

ORDINANCE NO. 2022-0-11

**AN ORDINANCE OF THE TOWNSHIP OF WARRINGTON,
BUCKS COUNTY, PENNSYLVANIA,
REPEALING AND REPLACING THE
SUBDIVISION AND LAND DEVELOPMENT
ORDINANCE IN ITS ENTIRETY**

WHEREAS, the Board of Supervisors of Warrington Township determined that the Subdivision and Land Development Ordinance should be amended to advance and promote the health, safety and welfare of Warrington Township, including its residents and owners of real estate located in Warrington and to allow the orderly and beneficial development of Warrington Township; and

WHEREAS, the Board, after a public bidding process, entered into a Contract with the Bucks County Planning Commission for the preparation of a comprehensive new Subdivision and Land Development Ordinance; and

WHEREAS, the Board created an Ad Hoc SALDO/Zoning Revision Committee that included members of the Board of Supervisors, Warrington Township Planning Committee, Warrington Township Zoning Hearing Board, Bucks County Planning Commission, staff members and consultants to review the proposed comprehensive new Subdivision and Land Development Ordinance; and

WHEREAS, the Ad Hoc Committee held numerous public meetings to review and discuss the proposed new Subdivision and Land Development Ordinance that was advertised according to law and open to public comment; and

WHEREAS, the Ad Hoc Committee submitted to the Warrington Township Planning Commission the proposed new Subdivision and Land Development Ordinance for review; and

WHEREAS, the Warrington Township Planning Commission on or about September 1, 2022, and September 15, 2022 held public meetings, advertised according to law and open to the public, at which it considered the proposed new Subdivision and Land Development Ordinance and recommended that it be approved by the Board of Supervisors; and

WHEREAS, the Board of Supervisors on or about November 15, 2022 held a public hearing, advertised according to law and open to the public, to consider the adoption and enactment of an Ordinance to repeal the existing Subdivision and Land Development Ordinance and to adopt the proposed comprehensive new Subdivision and Land Development Ordinance; and

WHEREAS, the Board of Supervisors has determined that the repeal of the Township's existing Subdivision and Land Development Ordinance and adoption of the new Subdivision and Land Development Ordinance are in the best interests of Warrington Township; and

WHEREAS, the Board of Supervisors finds that the Township has complied with all procedural requirements for the repeal of the existing Subdivision and Land Development Ordinance, and for the adoption of the attached documents as the Subdivision and Land Development Ordinance of Warrington Township, respectively.

NOW, THEREFORE, the Board of Supervisors of Warrington Township hereby ordains as follows:

Section 1. The existing Subdivision and Land Development Ordinance and appendices thereto, currently codified as Chapter 305 is hereby repealed in its entirety.

Section 2. The attached, consisting of the new Subdivision and Land Development Ordinance, Articles I- VII, Appendices, Figures, Tables and Map are hereby adopted as the Subdivision and Land Development Ordinance of Warrington Township and shall be hereafter known as the Subdivision and Land Development Ordinance of Warrington Township.

Section 3. Any Ordinance or part of an Ordinance conflicting with this Ordinance is hereby repealed. In the event any portion or section of this Ordinance shall be found by a court of competent jurisdiction to be illegal or unenforceable, then it is declared to have been the Board of Supervisor's intent that this Ordinance shall be interpreted as if such illegal or unenforceable section or portion had not been adopted as part of this Ordinance.

Section 4. The provisions of this Ordinance are declared to be severable. If any provision of this Ordinance is determined by a court of competent jurisdiction to be invalid or unconstitutional, such determination shall have no effect on the remaining provisions of this Ordinance.

Section 5. This Ordinance shall become effective five (5) days after its adoption.

ENACTED AND ORDAINED on this 15th day of November, 2022.

BOARD OF SUPERVISORS OF WARRINGTON TOWNSHIP

ATTEST:

By P.L.
Barry P. Luber
Township Manager



Fred Gaines
Fred Gaines, Chair
Eileen Albillar
Eileen Albillar, Vice Chair
Ruth Schemm
Ruth Schemm, Member
Michael Diorka
Michael Diorka, Member
/s/ Vanessa Maurer
Vanessa Maurer, Member

Warrington Township

Subdivision and Land Development Ordinance



Submitted by:

The Staff of the Bucks County Planning Commission

September 2022

Contact:

Evan J. Stone, Executive Director

Bucks County Planning Commission

1260 Almshouse Road · Doylestown, PA 18901

Phone: 215-345-3400 · Fax: 215-345-3886

Email: estone@buckscounty.org

Warrington Township Subdivision and Land Development Ordinance**Table of Contents****Article I General Provisions**

• 305-101 – Adoption and statutory authority.....	1
• 305-102 – Title	1
• 305-103 – Short title	1
• 305-104 – Purpose	1
• 305-105 – Intent	1
• 305-106 – Interpretation	2
• 305-107 – Validity and severability.....	2
• 305-108 – Improvements not dedicated	2

Article II Glossary of Terms

• 305-201 – Application and interpretation	5
• 305-202 – Definitions of terms	5

Article III Design Standards

• 305-301 – Purpose	25
• 305-302 – General	25
• 305-303 – Streets.....	25
• 305-304 – Street classifications and requirements	26
• 305-305 – Street arrangement	28
• 305-306 – Street alignment	29
• 305-307 – Cul-de-sac streets	31
• 305-308 – Alleys.....	32
• 305-309 – Centralized United States Postal Service mail delivery and cluster box units.....	32
• 305-310 – Boulevard entrances.....	32
• 305-311 – Driveways.....	33
• 305-312 – Automobile parking facilities	34
• 305-313 – Sidewalks	35
• 305-314 – Trails and shared use paths	36
• 305-315 – Curbs.....	37
• 305-316 – Street identification signs	37
• 305-317 – Lighting	37
• 305-318 – Blocks	43
• 305-319 – Lots.....	44
• 305-320 – Easements.....	44
• 305-321 – Clearing, grading and drainage	45
• 305-322 – Stormwater management	47
• 305-323 – Erosion and sedimentation control	54
• 305-324 – Bridges and culverts.....	56
• 305-325 – Community facilities and required open space	56
• 305-326 – Residential developments	57
• 305-327 – Multifamily developments.....	57

• 305-328 – Nonresidential developments	59
• 305-329 – Landscaping	60
• 305-330 – Tree protection zone	69
• 305-331 – Environmental performance standards.....	70
• 305-332 – Service loading, collection and refuse areas	72
• 305-333 – Design standards for the BZ, CBD, CR, EV, IST, and WV zoning districts	72

Article IV Required Improvements

• 305-401 – Purpose	87
• 305-402 – Application	87
• 305-403 – Revision of plans	87
• 305-404 – Acceptance for dedication.....	87
• 305-405 – Maintenance period	87
• 305-406 – Monuments	87
• 305-407 – Streets and parking areas	88
• 305-408 – Sidewalks	88
• 305-409 – Curbs	88
• 305-410 – Street signs.....	88
• 305-411 – Streetlights.....	89
• 305-412 – Storm drainage system	89
• 305-413 – Public water supply.....	89
• 305-414 – Private water supply	89
• 305-415 – Public sanitary sewers	89
• 305-416 – Private sewage disposal systems.....	90
• 305-417 – On-lot sewage disposal system and private well locations	90
• 305-418 – Electric, telephone, cable television and communication facilities.....	90
• 305-419 – Grading	91
• 305-420 – Planting	91

Article V Procedure for Subdivision and Land Development

• 305-501 – General	93
• 305-502 – Application	94
• 305-503 – Feasibility sketch plan; major subdivision or land development	94
• 305-504 – Minor subdivision	95
• 305-505 – Preliminary plan; major subdivision or land development	98
• 305-506 – Final plan; major subdivision or land development	107
• 305-507 – Recording of final plans	112
• 305-508 – Applications involving modifications or additions to already recorded plans	113
• 305-509 – Acceptance of streets and improvements by Township	113
• 305-510 – Disclosure requirements.....	114

Article VI Administration

• 305-601 – Waivers	117
• 305-602 – Fees and deposits	117
• 305-603 – Inspection by Township Engineer	118

Article VII Jurisdiction and Penalties

- 305-701 – Jurisdiction.....119
- 305-702 – Penalties.....119

SALDO Appendices

- Appendix A – Required Contracts.....121
- Appendix B – Street Name and Classification.....125
- Appendix C – Certifications Required for Subdivision or Land Development Plans.....127
- Appendix D – Construction Specifications.....133
- Appendix E – Environmental Impact Study.....135
- Appendix F – Preapproved Plant Material List141
- Appendix G – Traffic Impact Study153

Figures

- Figure 1 – Easement Areas.....9
- Figure 2 – Flag Lot.....13
- Figure 3 – Lot Width.....14
- Figure 4 – Parking Bay.....16
- Figure 5 – Yard24
- Figure 6 – Turnaround Street/Temporary Cul-de-Sac31
- Figure 7 – Reference Drawing for Table 3. Parking Lot Dimensions.....35
- Figure 8 – Safety/Aquatic Benches52
- Figure 9 – Alternating Raised Beds65
- Figure 10 – Street Connectivity Index.....80

Tables

- Table 1 – Pavement Widths.....27
- Table 2 – Minimum Street Construction Standards28
- Table 3 – Parking Lot Dimensions34
- Table 4 – Trail and Path Minimum Width Requirements37
- Table 5 – Maximum Pole Height.....40
- Table 6 – Building-Mounted Luminaires.....42
- Table 7 – Peak Flow Rate Rational Formula.....48
- Table 8 – Enclosed Parking Structure or Deck Dimensions60
- Table 9 – Tree Replacement Standards62
- Table 10 – Landscape Equivalencies.....67
- Table 11 – Native Species Requirements.....68
- Table 12 – Plan Requirements93
- Table 13 – Improvement Construction Plan Scales110
- Table 14 – Existing and Future Street Lines.....125

Maps

- Street Classification MapAfter Page 126

ARTICLE I**General Provisions****§ 305-101. Adoption and statutory authority.**

- A. The Board of Supervisors of Warrington Township, Bucks County, Commonwealth of Pennsylvania, has adopted these regulations by ordinance, pursuant to the PaMPC, governing the subdivision and development of land within Warrington Township.
- B. From and after the effective date of this Ordinance, any subdivision or land development shall be in conformity with this Ordinance and all standards and specifications adopted as part of such Ordinance.

§ 305-102. Title.

An ordinance establishing rules, regulations and standards governing subdivision and land development within the Township, setting forth the procedures to be followed by the Township Planning Commission and the Board of Supervisors in administering these rules, regulations and standards, and setting forth the penalties for the violation thereof as established by the Commonwealth of Pennsylvania.

§ 305-103. Short title.

This Ordinance may be cited as the *Warrington Township Subdivision and Land Development Ordinance*, as amended.

§ 305-104. Purpose.

The purpose of this Ordinance is to regulate and control the subdivision and land development within Warrington Township, so as to provide sites suitable for human habitation, commercial and industrial operations and other uses for which land may be developed, thereby creating conditions favorable in order to promote the public health, safety and general welfare of the community.

