonwealth, an organized camp or campground unless the operator or owner possesses a valid permit from the Department. The permit shall be in addition to the registration requirements of organized camps under act of November 10, 1959 (P. L. 1400, No. 497) (35 P. S. §§ 3001—3004).

§ 19.12. Application.

Application for a permit shall be made to the Department on forms provided by the Department.

§ 19.13. Issuance.

(a) The Department will issue a permit for the operation of an organized camp or campground if it is satisfied that this chapter has been met.

(b) The permit shall be valid for 1 calendar year from date of issuance unless revoked or suspended by the Department.

(c) A separate permit shall be issued for each organized camp site or campground and may not be transferable or assignable.

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§ 19.14. Revocation and suspension.

(a) A permit may be revoked or suspended at any time if the Department finds that the organized camp or campground is maintained, operated or occupied in violation of this chapter.

(b) The Department may order an organized camp or campground to close and cease operation if a situation is present which is inimical to the health of the occupants.

TOILET FACILITIES

§ 19.21. General requirement.

Organized camps and campgrounds shall provide toilet facilities on the premises for the public which are separate for each sex.

§ 19.22. Design.

Toilet facilities, including rooms and fixtures, shall be of a sanitary design and readily cleanable.

§ 19.23. Maintenance.

Toilet facilities shall be kept in a clean condition and in good repair.

§ 19.24. Toilet room.

Each toilet room shall meet the following requirements:

(1) Doors shall be self-closing.
(2) Adequate ventilation to the outside shall be provided.
(3) Toilet tissue shall be provided.
(4) Easily cleanable receptacles shall be provided for waste materials.
(5) Receptacles for women shall be covered.

§ 19.25. Organized camps.

(a) Toilet facilities in organized camps shall be provided in the ratios indicated in the following table:

Number of Tent or Trailer Spaces	*Number of Toilet Seats*		*Number of Lavatories*		*Number of Urinals*
	Male	*Female*	*Male*	*Female*	*Male*
1—20	1	2	1	2	1
Each additional 20 persons	+1	+1	+1	+1	+1

(b) Urinals for males or urinals specifically designed for females may be provided in lieu of toilet seats but may not consist of more than 1/3 of the required number of toilet seats.

(c) Organized camps which do not provide overnight lodging and serve a minimum of one meal per day are not subject to the requirements in subsection (a) but shall provide toilet and lavatory facilities as deemed adequate by the Department.

§ 19.26. Campgrounds.

(a) Toilet facilities in campgrounds shall be in addition to the requirements for sanitary stations as indicated in §§ 19.31—19.34 (relating to sanitary stations) and shall be provided in the ratios indicated in the following table:

Number of Persons	*Number of Toilet Seats*		*Number of Lavatories*		*Number of Urinals*
	Male	*Female*	*Male*	*Female*	*Male*
1—15	1	1	1	1	1
16—30	1	2	2	2	1
31—45	2	2	3	3	1
46—60	2	3	3	3	2
61—80	3	4	4	4	2
81—100	3	4	4	4	2
Each additional 1—100 spaces	+1	+1	+1	+1	+1

(b) Urinals specifically designed for females may also be provided in lieu of toilet seats, but for not more than 1/3 of the required number of toilet seats.

§ 19.27. Soap and towels.

(a) Lavatories in new and existing organized camps and campgrounds where campers do not provide their own soap and individual towels, soap and single-service towels shall be provided.

(b) The use of a common towel is prohibited.

SANITARY STATIONS

§ 19.31. General requirement.

New organized camp or campground operations which provide parking spaces for trailers shall provide sanitary stations in order that the removal and disposing of sewage from trailer holding tanks shall be accomplished in a sanitary manner.

Cross References

This section cited in 28 Pa. Code § 19.26 (relating to campgrounds).

§ 19.32. Ratio.

Each new organized camp or campground shall provide a sanitary station in the ratio of one for every 100 trailer spaces or fractional part thereof.

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Cross References

This section cited in 28 Pa. Code § 19.26 (relating to campgrounds).

§ 19.33. Construction.

Each sanitary station shall consist of at least the following:

(1) A 4-inch sewer pipe which shall be connected to an approved sewage disposal system, surrounded at the inlet end by a concrete apron sloped to the drain.

(2) A suitable fly-tight cover which shall be provided to the 4-inch sewer pipe.

(3) A water outlet, with the necessary appurtenances and connected to a water supply system to permit a washdown of the immediate adjacent areas after each use.

Cross References

This section cited in 28 Pa. Code § 19.26 (relating to campgrounds).

§ 19.34. Public warning.

Each water outlet used for washdown purposes at sanitary stations shall conspiciously display at all times a sign stating: ''Notice, This Water For Flushing and Cleaning Purposes Only.''

Cross References

This section cited in 28 Pa. Code § 19.26 (relating to campgrounds).

GARBAGE AND REFUSE

§ 19.41. Collection.

The collection of garbage and refuse shall be conducted in a sanitary manner and as often as necessary to prevent a nuisance.

§ 19.42. Storage.

(a) Garbage and refuse containing food wastes shall, prior to disposal, be kept in leak-proof, nonabsorbent, rust and corrosion-resistant containers of adequate number, which shall be kept covered with tight-fitting lids, when filled or stored or not in continuous use, but any other manner of garbage and refuse storage may be used if approved by the Department.