§ 305-105. Intent.

It is the general intent of this Ordinance to regulate the subdivision and development of land in Warrington Township to ensure that the following are provided:

- A. The layout or arrangement of the subdivision or land development and all other characteristics of the subdivision or land development shall conform to the zoning ordinance, as amended, and shall further the orderly and appropriate use of the land.
- B. Streets in and bordering a subdivision or land development shall be coordinated with existing streets, parks and other features of the Township's Comprehensive Plan, the Township Street Classification Map in Appendix B, or the official map, when adopted, and shall be of such widths and grades and in such locations as deemed necessary to accommodate and regulate flows of prospective traffic from within the development.
- C. Adequate easements of rights-of-way shall be provided for drainage and utilities.
- D. Adequate open space for recreation, light, air, and effective drainage shall be provided in subdivisions and land developments, and reservations, if any, by the developer of any area designed for use as public grounds shall be suitable size and location for their designated uses.
- E. Land which is subject to flooding or subsidence shall either be made safe for the purpose for which such land is proposed to be used or shall be set aside for uses that will not endanger life or property or further aggravate or increase the existing menace.

- F. Adequate facilities for transportation (including streets, walkways, curbs, gutters, and streetlights), water, fire hydrants, sanitary sewage, storm sewers, schools, parks, playgrounds and other public facilities shall be installed in the subdivision or land development.
- G. Adequate provisions for safety from fire, panic and other dangers shall be provided for in subdivisions and land developments.
- H. Land which contains environmentally sensitive areas, or which is adjacent to such sensitive areas, shall be protected and used in a manner that is not detrimental to the environment, or shall be set aside from use such that the development will not require changes to existing conditions.

§ 305-106. Interpretation.

The provisions of this Ordinance shall be the minimum requirements to meet the purposes and intents stated in this Article. Where the provisions of this Ordinance impose greater restrictions than those of any statute, other ordinance, or regulation, the provisions of this Ordinance shall prevail. Where the provisions of any statute, or regulations impose greater restrictions than those of this Ordinance, the provisions of such statute, ordinance, or regulation shall prevail.

§ 305-107. Validity and severability.

It is hereby declared to be the intent of the Board of Supervisors that:

- A. If a court of competent jurisdiction declares any provisions of this Ordinance to be invalid or ineffective in whole or in part, the effect of such decision shall be limited to those provisions which are expressly stated in the decision to be invalid or ineffective, and all other provisions of this Ordinance shall continue to be separately and fully effective.
- B. If a court of competent jurisdiction finds the application of any provision or provisions of this Ordinance to any lot, building or other structure or tract of land to be invalid or ineffective in whole or in part, the effect of such decision shall be limited to the lot, building, structure, or tract of land immediately involved in the controversy, and the application of any such provision to other persons, property or situations shall not be affected.

§ 305-108. Improvements not dedicated.

All improvements constructed, as required by this Ordinance, that will not be publicly dedicated or accepted for dedication shall also meet the requirements of this Ordinance as well as any other section of the Township code related to construction standards and maintenance.

- A. Ownership and maintenance responsibility. A viable entity responsible for ownership and maintenance of all non-dedicated improvements shall be established by the developer and approved by the Township. Ownership and maintenance responsibilities may be assigned to either the developer or among the property owner(s) or an association of property owners within the subdivision or land development
- 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 an individual or multiple lots, units, or the entire subdivision or land development (i.e. stormwater management facilities), 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 said improvements are situated.
- C. Ownership and maintenance agreement. A private agreement suitable for recording in the Bucks County Recorder of Deeds Office shall be prepared, properly executed, and recorded with the final subdivision or land development plan and shall run with the land and shall clearly identify the individual or entity responsible for the ownership and maintenance of nondedicated improvements.

Said agreement shall be reviewed and approved by the Township Solicitor, and at a minimum, shall stipulate the following:

- (1) That the owner or owners, an association of property owners, successors and assigns shall keep all improvements in a safe and attractive manner and the owner shall convey to the Township easements and/or rights-of-way to assure access for periodic inspections by the Township and maintenance, if required.
 - (2) That if the owner or owners, association of property owners, successors and assigns, fail to maintain the improvements following due notice by the Township to correct the problems, the Township may perform the necessary work or corrective action. The owners or association of property owners shall reimburse the Township for these services. The Township shall have the authority to assert a judgment lien against the said owners or association of property owners for failure to make said reimbursement(s).
- D. Deed reference. All deeds created for lots that contain non-dedicated improvements shall make clear and specific reference to the following:
- (1) Description of all improvements not dedicated;
 - (2) The individual(s) or entity responsible for ownership and maintenance of said improvements in accordance with this Ordinance;
 - (3) The ownership and maintenance agreement as required by this Ordinance;
 - (4) Terms and conditions of the required maintenance;
 - (5) That no improvements shall be eliminated or altered without the written approval of the Township;
 - (6) That in the event improvements are altered, eliminated, or improperly maintained, the Township 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 Township may cause the work to be performed and invoice the ownership and maintenance entity, including the assertion of a judgment lien against it; and
 - (7) That all improvements not offered for dedication may be offered in the future if said improvements meet the minimum standards of this and/or applicable Township 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 Township shall have no obligation to accept said improvements until such time the improvements are improved to meet said standards, all costs of which shall be borne by the owner, association of property owners, their successors and assigns.

ARTICLE II

Glossary of Terms

§ 305-201. Application and interpretation.

- A. Definitions are included in order to facilitate the interpretation of this Ordinance for the public, administrative purposes and the carrying out of duties by appropriate officers, boards, committees and the Board of Supervisors.
- B. Unless otherwise expressly stated, the following shall, for the purpose of this Ordinance, have the meanings herein indicated:
 - (1) Words used in the present tense include the future tense.
 - (2) The word "person" includes a profit or nonprofit corporation, company, firm, association, partnership, trust, individual, LLC, LLP, or other entity. See the definition of "persons".
 - (3) The words "used" or "occupied" as applied to any land or building include the words "intended", "arranged" or "designated" to be used or occupied.
 - (4) The word "building" includes "structure."
 - (5) The words "Planning Commission" and the words "Township Planning Commission" always mean the Warrington Township Planning Commission.
 - (6) The words "Supervisors" and "Board of Supervisors" always mean the Warrington Township Board of Supervisors.
 - (7) The words "Zoning Ordinance" always mean the Warrington Township Zoning Ordinance, as amended.
 - (8) The words "subdivision and land development ordinance" always mean the Warrington Township Subdivision and Land Development Ordinance.
 - (9) The words "comprehensive plan" always mean the *Warrington Township Comprehensive Plan*, as amended.
 - (10) The words "County Planning Commission" always mean Bucks County Planning Commission.
 - (11) The word "lot" includes the word "plot" or "parcel."
 - (12) The words "should" and "may" are permissive; and the words "shall" and "will" are mandatory and directive.
 - (13) The Pennsylvania Municipalities Planning Code, Act 247, 1968, as amended is abbreviated to "PaMPC."
 - (14) References to "Publication 408" shall include, as applicable, Pennsylvania Department of Transportation's Publication 408 Specifications, as amended, Form 409 Specifications, as amended, and Roadways Construction Standards, Series RC (RC Standards), as amended."
 - (15) References to "PennDOT" always mean Pennsylvania Department of Transportation.
 - (16) References to "PaDEP" always mean Pennsylvania Department of Environmental Protection.
- C. Any word or term not defined herein shall be used with a meaning of standard language, meaning found in a standard unabridged dictionary, or a meaning found in a relevant court case.
- D. The definitions herein and this Ordinance shall be interpreted in accordance with the Pennsylvania Rules of Statutory Construction.

§ 305-202. Definitions of terms.

For the purposes of this Ordinance, the following words, terms, and phrases shall have the meanings herein indicated:

ACCESSORY BUILDING — A permitted building, which is incidental and subordinate to the principal building, and on the same lot as the principal building.

ACCESSORY USE — A permitted use, which is incidental and subordinate to the principal use, customarily associated with and on the same lot as the principal use.

ACTIVE RECREATION AREA — An area(s) of a site or lot generally flat, dry, and clear of any trees or other vegetation other than grass and suitable for active recreation such as baseball, football, soccer, tennis, or basketball.

ACTIVITY — An individual tenant, business, or other establishment.

ALLUVIAL SOIL — Deposits of unconsolidated materials, such as gravel, sand, silt, clay, and various mixtures of these, deposited by running water.

A. The following soils in Warrington Township are alluvial:

- (1) Bowmansville-Knauers silt loam (Bo).
- (2) Hatboro silt loam (Ha).
- (3) Rowland silt loam (Ro).

B. Soils are described and delineated in the “Soil Survey of Bucks County, Pennsylvania,” U.S. Department of Agriculture, Natural Resources Conservation Service, 2002, or the latest version.

ALTERATION — Any change in appearance or rearrangement in the supporting members of an existing building, such as exterior appearance and color, bearing walls, columns, beams, girders, building material or interior partitions, as well as any change in doors, windows, or means of ingress or egress; or any enlargement to, or diminution of, a building or structure, whether horizontally or vertically; or the moving of a building or structure from one location to another.

AREA, NET GROSS BUILDABLE SITE (NGBSA) — That portion of the gross buildable site area remaining after subtracting the partly unusable land areas. It is the area on which the common open space requirement is calculated.

AVERAGE DAILY TRAFFIC (ADT) COUNT — Number of vehicles per day using a given roadway. ADT is the total volume of traffic during a number of whole days, more than one day and less than one year, divided by the number of days.

BEST MANAGEMENT PRACTICE (BMP) — Structural devices or other methods that temporarily store or treat stormwater runoff and other water sources to reduce flooding, remove pollutants, provide for infiltration, and offer environmental amenities.

BLOCK — An area bounded by streets or by a combination of streets, parks, open spaces, or a municipal boundary line.

BOARD — A body granted jurisdiction by the provisions of the PaMPC to render final adjudications.

BOLLARD — A fixed vertical column of wood, metal, or concrete extending no less than 3 and a half feet above parking grade and 5 feet below grade placed for purposes of controlling vehicular traffic and protecting pedestrians.

BUFFER — Land area planted with trees, shrubs, groundcover, or a combination of landscape materials, used to separate a street from another land use or to separate one land use from another land use; or to

shield or block lights, noise, or other nuisances. A buffer need not necessarily be adjacent to a street or to a property line but may be necessary anywhere on the land area if the provisions of this Ordinance or the zoning ordinance so require.

BUFFER, SCREENING — Predominately evergreen landscape planting intended to provide a visual separation between abutting properties. A screen buffer is intended to be an impenetrable visual screen.

BUFFER, SOFTENING — Mixed perimeter landscape planting intended to provide an informal separation between abutting properties.

BUILDING — Any structure having a roof supported by columns, piers, or walls, including tents, lunch wagons, trailers, dining cars, mobile or manufactured homes, or other structures on wheels, or having other supports, and any unroofed platform, terrace or porch having a vertical face higher than three feet above the level of the ground from which the building is measured. A building may include more than one dwelling unit.

BUILDING AREA — The aggregate of the maximum horizontal cross section areas, excluding cornices, unroofed porches, paved terraces, steps, eaves, and gutters of all buildings on a lot.

BUILDING FAÇADE — The exterior portion of a building exposed to public view or street line.

BUILDING HEIGHT — The vertical dimension measured from the average elevation of the finished grade at the perimeter of the building to the highest point of the roof or perimeter walls, whichever is higher. Where buildings have gable or hip roofs, the highest point shall be considered to be at half the distance between the highest ridge and the lowest eave line.

BUILDING LINE — The line parallel to the street line at a distance therefrom equal to the depth of the front yard or setback required for the district in which the lot is located, to be measured from the street line, the setback line.

BUILDING, PRINCIPAL — Building in which is conducted the principal use of the lot on which it is situated, and not considered an accessory building.

CARTWAY — Actual improved or unimproved traveling surface commonly understood as that area set aside for the passage of motor vehicles. Edge of cartway where no curb exists shall be defined as curb line. Cartway widths and classifications shall be those specified in this Ordinance.

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 and designed and intended for the common use or enjoyment of residents of a development, not including streets, off-street parking areas, and areas set aside for public facilities.

COMMON PARKING AREAS — Designated parking areas for more than five vehicles located and intended for unrestricted public use for residents and patrons and which shall be required to conform to all Ordinance requirements.

CONDITIONAL USE — A use permitted in a particular zoning district in accordance with specific standards set forth in the zoning ordinance and pursuant to the provisions of Article VI of the PaMPC, as amended.

Conditional uses are allowed or denied by the Board of Supervisors, after recommendations by the Planning Commission.

CONDOMINIUM ASSOCIATION — The community association that administers and maintains the common property and common element of a condominium.

CUL-DE-SAC STREET — A residential street with one end open for vehicular and pedestrian access and the other end terminating in a circular vehicular turnaround.

DECISION — Final adjudication of any board or other body granted jurisdiction under any land use ordinance or this Ordinance, either by reason of the grant of exclusive jurisdiction or by reason of appeals from determinations. All decisions shall be appealable to the Court of Common Pleas of Bucks County.

DEMOLISH/DEMOLITION — To completely remove a building or structure or a portion of a building or structure.

DENSITY — A measure of the number of dwelling units per acre calculated by dividing the total number of dwelling units on a lot by the net gross buildable site area. See § 370-504 in Article V Natural Resources in the zoning ordinance.

DEVELOPER — Any landowner, equitable owner, agent of such landowner, or tenant with the permission of such landowner who makes or causes to be made an application for a land use under this Ordinance.

DEVELOPMENT — Includes all land development, including the construction, reconstruction, conversion, structural alteration, change in exterior appearance, relocation, or enlargement of any structure; excavation, landfill, or land disturbance (including forest removal); or any use or extension of the use of land (see also “Land Development”).

DEVELOPMENT PLAN — The map or plan and related reports or documents for development of a parcel of land, including a plot of subdivision, all covenants related 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.

DIAMETER at BREAST HEIGHT (DHB) — Diameter of a tree measured outside the bark at a point four and one-half feet above the ground.

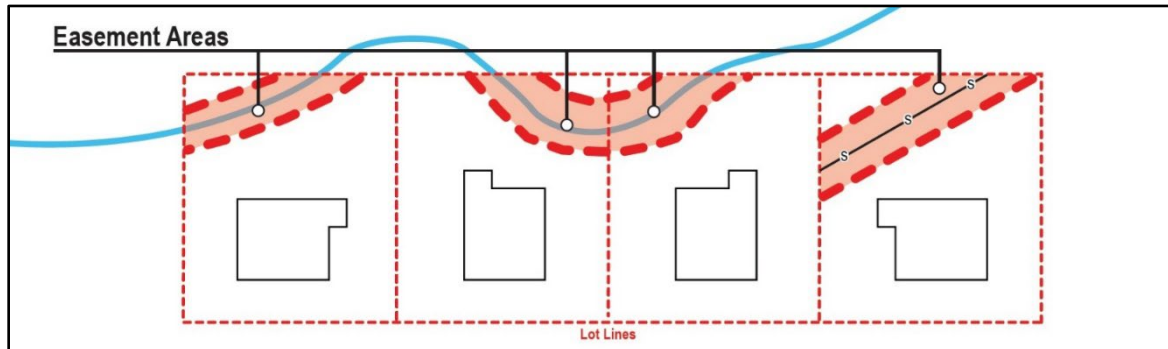
DRAINAGE FACILITY — Any ditch, swale, pipe, culvert, storm sewer, or structure designed, intended, or constructed for the purpose of diverting surface water from, or carrying surface waters off streets, public rights-of-way, parks, recreational areas, or any part of any subdivision or land development.

DRIVEWAY — A vehicular access way connecting to a street, road, or highway. All driveways within the legal right-of-way shall be paved with bituminous or concrete materials conforming to Township standards.

DWELLING UNIT — One or more rooms, designed, occupied, or intended for occupancy as separate living quarters, with full cooking, sleeping, and full sanitary facilities provided within the dwelling unit for the exclusive use of a single family maintaining a household.

EASEMENT —A grant of the specified use of a parcel of land or a portion thereof by the property owner to a person, the public, or a corporation.

Figure 1. Easement Areas



EAVES, EAVELINE — The lowest horizontal line of a sloping or flat roof. The line or border where the roof of a building meets the wall.

ELECTRONIC NOTICE — Notice given by a municipality through the internet of the time and place of a public hearing and the particular nature of the matter to be considered at the hearings, in accordance with § 109.(3) of the PaMPC.

EMERGENCY — A condition that:

- A. constitutes a clear and immediate danger to the health, welfare, or safety of the public; or,
- B. Has caused or is likely to cause facilities in the right-of-way (ROW) to be unusable and result in loss of the services provided.

EMPLOYEE — A person who is employed or is engaged in gainful activity. This term is used in parking standards of this Ordinance and the zoning ordinance as a measure of the number of parking spaces required. It shall refer to the maximum number of employees on duty at any time, at a place of business, whether the employees are full or part time, paid or unpaid. If shifts are involved and two shifts overlap, it refers to the total of both shifts.

ENVIRONMENTALLY SENSITIVE AREA

- A. Those portions of a site, excluding resource protection areas which are environmentally sensitive, but the degree of sensitivity will be dependent upon location, type of project, alternative and mitigating protection methods, and similar parameters related to a specific site or project. Sensitive areas which must be recognized, evaluated, and addressed include:
 - (1) Streams, Type II.
 - (2) Water body, Type II.
 - (3) Transition areas.
 - (4) Prime agricultural soils.
- B. Evaluation and regulation of sensitive areas shall be in accordance with criteria presented in § 305-329 of this Ordinance.

ENVIRONMENTAL SITE ASSESSMENT REPORT — A report prepared for a real estate holding that identifies potential or existing environmental contamination liabilities.

ERECT — To build, construct, attach, hang, suspend, affix, alter, structurally repair, remove, relocate, demolish, or renew.

EROSION — The removal of surface materials by the action of natural elements.

FACILITY — A place where an activity occurs. Something designed, built, installed, etc., to serve a specific function affording a convenience or service; transportation facilities; educational facilities; a new research facility.

FAMILY — Any number of individuals living together as a single nonprofit housekeeping unit and doing their cooking on the premises using a single cooking facility. A single nonprofit housekeeping unit is defined as common use and access to all living and eating areas, bathrooms, food preparation and serving areas, the sharing of rent, utilities, and other household expenses. The definition of family shall not apply to occupants of a club, society, fraternity, sorority, association, lodge, federation, residential club, rooming house, short-term rentals, or life organization. The definition of family shall also not apply to any group of individuals who are in a group living arrangement as a result of a criminal offense or court appointment.

FENCE — A structure that encloses an area or separates two or more areas, usually constructed from wood or metal posts that are connected by boards, wire, rails or netting. A fence does not have a solid foundation along its entire length.

FLOODPLAIN —

- A. Any areas of the Township classified as special flood hazard areas (SFHAs) in the Flood Insurance Study (FIS) and the accompanying Flood Insurance Rate Maps (FIRMs), dated March 16, 2015, and issued by the Federal Emergency Management Agency (FEMA), or the most-recent revision thereof, including all digital data developed as part of the Flood Insurance Study; and
- B. Any community-identified flood hazard areas as identified in Warrington Code Chapter 181.

FLOODPLAIN RESTRICTION OVERLAY — An area or areas of special restriction in addition to those of existing zoning based on the flood hazard areas delineated by the one-hundred-year floodplain line and/or elevations, as established in the Flood Insurance Study (FIS) for the Township prepared by the Federal Emergency Management Agency, Federal Insurance Administration (FEMA/FIA), and dated March 16, 2015, or the more recent revision thereof.

FLOODPLAIN SOILS — Areas subject to periodic flooding and listed in the Soil Survey of Bucks County, Pennsylvania. U.S. Department of Agriculture, most recent edition, as being "in the flood plain" or subject to "flooding."

FOOT-CANDLE — A unit of incident light (on a surface) stated in lumens per square foot and measurable with an illuminance meter, a.k.a. foot-candle or light meter. 1 foot-candle is equal to 1 lumen per square-foot.

FOOT-CANDLE, MINIMUM AVERAGE — The lowest permitted average measurement of illumination falling on a horizontal surface at ground level.

FOREST — Woodland comprising:

- A. Half an acre or more of wooded land where the largest trees measure at least six inches diameter at breast height (dbh) or 4.5 feet from the ground; or
- B. A grove of trees forming one canopy where at least 5 trees measure at least 10 inches dbh.

GARAGE —

- A. Garage, Private. A building accessory to or an integral part of a single-family or two-family dwelling, for the parking of one or more motor vehicles owned and used by the owner or tenant or a member of the household.
- B. Garage, Public. A building, other than a private or a storage garage, one or more stories in height used for the parking of motor vehicles.
- C. Garage, Storage. A building, not a private or public garage, one story in height used solely for the storage of motor vehicles (not trucks) but not for the sale, service or repair of motor vehicles.
- D. Parking spaces within a private garage do not count toward on-site parking space requirements.

GROSS BUILDABLE SITE AREA — That portion of the gross site area remaining after subtracting the reserved land (RL) areas and the totally unusable land (TUL) areas. It is the area on which density calculations are based.

GROSS LEASABLE AREA — The total floor area designed for tenant occupancy and exclusive use, including easements, mezzanines, and upper floors, if any, expressed in square feet and measured from the center of joining partitions and from outside wall faces. It is all of the area on which tenants pay rent and may include public or common areas such as public toilets, corridors or stairwells, elevator lobbies or enclosed mall spaces.

GROSS SITE AREA (GSA) — The total area of a lot or parcel of land prior to deduction for the areas where building is restricted by easement, open space, hazards, resource protection areas, and environmentally sensitive areas, such as wetlands.

HEARING — An administrative proceeding conducted by a board according to Article IX of the PaMPC.

HISTORIC RESOURCES — A structure or building or portion thereof listed in the National Register of Historic Places, the Pennsylvania Historic Resources Survey, by the Warrington Township Historic Society, or other appropriate documentation, or a structure seeking listing as an historic resource from any of the above listings.