(b) Other refuse shall be stored in containers, rooms or areas of sufficient number and size in a manner so as to prevent arthropod or rodent problems and other nuisances.

§ 19.43. Disposal.

When disposal of garbage or refuse is accomplished within or upon the premises of the organized camp or campground, the disposal facilities shall be operated and maintained so as not to create a nuisance or a health hazard.

§ 19.44. Cleaning of area.

Adequate cleaning facilities shall be provided, and each container, room or area shall be thoroughly cleaned after each emptying or removal of garbage and refuse.

[Next page is 20-1.]

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APPENDIX T

Example Letter of Credit

APPENDIX T

APPENDIX T

EXAMPLE LETTER OF CREDIT

DATE:_____

County of Union
Union County Planning Commission
1610 Industrial Boulevard, Suite 100
Lewisburg, PA 17837

RE: Irrevocable Unconditional Letter of Credit
Credit No._____

Gentleman:

Effective immediately, by order and for the account of _____ we hereby authorize you to draw on us at sight up to an aggregate amount of _____ United States Dollars ($_____).

This Irrevocable Letter of Credit sets forth the full terms of our obligation to you, and such undertaking shall not in any way be diminished, amplified, or otherwise modified by any agreement in which this Credit is referred to or to which this Credit relates; any such reference shall not be deemed to incorporate herein by reference any agreement. This Letter of Credit relates to a Performance Guaranty Agreement dated _____ by and between the County of Union and the person or entity above named for whose account this Credit is established.

We engage with you that drafts drawn under and in compliance with the terms of this Credit will be duly honored.

The Bank's right of reimbursement under this Letter of Credit is secured by an assigned deposit account of a like amount, and deposited in the name of _____.

This Credit is subject, so far as is applicable, to the laws, rules, regulations, and statutes of the Federal government and the Commonwealth of Pennsylvania.

This Credit shall continue in full force and effect without expiration until such date as the Director of the Union County Planning Commission certifies to us in writing that all obligations of the person or entity for whose account this Credit is established have been fully and satisfactorily completed by such person or entity in accordance with the terms of the aforesaid Performance Guaranty Agreement between the County of Union and the said person or entity.

Sincerely,

_____
Name of Bank

_____
Name and Title

APPENDIX U

Association of Property Owners Agreement - Minimum Requirements

APPENDIX U

ASSOCIATION OF PROPERTY OWNERS AGREEMENT
MINIMUM REQUIREMENTS

The Association of Property Owners shall be formed and operated under the following provisions:

1. A description of the Association including its bylaws and methods for maintaining improvements in common ownership, including but not limited to open space, streets, stormwater management infrastructure and facilities, trails, recreation facilities, water supply and sewage disposal infrastructure and facilities etc.

2. A stipulation that the Association shall be organized by the developer and shall be operated with financial subsidization by the developer, before the sale of any lots or units within the development.

3. Membership in the Association is mandatory for all owners of property and their successors. The conditions and timing of transferring control of the Association from the developer to the property owners shall be identified.

4. The Association shall be responsible for maintenance and insurance on all improvements not dedicated to the local municipality including but not limited to open space, streets, stormwater management infrastructure and facilities, trails, recreational facilities, water supply and sewage disposal infrastructure and facilities, etc.

5. Maintenance obligations may be enforced by the county and/or municipality and liens may be placed to cover the costs of such. Any governmental body with jurisdiction in the area where the development is located may place such liens on the owners.

6. The members of the Association shall share equitably the costs of maintaining and developing such common land. Shares shall be defined within the Association bylaws.

7. Association dues shall be structured to provide for both annual operating costs and to cover projected long-range costs relating to the repair of any capital facilities (which shall be deposited in a sinking fund reserved for just such purposes).

8. In the event of a proposed transfer, within the methods permitted herein and within the Union County Subdivision and Land Development Ordinance, of open space or other improvements by the Association or of the assumption of maintenance of such lands or improvements by the municipality, notice of such action shall be given to all property owners within the development.

9. The Association shall have or hire adequate staff or service providers to administer common facilities and property and shall properly and continually maintain such.

10. The Association may lease open space lands to any other qualified person, or corporation, for operation and maintenance of such lands, but such a lease agreement shall provide:

    a. The residents of the development shall at all times have access to the open space lands contained therein (except that access to land that is actively farmed shall be limited to times of the year when the fields are fallow);

    b. The common open space land to be leased shall be maintained for the purposes set forth in this Ordinance and local and county comprehensive plans and recreation plans; and

c. The operation of open space facilities may be for the benefit of the residents only, or may be open to the public at the election of the developer and/or Association, as the case may be.

11. The lease shall be subject to the approval of the Commission and any transfer or assignment of the lease shall be further subject to approval. Lease agreements so entered upon shall be recorded with the Union County Recorder of Deeds office within thirty (30) days of their execution and a copy of the recorded lease shall be filed with the Commission and the municipality.

12. Association documentation demonstrating compliance with the provisions herein shall be filed with the final plans. At the time of Preliminary Plan submission, the Applicant shall provide draft property owners association documentation with sufficient detail to demonstrate feasible compliance with the Union County Subdivision and Land Development Ordinance and these minimum requirements.