HOMEOWNERS ASSOCIATION — A community association, other than a condominium association, that is organized in a development in which individual owners share common interests and responsibilities for costs and upkeep of common open space or facilities.

HYDRIC SOILS — A soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (United States Department of Agriculture, Natural Resources Conservation Service).

IMPERVIOUS COVERAGE — Any area(s) with surface considered to be impervious or non-pervious such as buildings, walks, roads, parking spaces, loading areas, etc.

IMPERVIOUS SURFACE — A surface that limits the infiltration of water into the ground. Impervious

surfaces include but are not limited to streets, sidewalks, pavement, roofs, or driveway areas. Any surface areas designed to be pavers, gravel, or crushed stone shall be regarded as impervious surfaces. In addition, other areas determined by the Township Engineer to be impervious within the meaning of this definition will also be classified as impervious.

IMPERVIOUS SURFACE RATIO — The percentage of a property covered by impervious surfaces. It is calculated by dividing the total impervious coverage on a parcel of land by the gross site area and multiplying by 100 percent.

IMPROVEMENT — Any permanent structure that becomes part of, is placed upon, or is affixed to real estate.

INDOORS — A space within a structure covered by a roof and enclosed within four permanent walls.

LAND CLEARANCE — Clearing land of brush, stubble, scrub, trees, grass, stumps, roots, or vegetative or other material by physical, mechanical, chemical, or other means from a plot of land. This does not mean mowing, landscape maintenance or pruning consistent with accepted horticultural and arboricultural practices, which does not impair the health or survival of the trees and associated vegetation.

LAND DEVELOPMENT — Any of the following activities:

- 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.
 - (3) Includes forest removal, additional paving of greater than 1,000 square feet, and development of parking lots.
- B. A subdivision of land.
- C. Land development does not include development which involves:
 - (1) The conversion of an existing single-family detached dwelling or single-family semidetached 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 building, on a lot or lots incidental and subordinate to an existing principal building; or
 - (3) The addition or conversion of buildings or rides within the confines of an enterprise which would be considered an amusement park. For the purposes of this subsection, an amusement park is defined as a tract, or area used principally as a location 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 by the proper authorities.

LANDOWNER — The legal or beneficial 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 they are authorized under the lease to exercise rights of the landowner, or other person having a proprietary interest in land.

LAWN — An area that is covered with grass and kept mowed.

LOT — A designated parcel, tract or area of land established by a plat, subdivision or as otherwise permitted by law, and to be separately owned, used, developed, or built upon as a unit (PaMPC).

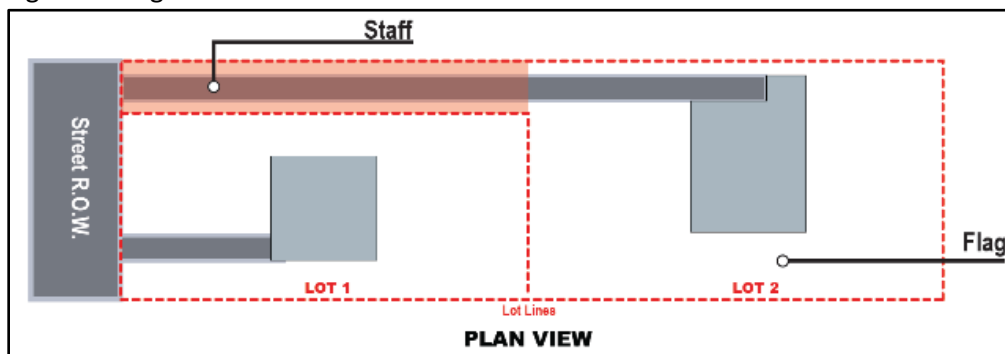
LOT, CORNER — A lot or parcel of land abutting on two or more streets at their intersection or on two parts of the same street forming an interior angle less than 135 degrees. Corner lots shall have two front yards, a side yard, and a rear yard.

LOT, DEVELOPED — See "Lot, improved."

LOT, DOUBLE-FRONTAGE — See "Lot, through."

LOT, FLAG — A lot consisting of a flag and a staff, both held in fee simple, which does not meet minimum frontage requirements.

Figure 2. Flag Lot



LOT, IMPROVED — A lot with buildings or structures.

LOT, INTERIOR — A lot other than a corner lot.

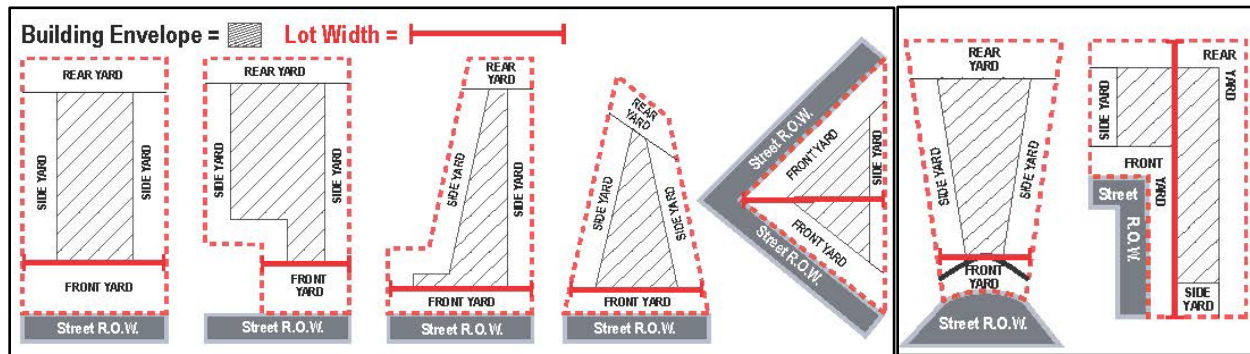
LOT, ISOLATED — An undeveloped, substandard lot held in single and separate ownership from surrounding property and not meeting area or bulk or dimensional requirements for the zone in which it is located.

LOT, REVERSE-FRONTAGE — A through lot with frontage on two parallel streets with vehicular access restricted to only one of the streets.

LOT, THROUGH — A lot that fronts on two parallel streets or that fronts on two streets that do not intersect at the boundaries of the lot. Through lots must have two front yards and two side yards.

LOT WIDTH — The distance measured between the side lot lines at the required front building setback line. In a case where there is only one side lot line, lot width shall be measured between such side lot line and the opposite rear lot line or street line.

Figure 3. Lot Width



LOT AREA, GROSS — The total area within the lot lines excluding the ultimate right-of-way.

LOT AREA, NET — Deeded lot area remaining after subtracting street line and resource protection areas from the gross lot area.

LOT LINE — Any boundary line of a lot; a property line.

MAILED NOTICE — Notice by first class mail of the time and place of a public hearing and the particular nature of the matter to be considered at the hearing in accordance with § 109 of the PaMPC.

MAJOR SUBDIVISION — The division of a lot, tract, or parcel of land or part thereof into three or more lots, tracts or parcels of land which will require improvements for the purpose, whether immediate or future, of transfer of ownership or of building development. Subdivision by lease of land for agricultural purposes into parcels of more than 10 acres, not involving any new street or easement of access or any residential dwelling, shall be exempted.

MANAGER — The Township Manager appointed as such by the Township Board of Supervisors.

MINOR SUBDIVISION — The division of a single lot, tract, or parcel of land into two lots, tracts or parcels of land for the purpose, whether immediate or future, of transfer of ownership or of building development, providing the proposed lots, tracts, or parcels of land thereby created have frontage on an improved public street or streets and providing further that there is not created by the subdivision any new street or streets, the need for required improvements, easements or the need therefor. Any additional subdivision of a lot created within 10 years of the date of the approval of a minor subdivision shall be considered and deemed to be a major subdivision for the purposes of this Ordinance and shall follow the procedures as outlined in Article V Procedure for Subdivision and Land Development.

MIXED-USE BUILDING — A building intended to contain two or more land use types, including multifamily dwellings, retail, light manufacturing, and office uses.

MIXED-USE DEVELOPMENT — A large tract of land to be developed in a planned, orderly manner. It is designed to encourage and support a mix of land use types.

MUNICIPAL ENGINEER — A professional engineer licensed as such by the Commonwealth of Pennsylvania, duly appointed as the engineer of Warrington Township.

NOTICE OF TERMINATION — A notice provided by the Bucks County Conservation District to a developer once all conditions of final approval of National Pollutant Discharge Elimination System discharges on the property have been met.

NONCONFORMING LOT — A lot, the area, dimension, or bulk requirements of which was lawful prior to the adoption or amendment of a zoning ordinance, but which fails to conform to the requirements of the zoning district in which it is located by reason of such adoption or amendment.

OCCUPIED BUILDING — A building located on a parcel of land with an occupancy permit in accordance with the regulations of the zoning ordinance and the general laws of the Township.

OFFICIAL MAP — A map adopted by ordinance pursuant to Article IV of the PaMPC.

OPEN AREA — Area or space at ground or any floor level which is open to the sky.

OPEN SPACE

- A. Land used for recreation, resource protection, amenities, buffers, or transition areas which is freely accessible to all residents. It is land protected by the provisions of the zoning ordinance and this Ordinance to ensure that it remains in such uses. Open space shall be a parcel or parcels of land, or an area of water, or a combination of land and water on a site which are logically interrelated, interconnected and designed for the stated use. Open space does not include streets or rights-of-way, required yards or lot areas or parking areas, except for parking areas designated for access to open space. Open space shall be substantially free of structures but may contain such improvements as finally approved as appropriate for the recreation of the residents in the development. Open space may include environmentally sensitive areas, unless otherwise noted below.
- B. Open space shall consist of two types, common and active open space:
 - (1) **COMMON OPEN SPACE (COS)** — All open space, except active open space.
 - (2) **ACTIVE OPEN SPACE (AOS)** — A parcel of land, which is generally flat, dry, and clear of any vegetation other than grass, and which is suitable as an active recreation area and developed according to the Township's comprehensive plan standards. The recreation facilities and design of open space shall be subject to the approval of the Board of Supervisors.
 - (3) **DEED RESTRICTED AREAS** — Required open space which is contained within the deeded lot areas of individual residential lots. Deed restricted open space shall not be used to calculate the minimum lot areas required by Township ordinances; shall not be used as part of the required front, side, or rear yards; and shall be kept free of all structures which would limit or preclude the use or access of the open space areas, except for those structures or other facilities associated with storm drainage or other utilities.
 - (4) **DEDICATED OPEN SPACE** — An area or areas dedicated in fee simple to the Township for use by all residents under the provisions of § 503(11) of the PaMPC.
 - (5) **DEVELOPMENT OWNERSHIP OF COMMON OPEN SPACE** — Areas set aside for open space use and governed by the establishment of an organization of development residents for the ownership and administration of the area.

ORDINANCE — The Warrington Township Subdivision and Land Development Ordinance, as amended.

OVERLAY DISTRICT — An area within a zoning district where different zoning provisions may apply than are in general effect for that zoning district. Overlay districts may be for any of those purposes set forth

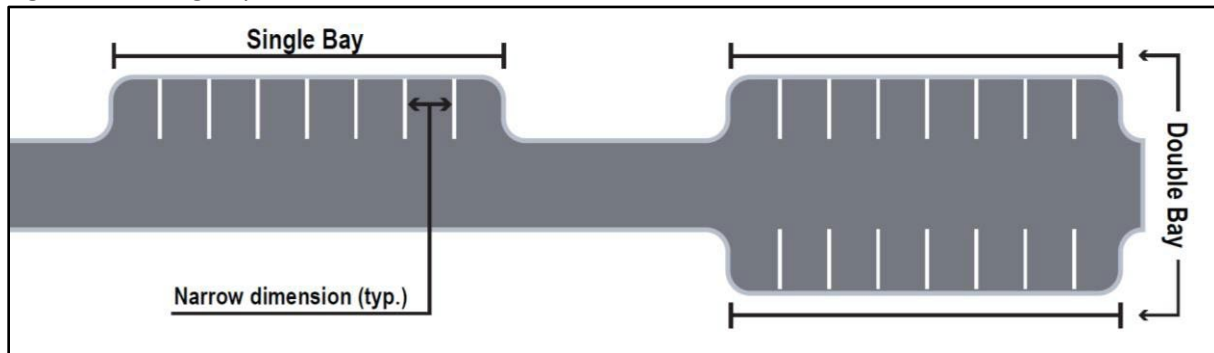
in § 605 of the PaMPC, 53 P.S. § 10605.

OWNER — An individual, firm, association, syndicate, partnership, or corporation having sufficient proprietary interest or ownership, or exercising control of a designated lot, parcel, tract, or area of land established by a plat, subdivision, or as otherwise permitted by law, and to be separately owned, used, developed, or built upon.

PARAPET — A non-load-supporting wall around the perimeter and extending above the surface of the roof.

PARKING BAY (ROW) — A length of parking stalls measured along the narrow dimension of each stall.

Figure 4. Parking Bay



PARKING RESERVE AREA — A portion of the required parking area held in reserve for future parking expansion.

PARKING SPACE OR STALL — The area defined by paint stripes or some other means of delineation which is meant solely for the occupancy by a motor vehicle.

PARKING STRUCTURE — Any structure of more than one level designed for the parking of vehicles and which may contain access ramps. "Parking structure" shall include the term "parking garage".

PASSIVE RECREATION AREA — An area(s) of a site or lot designated for less energetic activities such as woodland walks, nature study, fishing, and picnicking. Passive recreation areas may be steeply sloped, heavily vegetated, wet, or containing ponds or lake shores.

PERSONS — Individuals, corporations, companies, associations, joint-stock companies, firms, partnerships, limited liability companies, corporations and other entities established pursuant to statutes of the Commonwealth of Pennsylvania, provided that "person" does not include or apply to the Township or to any department or agency of the Township.

PEDESTRIAN WALKWAYS — All walkways or sidewalks, not including street sidewalks and walks directly accessing a building or group of buildings, and onto which a number of walks or sidewalks converge.

PLANTINGS, INVASIVE — Trees, shrubs, groundcover, and other plantings that can adapt and spread rapidly which disrupt native and non-native plant communities and ecosystems.

PLANTINGS, NATIVE — Trees, shrubs, groundcover, and other plantings present in North American prior to European colonization.

PLANTINGS, NON-NATIVE — Trees, shrubs, groundcover, and other plantings that were established intentionally or accidentally with human assistance where it was not previously found and is not necessarily invasive.

PLAT — The map or plan of a subdivision or land development, whether preliminary or final.

POINT OF CURVATURE — The back tangent point where straight alignment ends, and circular alignment begins.

POINT OF TANGENCY — The forward tangent point where circular alignment ends, and straight alignment begins.

PREMISES — A separate lot or tax parcel with individual frontage abutting the street line. A premises may include more than one occupant as in an office complex or shopping center.

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 use of natural resources.

PRIME AGRICULTURAL SOILS — Soils classified as land capability units I, II, III and IV in the “Soil Survey of Bucks County, Pennsylvania,” U.S. Department of Agriculture, Natural Resources Conservation Service, 2002, or the latest version.

PRINCIPAL BUILDING — A permitted building on a lot that is the primary, main building.

PRINCIPAL USE — The permitted use of the principal building, or the permitted primary activity, on a lot.

PROFESSIONAL CONSULTANT — Persons who provide expert or professional advice, including, but not limited to, architects, attorneys, certified public accountants, engineers, geologist, land surveyors, landscape architects or planners, in accordance with § 107 of the PaMPC.

PRUNING — Removal of branches from a tree using proper tools and approved cutting techniques.

PUBLIC HEARING — A formal meeting held pursuant to public notice by the governing body or planning agency, intended to inform and obtain public comment, prior to taking action in accordance with the PaMPC.

PUBLIC MEETING — A forum held pursuant to notice under 65 Pa. C.S. CH.7 (relating to open meetings) and other meeting requirements as set forth in § 305-505.F.

PUBLIC NOTICE — The term “public notice” as used in this Ordinance shall have the meaning assigned to such term in PaMPC and shall include the notices required in § 305.505.F. of this Ordinance.

REPORT — Any letter, review, study, memorandum, compilation, or similar writing made by any board,

official body, officer, or consultant other than a solicitor to any other body, board, officer, or consultant for the purpose of assisting the recipient of such report in the rendering of any decision or determination. All reports shall be deemed recommendatory and advisory only and shall not be binding upon the recipient, board, officer, body, or agency, nor shall any appeal lie therefrom. Any report used, received, or considered by the body, board, officer, or agency rendering a determination or decision shall be made available for inspection to the applicant and all other parties to any proceeding upon request, and copies thereof shall be provided at cost of reproduction, in accordance with § 107 of the PaMPC.

RESERVED LAND (RL) — That portion of the gross site area consisting of existing road and utility rights-of-way and easements; all ultimate rights-of-way for existing streets as specified herein, and/or all future street rights-of-way and other land reserved by virtue of the Official Township Map, when adopted; and all land shown on previously recorded subdivision and/or development plans as reserved from development for use as open space or resource protection. See Article V Natural Resources of the zoning ordinance.

RESOURCE PROTECTION AREAS

- A. That portion of the gross site area which contains certain natural resources subject to environmental limitations which must be protected as required in the zoning ordinance. This land includes areas of a site which are either totally or partially unusable land as a result of the existence of certain environmental features and includes such areas follows:
 - (1) Streams, Type 1.
 - (2) Water body, Type 1.
 - (3) Wetlands.
 - (4) Steep slopes.
 - (5) Forest.
 - (6) Prime agricultural soils.
 - (7) Riparian buffer.
- B. Type I streams and water bodies, as well as wetlands shall represent totally unusable lands which cannot be developed because of the existence of natural resources, which must be fully protected, and which are regulated by state or federal statutes. Steep slopes and forest areas represent partially unusable lands.

REVIEW — An examination of a plan to determine compliance with this Ordinance, the zoning ordinance and other pertinent requirements.

RIGHT-OF-WAY (ROW) — The surface of and space above and below any real property in the Township in which the Township has a regulatory interest, or interest as a trustee for the public, as such interests now or hereafter exist, including, but not limited to, all streets, highways, avenues, roads, alleys, sidewalks, tunnels, viaducts, bridges, skyways, or any other public place, area or property under the control of the Township, and any unrestricted public or utility easements established, dedicated, platted, improved or devoted for utility purposes, but excluding lands other than streets that are owned by the Township. The phrase "in the Right(s)-of-Way" means in, on, over, along, above and/or under the Right(s)-of-Way. For the purpose of this Ordinance, ROW shall include bridges, streets and roads owned by Bucks County, the Commonwealth of Pennsylvania, and any other Pennsylvania state agencies.

RIGHT-OF-WAY, EXISTING — The present legal right-of-way as established by the Commonwealth of Pennsylvania or other appropriate governing body and currently in existence.

RIGHT-OF-WAY, ULTIMATE — The legal street; the area or public way owned or required to be dedicated to the Township at the time of subdivision by dedication to provide adequate width for future street improvements. That line from which all future property setbacks are measured as shown and described on the Township Street Classification Map in Appendix B.

RIGHT-OF-WAY LINE — The dividing line between a lot and the ultimate right-of-way of a street or road or utility. See "Street Line".

RIPARIAN AREA — Vegetative areas located adjacent to rivers, creeks, lakes, springs, wetlands, or coulees that are a transition zone between the upland and aquatic ecosystems.

RIPARIAN BUFFER — A vegetated area or a buffer strip adjacent to a riparian area, that helps to shade and protect the stream from the impact of activities conducted on adjacent land uses.

RUNOFF — The surface water discharge or rate of discharge after a fall of rain or snow that does not enter the soil but runs off the surface of the land.

RUNOFF FROM A FULLY DEVELOPED AREA UPSTREAM — The surface water runoff that can be reasonably anticipated upon maximum development of an area of the watershed located upstream from any subject tract, as permitted by the zoning ordinance or the Township Comprehensive Plan.

SALDO — See "Subdivision and Land Development Ordinance."

SCREENING — A method of visually shielding or buffering one abutting or nearby structure or use from another by fencing, walls, berms, or densely planted vegetation.

SEDIMENTATION — The process by which mineral or organic matter is accumulated or deposited by moving wind, water, or gravity. Once this matter is deposited (or remains suspended in water), it is usually referred to as "sediment."

SETBACK — The area between the property line and the setback line in which no buildings or structures are permitted except as specifically allowed by the zoning ordinance.

SETBACK LINE — Minimum distance from the front, side and rear property lines as determined by the standards in the applicable zoning district.

SEWER

- A. **PUBLIC SEWER** — A sewer system owned and/or operated by the Bucks County Water and Sewer Authority in which sewage is collected from buildings from more than one lot and/or dwelling unit and piped to an approved sewage disposal system. It may also be referred to as "off-lot" or "off-site" sewer.
- B. **PRIVATE SEWER** — An on-lot disposal system providing for disposal of effluent from only one building or a group of buildings on a single lot.

SHARED USE PATH — A facility within its own right-of-way, which is separate from the vehicular right-of-way. Users generally include walkers, joggers, bicyclists, in-line skaters and sometimes equestrians.

SHIELDED — The description of a luminaire from which no direct glare is visible at normal viewing angles,

by virtue of its being properly aimed, oriented, and located and properly fitted with such devices as shields, barn doors, baffles, louvers, skirts, or visors.

SIGHT TRIANGLE — A triangular area of unobstructed vision established at street or commercial driveway intersections in which nothing is erected, placed, planted, or allowed to grow in such a manner as to limit or obstruct the sight distance of motorists entering or leaving the intersection.

SIGN — Any graphic display attached, painted, or represented directly or indirectly on a structure or other surface that shall display or include any letter, word, insignia, flag, or representation used as or which is in the nature of an advertisement, announcement, visual communication or direction or which is designed to attract the eye or bring the subject to the attention of the public.

SITE — Any plot or parcel of land or combination of contiguous lots or parcels of land subject to land development.

SITE AREA, GROSS BUILDABLE (GBSA) — The reserve land areas and totally unusable land areas subtracted from the gross site area. See § 370-504 in Article V Natural Resources of the zoning ordinance.

SITE AREA, NET (NSA) — The net site area shall have the same definition as "site area, gross buildable." Wherever a reference to the "net site area" exists in this Ordinance, it shall be substituted with the term "site area, gross buildable." See § 370-504 in Article V Natural Resources of the zoning ordinance.

SITE AREA, NET GROSS BUILDABLE (NGBSA) — The partly unusable land areas subtracted from the site area, gross buildable. See § 370-504 in Article V Natural Resources of the zoning ordinance.

SLOPE — The face of an embankment or cut section; any ground whose surface makes an angle with the plane of the horizon. Slopes are expressed as a percentage, or a ratio based upon vertical distance in feet per 100 feet of horizontal distance.

SPECIAL EXCEPTION — A use permitted in a particular zoning district, granted by the Township Zoning Hearing Board, pursuant to the provisions of Article VI and IX of the PaMPC.

STEEP SLOPE AREA — The portion of a site with a gradient in excess of 15 percent, excluding manmade slopes. Manmade slopes such as cuts and fills resulting from grading shall not be included as part of the steep slopes area.

STORMWATER BASIN — A stormwater management structure classified as follows:

- A. **DETENTION BASIN** — Either an above ground or subsurface stormwater management facility that is intended to temporarily store stormwater runoff and release the stormwater at a reduced rate until the basin has completely drained.
- B. **RETENTION BASIN** — An above ground stormwater management facility that is intended to maintain a permanent pond and has additional capacity to temporarily store stormwater runoff and release the stormwater at a reduced rate until the water level reaches the permanent pool elevation.
- C. **INFILTRATION BASIN** — Either an above ground or subsurface stormwater management facility that is intended to infiltrate all or some of the runoff entering the facility into the ground.

STORMWATER MANAGEMENT FACILITY — A system or facility designed to manage stormwater runoff to provide reductions in the peak rate and volume of runoff leaving the site and/or improve water quality of

the runoff leaving the site by reducing pollutants such as sediment and nutrients. *The Pennsylvania Best Management Practices Manual* provides guidelines and recommendations for designing and maintaining various types of stormwater management facilities.

STORY — The part of a building located between a floor and the floor or roof above. The first story of a building is the lowest story having 75 percent or more of its wall area above grade level.

STREAM — Any stream, channel, or stream protection area for conveyance of surface water, whether natural or artificial, with perennial or intermittent flow. Streams shall be classified as follows:

- A. TYPE I — Area along a water conveyance facility supported by stormwater runoff from a watershed area of 50 acres or more. The width of each stream shall be determined by the more extensive limits of the following:
 - (1) FLOODPLAIN — One-hundred-year flood line and/or elevations as delineated in the Flood Insurance Study for Warrington Township, as prepared by the U.S. Department of Housing and Urban Development/Federal Insurance Administration, and as identified by the up-to-date Flood Insurance Rate Maps (FIRMS) dated March 16, 2015, issued by the Federal Emergency Management Act (FEMA), or the most recent revision, thereof.
 - (2) ALLUVIAL SOILS.
 - (3) CALCULATED FLOOD LIMIT — Line and/or elevations as established by analysis of the drainage areas using approved USDA Soil Conservation Service or U.S. Corps of Engineers methods for one-hundred-year frequency storm event and as identified by the up-to-date Flood Insurance Rate Maps (FIRMS) dated March 16, 2015, issued by the Federal Emergency Management Act (FEMA), or the most recent revision, thereof.
- B. TYPE II — Area along a water conveyance facility supported by stormwater runoff from a watershed area of less than 50 acres. The width of each stream shall be determined by the more extensive limits of the following:
 - (1) ALLUVIAL SOILS.
 - (2) CALCULATED FLOOD LIMITS — Line and/or elevation as established by analysis of the drainage area using approved USDA soil Conservation Service or U.S. Corps of Engineer's methods for a one-hundred-year storm event and as identified by the up-to-date Flood Insurance Rate Maps (FIRMS) dated March 16, 2015, issued by the Federal Emergency Management Act (FMEA), or the most recent revision, thereof.

STREET — Includes street, avenue, boulevard, road, highway, freeway, parkway, lane, viaduct, and any other ways used or intended to be used by vehicular traffic or pedestrians whether public or private and also providing access to abutting properties.

STREET FRONTAGE — Portions of a lot abutting on a public street or street line.

STREET LINE — The dividing line between a lot and the ultimate right-of-way. See "Right-of-Way Line".

STREET, PAPER — A street that has never been built or opened but is shown on an approved plan, subdivision plat, tax map, or official map.

STREET, PRIVATE — A street that provides access to a public street and is not intended for dedication to the Township or other government entity.

STREET, PUBLIC — A vehicular way which is built to Township standards by a developer or federal, state, county, or Township government or governmental agency and dedicated to the Township.

STRUCTURE — A combination of materials constructed, or erected, in a deliberate manner on or under the ground, attached to something having a permanent location on or under the ground, or any manmade object having an ascertainable stationary location on or in land or water. A structure does not include physical improvements that are flush with the ground such as sidewalks and driveways.

SUBDIVISION AND LAND DEVELOPMENT ORDINANCE — The current Warrington Township Subdivision and Land Development Ordinance, as amended.

TOWNSHIP — Warrington Township, Bucks County, Pennsylvania.

TOWNSHIP ENGINEER — A professional engineer registered by the Commonwealth of Pennsylvania designated by the Supervisors to perform the duties of a Township Engineer.

TRAIL — Travel routes that are designed, designated, or constructed for recreational hiking use or provided as a pedestrian alternative to vehicular routes within a transportation system.

TRANSITION AREA (RESOURCE PROTECTION) — Space along all Type I streams, Type I water bodies, natural watercourses, all wetlands, and any floodplains thereof, along with associated alluvial soils which serve to protect the water resource from the impacts of development. A setback of 100 feet parallel to a Type I stream where no building is permitted, and minimal land disturbance is allowed.

TREE DRIPLINE — The line marking the outer edge of the branches of the tree.

TREE PROTECTION ZONE (TPZ) — The area radial to the trunk of a tree in which no construction shall occur. The TPZ shall be 15 feet from the trunk of the tree to be retained, or the distance from the trunk to the dripline, whichever is greater. When there is a group of trees or woodlands, the TPZ shall be the aggregate of the protection zones for the individual trees.

UNUSABLE LAND, PARTLY — The portion of the resource protection area containing land which has environmentally sensitive features making it only partially usable for development. See § 370-504 in Article V Natural Resources of the zoning ordinance.

UNUSABLE LAND, TOTALLY — The portion of the resource protection area containing land which cannot be developed such as Type I streams, Type I waterbodies, and wetlands. See § 370-504 in Article V Natural Resources of the zoning ordinance.

UNIFORMITY RATIO (STREETLIGHTING) — The term normally applied to streetlighting uniformity by the Illuminating Engineering Society. Given in a ratio, e.g., of three to one, it means that the point of lowest footcandle measurement cannot be less than one third of the specified minimum average footcandle level established in § 305-317 of this Ordinance.

USE — Any activity, occupation, business, or operation carried on or intended to be carried on in a building or other structure or on a parcel of land.

UTILITIES — Those services rendered by public utility corporations, municipalities, or municipal

authorities, including but not limited to electricity, gas, telephone, television, water, and sewerage, including the appurtenances used in connection with the supplying of such services (buildings, wires, pipes, poles, and the like).

UTILITIES OPERATING FACILITIES — A building or structure and its equipment used for the transmission and exchange of telephone, gas, electricity, sewer, and water facilities; provided, however, that in a residential district, these shall not include business facilities, generation or treatment facilities, the storage of materials, trucks or repair facilities, or the housing of repair crews.

VARIANCE — Relief granted pursuant to Article VI and IX of the PaMPC.

WAIVER — A modification allowed to a specific requirement of this Ordinance, granted only in accordance with the provisions of the PaMPC.

WALL — A structure that encloses an area, generally made out of masonry or stone, that has a solid foundation along its entire length.

WATER BODY — Body of water, either natural or artificial, such as a lake, pond, etc., which retains surface water year-round and has a normal water level in excess of six inches in depth. Water bodies shall consist of the following types:

- A. TYPE I — Water body with one acre or more of standing water. The limit of this water body as regulated by this Ordinance shall be the top of bank, or a minimum horizontal dimension of five feet from the maximum water surface elevation.
- B. TYPE II — Water body with less than one acre of standing water as defined above.

WEIR — Structure that alters, regulates, and controls the flow of water for outlets of lakes, basins, ponds and reservoirs.

WETLANDS — Those areas that are inundated or saturated by surface water or groundwater 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. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetland areas demonstrate hydric characteristics of soils, vegetation, and/or water table as specified by the United States Army Corps of Engineers and the PaDEP. Wetlands shall be of two types:

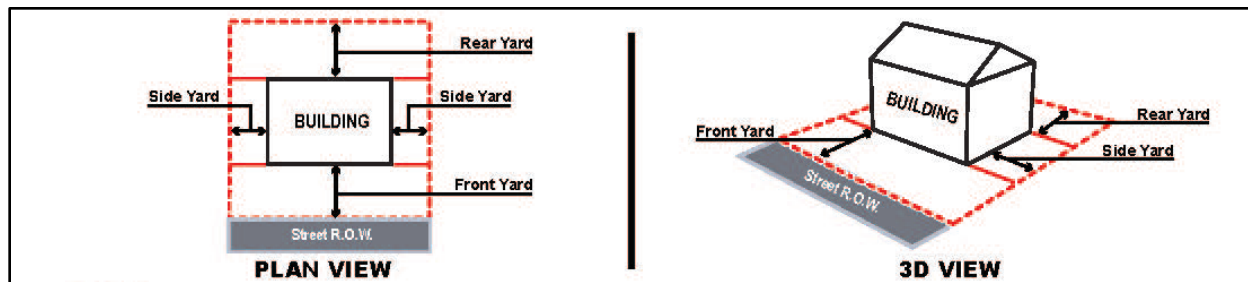
- A. CONNECTED WETLANDS — Shall be those which are adjacent to, or in close proximity to Type I or Type II streams, or have a common surface therewith, such that they drain into such streams at any time.
- B. GEOGRAPHICALLY ISOLATED WETLANDS — Shall be those which are not adjacent to or in close proximity to streams and therefore do not ultimately drain into navigable or tidal waters.

YARD — An area between the property line and the setback line where no buildings or structures are permitted except as specifically provided for in the zoning ordinance. The following types of yards are hereby established:

- A. FRONT YARD — All areas which abut streets are front yards. The area of land, across the full width of the lot, extending from the street line to the nearest structure of the lot, exclusive of steps,

- overhanging eaves, gutters, or cornices.
- B. **SIDE YARD** — The area of land extending from the required front yard to the required back yard, except as provided for accessory buildings, extending from the side line of the lot to the nearest structure on the lot, exclusive of steps, overhanging eaves, gutters, or cornices. The width of the side yard shall be measured at right angles to the side line of the lot.
- C. **REAR YARD** — The area of land, the full width of the lot except as provided for sheds, extending from the rear line of the lot to the nearest structure on the lot, exclusive of steps, overhanging eaves, gutters, or cornices. The depth of the rear yard shall be measured at right angles to the rear line of the lot or if the lot is not rectangular, then in the general direction of the side yard line.

Figure 5. Yard



Article III

Design Standards

§ 305-301 Purpose.

The standards and requirements outlined herein shall be considered minimum standards and requirements for the promotion of the public health, safety, morals, and general welfare.

§ 305-302. General.

- A. All portions of a tract being subdivided shall be taken up in lots, streets, public lands, or other proposed uses, so that remnants and landlocked areas shall not be created.
- B. Reserve strips controlling access to lots, public street lines, public lands, or adjacent private lands shall be prohibited unless their control is definitely placed with the Township under conditions approved by the Board of Supervisors. Flag lots shall comply with § 370-819 of the zoning ordinance.
- C. In general, lot lines shall follow Township boundary lines rather than cross them.
- D. Every possible means shall be provided to preserve trees, groves, waterways, scenic points, historic resources, or other community assets and landmarks that are located within a proposed subdivision or land development.
- E. Subdivisions or land developments shall be properly designed in order to prevent the necessity for excessive cut or fill.
- F. Owners are required to provide adequate street lines and paving on existing streets, and reserving areas and easements for facilities normally required in residential sections, including, parks, playgrounds, and playfields; shopping and local business centers, sidewalks and trails, street lines and easements for storm sewer, public water and sanitary sewer facilities in those areas that cannot be immediately joined to the existing storm sewer, public water and sanitary sewer systems of the Township or applicable municipal authority.
- G. Areas provided, or reserved for such community facilities, must be adequate to provide for building sites, landscaping, and off-street parking as appropriate to the use proposed. The Board of Supervisors reserves the right to accept or refuse offers of dedication for public uses.
- H. All design and construction specifications which are not specifically listed in this Ordinance shall be those specified in the most recent version of PennDOT's Publication 408 and Form 409, Specifications, as amended, and Standards for Roadway Construction, as amended, and any other federal, state, or local standards with the most restrictive provisions to apply.

§ 305-303. Streets.

- A. The arrangement, character, extent, grade, and location of streets shall conform to this Ordinance and the zoning ordinance and shall be considered in their relation to existing and planned streets, to topographical conditions, to public convenience and safety, and in their appropriate relation to the proposed uses of the land to be served by such streets.
- B. The arrangement of streets in a subdivision or land development shall either provide for the continuation or appropriate projection of existing principal streets in surrounding areas, or conform to a plan for the neighborhood approved or adopted by the Board of Supervisors to meet a particular situation where topographical or other conditions make continuance or conformance to existing streets impractical.
- C. Residential streets shall be so laid out in a way that their use by through traffic from streets of higher classification will be discouraged.
- D. Where a subdivision or development abuts or contains an existing or proposed expressway, arterial or collector street, the Board of Supervisors, with a review by the Planning Commission and professional consultants, may require either marginal access streets, sound barriers, reverse frontage

with screen planting along the street line, extra-deep lots with rear service roads, or such other treatment as may be necessary for adequate protection of residential properties and to afford separation of through and local traffic.

- E. Streets that are extensions of or obviously in alignment with existing streets shall bear the names of the existing streets. Street names shall not be repeated, and all street names shall be subject to the approval of the Board of Supervisors.
- F. If the lots resulting from the original subdivision are large enough for resubdivision, or if a portion of the tract is not subdivided, suitable access to street openings for such an eventuality shall be provided.
- G. Where the subdivision or development adjoins unsubdivided acreage, stub streets shall be provided to the boundary lines with temporary easements for turnarounds equal to a width of 50 feet and a length of 75 feet.
- H. Any owner who encroaches within the street line of a state highway is required to obtain a highway occupancy permit from PennDOT.
- I. Any owner who encroaches within the street line of a Township road is required to obtain a road occupancy permit from the Township Manager after approval by the Township Engineer.
- J. Roads intended for dedication to the Township shall meet all requirements necessary to be eligible for an allocation of state liquid fuels tax funds, as amended, and as administered by PennDOT, Bureau of Municipal Services.

§ 305-304. Street classifications and requirements.

- A. Street classifications.
 - (1) Arterial streets and highways are those which are primarily for throughways which carry fast-moving and heavy traffic. The authority for control of access or construction within their street lines is primarily vested within PennDOT.
 - (2) Collector streets are those which carry traffic from other collector, primary or secondary streets into the system of arterial or major highways.
 - (3) Primary streets are those which carry traffic from the secondary streets to the system of collector streets.
 - (4) Secondary streets are those which are used primarily for access to abutting properties and generally serve only internally developed areas.
 - (5) Residential streets are those which are used to carry and distribute traffic within a residential subdivision or land development.
 - (6) Cul-de-sac streets are those which are closed at one end, and shall not be more than 500 feet long terminating in a turnaround with a minimum street line radius of 60 feet and an outer paving radius of 50 feet. The minimum street line width shall be 50 feet and the minimum cartway width shall be 30 feet. Parking shall be permitted on one side of the street, but no parking shall be permitted in the cul-de-sac bulb.
 - (7) Marginal access streets are minor streets of the secondary class which are laid out parallel to and adjacent to arterial streets and highways, and which provide access to abutting properties and protection from through traffic.
 - (8) Alleys are those which provide secondary service access to the side or rear of abutting properties.
- B. Minimum street requirements shall be in accordance with Table 1.

Table 1. Pavement Widths.

Pavement Widths							
Class	Guide ADT	Street Line (feet)	Curbs (feet)	No Curbs (feet)	Sidewalk Required	Curb Required	Shoulder (feet)
Arterial	8,000 +	-	-	-	-	-	-
Easton Road	-	120	-	-	Yes	Yes	No
All others	-	100	-	-	Yes	Yes	No
Collector	3,001 to 7,999	60	36	28	Yes	Yes	6
Primary	1,000 to 3,000	60	30	26	Yes	Yes	6
Secondary	500 to 999	50	30	24	Yes	Yes	6
Residential	0 to 499	50	30	24	Yes	Yes	6
Cul-de-sac	0 to 200	50	30	24	Yes	Yes	6
Marginal access	-	50	26	-	Yes	Yes	6
Alleys	0 to 200	20	-	-	-	-	-

- (1) The curb requirements for collector, primary, secondary, residential, cul-de-sac and marginal access street classifications, as shown in Table 1, may be waived in whole or in part when it has been satisfactorily demonstrated to the Township that there will be no danger from vehicles or storm drainage. When the curb requirements have been waived, a stabilized shoulder of the dimension specified shall be used on both sides of the proposed street. Construction standards shall be in accordance with § 305-304.C. or substitute standards approved by the Township Engineer.
- (2) The final determination of average daily traffic count (ADT) shall be set by the Township.
- (3) Parking shall be limited to one side of the street in locations determined by the Township Engineer.
- (4) All sidewalk and curbs shall meet ADA requirements.

- C. The following are minimum street construction standards; more-restrictive standards may be applied if conditions warrant:

Table 2. Minimum Street Construction Standards

Street Class	Prepared Subgrade	Subbase (inches)	Base Course	Wearing Surface
Arterial	Yes	(Note 1)	(Note 1)	(Note 1)
Collector	Yes	-	6" 2A Material and 5" of Superpave 25 mm base course (0.3-.0 mESAL)	2" of 19 mm Superpave binder and 1.5" of Superpave 9.5 mm wearing course (0.3-3.0 mESAL)
Primary	Yes	-	Same as above	Same as above
Secondary	Yes	-	6" 2A Material and 4.5" of Superpave 25 mm base course (0.0-0.3 mESAL)	1.5" 9.5 mm Superpave wearing course (0.0-0.3 mESAL)
Residential	Yes	-	Same as above	Same as above
Cul-de-sac	Yes	-	Same as above	Same as above
Marginal access	Yes	-	Same as above	Same as above
Alleys	Yes	-	Same as above	Same as above
Driveways and parking areas	Yes	-	(Note 3)	(Note 3)
Bituminous sidewalks	Yes	No	4 inches of 2A Material	2" 19 mm Superpave wearing course (Note 2)

NOTES:

- (1) As required by the Pennsylvania Department of Transportation
 - (2) Geotextile fabric shall be as required as determined by the Township Engineer during construction.
 - (3) Alternate construction specifications may be permitted within parking stalls subject to Township Engineer approval.
- D. Where a subdivision or land development abuts or contains an existing street that does not meet the street construction requirements of § 305-304.B., future street improvements shall be indicated on the plan to conform to the standards required in § 305-304.B..
- E. Where there are existing streets, the Board of Supervisors may grant such reasonable exceptions to the requirements for grading and width of cartway provided for in this Ordinance as will not be contrary to the public interest, subject to conditions necessary to ensure adequate streets and other public improvements.

§ 305-305. Street arrangement.

- A. The arrangement of streets shall provide for the continuation or approximate projection of existing collector or primary streets in surrounding areas.
- B. Secondary streets shall be so laid out that through traffic from streets of higher classification will be discouraged.

- C. Street intersection spacing shall be in compliance with the regulations contained in this section, measured from center line to center line. The spacing listed in this section shall be considered minimum spacings. Where greater spacing is required in compliance with the American Association of State Highway and Transportation Officials or PennDot standards, the greater spacing distances shall be applied, as determined by the Township Engineer.
- (1) Arterials: 800 feet whether on the same or opposite side of the street. For intersections that would have to be less than 800 feet apart, first preference should be given to locating the streets opposite one another as a four-way intersection, otherwise the best location should be sought in terms of accepted traffic safety standards.
 - (2) Collector: 600 feet whether on the same side or opposite side of the street. For intersections that would need to be less than 600 feet apart, first preference should be given to locating the streets opposite one another as four-way intersections, otherwise the best location should be sought in terms of accepted traffic safety standards.
 - (3) Street intersections with all other streets shall be spaced the minimum distance apart as specified for the classification listed below whether on the same or opposite side of the street:
 - a. Primary: 400 feet
 - b. Secondary: 300 feet
 - c. Residential: 200 feet
 - d. Cul-de-sac: 150 feet
 - e. Marginal: 150 feet
 - (4) Offset intersections. In any case where center lines of street intersections are or would be within 150 feet of each other, they shall be made to coincide by relocating the street within the owner's land, unless additional problems of sight distance or other safety-related problems would be created. As an alternative, relocation further away from the offset intersection may be done in compliance with the intersection spacing requirement contained herein, when approved by the Board of Supervisors.
- D. Marginal access streets shall be provided when a subdivision or land development adjoins a major highway or arterial route. Such streets shall provide immediate access to all abutting lots, and prevent immediate lot access to major highways and arterial routes.
- E. The center-line profile of streets shall be adjusted to the contour of the land so as to produce usable lots and streets consistent to reasonable grade, alignment, drainage, and future public sanitary facilities.
- F. The street lines shall be graded to their full width as deemed necessary by the Board of Supervisors to provide suitable finished grades to the tolerances herein specified. In no case shall the street lines be less than that specified in § 305-304.B.
- G. Provision for additional street width may be required by the Board of Supervisors in specific cases for:
- (1) Public safety and convenience.
 - (2) Parking in commercial or industrial areas and in areas of high-density residential development.
 - (3) Widening existing streets where the minimum width outlined in these specifications does not meet with the specific requirements of the individual street.
 - (4) Future planned public improvement projects.
 - (5) Auxiliary lanes at intersections.

§ 305-306. Street alignment.

- A. Sight distance, horizontal and vertical curvature, superelevation, and maximum and minimum street grades shall be determined by the Township Engineer in compliance with the standards contained in *A Policy on Geometric Design of Highways and Streets*, published by the American Association of State Highway Transportation Officials, as amended, or PennDOT standards, whichever is more restrictive.

In addition, the following standards and guidelines shall be complied with:

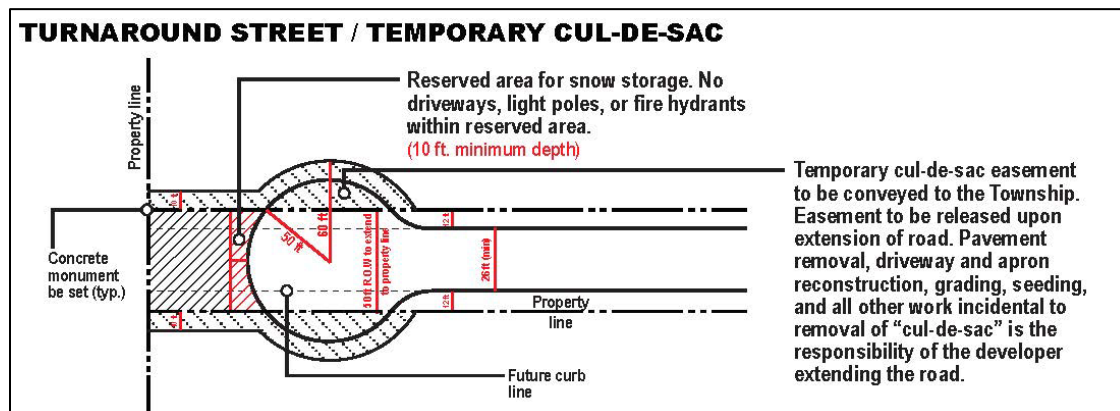
- (1) Horizontal curvature for all residential access streets shall be not less than 150 feet radius, measured along the street center line.
 - (2) Long radius, gentle curves are encouraged rather than shorter radius curves connected by tangents.
 - (3) Curve-tangent relationships shall follow accepted engineering guidelines for safety and efficiency. For example, minimum radius curves shall not be used at the ends of long tangents.
 - (4) Street grades shall be measured along the center line in accordance with the following:
 - a. The minimum for all proposed streets shall be 1 percent, unless existing conditions are less than 1 percent, in which case 0.5 percent is the minimum.
 - b. The maximum grades for residential access streets shall be 10 percent for distances less than 1,500 feet.
 - c. Street grades in excess of 5 percent should be avoided wherever possible.
 - d. Curve-grade combinations shall follow accepted engineering guidelines for safety and efficiency. For example, minimum-radius horizontal curves will not be permitted in combination with maximum grades.
 - e. At all approaches to intersections, proposed street grades shall not exceed 4 percent for a minimum distance of 50 feet from the intersection of curblines or edges of cartways.
- B. Not more than two streets shall intersect at the same point.
- C. Whenever practicable, street lines shall intersect at right angles. When secondary streets intersect primary or collector streets or when secondary, residential, or cul-de-sac streets intersect with one another, the angle of intersection of the street center lines shall not be less than 60 degrees measured at the center line of the intersections. Where angled intersections are used, it is preferable to design them so that the heavier traffic flow will make the obliquely angled turn rather than the acutely angled turn.
- D. Corrective changes to existing intersections. When existing streets intersect at odd angles or have more than four approaches, the owner shall make corrective changes to bring the intersection into compliance with this Ordinance, as required by the Board of the Supervisors, who shall first seek the advice of the Township Engineer and Planning Commission and other technical advisor or agencies, as appropriate. For state and county highways, corrective changes shall comply with the requirements of the appropriate agency.
- E. When applicable, street curb intersections shall be rounded by a tangential arc with a minimum radius of 20 feet for secondary, residential, or cul-de-sac streets and 30 feet for intersections which incorporate primary or collector streets.
- F. Waiver of corrective changes to existing intersections. The supervisors may waive the requirements of this section for corrective changes under one or more of the following conditions:
- (1) When changes made on the owner's land will not improve the intersection deficiencies.
 - (2) When other road improvements are already planned which would correct the problem without changes required of the owner.
 - (3) When not required by PennDOT where the intersections are under their jurisdiction.
 - (4) Dedication of half streets at the perimeter of a new subdivision is prohibited. If circumstances render this impracticable, adequate provision of the concurrent dedication of the remaining half of the street must be furnished by the subdivider. Where there exists a half street in an adjoining subdivision, the remaining half shall be included as part of the dedication of the proposed development.
- G. Approaches to intersections shall follow a straight course for a minimum of 50 feet from the intersection centerlines for residential access streets. All other streets shall follow a straight course in accordance with accepted engineering standards, but in no case less than 50 feet.

- H. Whenever curbs are to be constructed across private driveways within residential areas, the minimum longitudinal length of depressed curbs shall be 16 feet for a 10-foot-wide driveway. For driveways exceeding 10 feet in width, up to a maximum of 20 feet in width, the length of the curb depression shall be extended an additional width of 6 feet. Depressed curbs shall conform to the dimensions and details as specified in the most recent version of PennDOT's Publication 408 and Form 409, as amended, and Standards for Roadway Construction, as amended.

§ 305-307. Cul-de-sac streets.

- A. A cul-de-sac permanently terminated will not be approved when a through street is practicable. The owner shall have the burden of showing the impracticability of the through street in order to justify a cul-de-sac.
- B. A cul-de-sac permanently or temporarily shall not exceed 500 feet in length, as measured from the edge of pavement of the intersecting street to the most distant point at the terminus of the cul-de-sac bulb.
- C. A cul-de-sac permanently terminated according to the subdivision plan shall be provided with a circular turnaround with a minimum street line radius of 60 feet and an outer paving radius of 50 feet.
- D. A temporary cul-de-sac shall be designed with a paved turnaround of 50-foot radius within the approved street line. Temporary cul-de-sacs shall be constructed using the same dimensional standards as a permanent cul-de-sac. Drainage structures for such temporary cul-de-sac shall be designed and located in consideration of future through streets.
- E. Where possible, all storm drainage, whether surface or subsurface, shall be directed toward the open end of the cul-de-sac.
- F. Unless future extension is clearly impractical or undesirable, the turnaround street line shall be placed adjacent to a property line, and a street line of the same width as the street shall be carried to the property line in such a way as to permit future extension of the street into the adjoining street. At such time as the street is extended, the turnaround easement area shall revert ownership to the property owners fronting on the cul-de-sac turnaround.

Figure 6. Turnaround Street/Temporary Cul-de-Sac



- G. A snow storage area shall be provided along the street line of the turnaround on all cul-de-sac streets. The snow storage area shall be contained within an easement not less than 15 feet wide measured from the street line, and of a sufficient length as determined necessary by the Township to provide adequate snow storage area. The easement area must be described by metes and bounds on the Record Plan for any subdivision or land development.

§ 305-308. Alleys.

- A. Alleys are intended to provide access to the side or rear of residential lots for services and on-lot parking.
- B. Alleys shall be centered on a side or rear lot line.
- C. Alleys shall be designed with a paved cartway of 20 feet.
- D. Except where specifically approved by the Board of Supervisors, all alleys shall be designed for one-way traffic.
- E. Frontage on an alley shall not be construed to satisfy the requirements of the zoning ordinance for frontage on a street.
- F. No parking shall be provided for, or permitted within, the cartway of the alley.
- G. Alleys shall be designed to discourage through traffic.
- H. Dead-end alleys are prohibited unless suitable turnaround provisions are provided.
- I. Alleys shall have a minimum 12-foot radius at intersections with another alley or street.
- J. A 10-foot clear sight triangle is required at all intersections of alleys with other alleys or streets.
- K. Any portion of an alley located between two points of ingress and egress shall provide access to no more than 30 dwelling units. No more than 15 dwelling units shall take access from one side of the alley.
- L. Alleys may only intersect residential streets.
- M. Alley length shall not exceed a distance of 300 feet measured between two points of ingress and egress.
- N. Alley construction must be in accordance with street construction standards of § 305-304..
- O. All alleys shall only be permitted when owned and maintained by a homeowners' association or condominium association.
- P. All utilities installed underground shall not be located parallel within an alley.

§305-309. Centralized United States Postal Service mail delivery and cluster box units.

- A. Where cluster box units (CBUs) are proposed, the following requirements shall apply:
 - (1) CBU shall be designed such that they are centrally located to serve the residents of the development, while providing safe and efficient access for pedestrians and motor vehicles in the vicinity of the CBU.
 - (2) Provisions for off-street and/or on-street parking, and ADA compliant accessibility, shall be considered when locating the CBU.
 - (3) Where possible, CBU shall be located within publicly or privately owned open space, or on private property within an access easement in favor of a community homeowner's association or condominium association.
 - (4) CBU shall be in the style, color and location approved by the Board of Supervisors subject to the United States Postal Service approved specifications which are incorporated herein by reference.
 - (5) At least two parking spaces shall be provided adjacent to the CBU.

§ 305-310. Boulevard entrances:

- A. Boulevard entrances shall be permitted at the discretion of the Township and shall have a minimum street line of 60 feet. Boulevard entrances shall extend to the first intersection within the development. The entrance shall include 16-foot-wide one-way travel lanes with a 10-foot-wide center island. A landscaped island in the boulevard entrance shall be provided that meets the following design standards:
 - (1) At the center of the boulevard there shall be a ten-foot-wide island which meets the following requirements:

- a. The landscaped island shall be owned and maintained by a homeowners' association or condominium association. The bylaws of the homeowners' association or condominium association and all documents governing ownership, maintenance and use restrictions for common facilities shall be submitted to and approved by the Township Board of Supervisors, in consultation with the Township Solicitor.
 - b. The landscaping of the island is to be designed by a landscape architect.
- B. Boulevard entrances shall be required for single access developments with more than 20 dwelling units. Developments with a boulevard entrance must have a second access for emergency vehicles.

§ 305-311. Driveways.

- A. Driveways shall be so located, designed, and constructed as to provide a minimum sight distance at intersections with streets in compliance with the American Association of State Highway and Transportation Officials or PennDOT standards. At arterial, collector, primary and secondary streets, a stopping area, measured 20 feet behind the street line, shall be provided not to exceed a 4 percent grade. Driveways shall not interfere or be inconsistent with the design, maintenance, and drainage of or the safe passage of traffic on Township or state roads.
- B. Driveways, where provided, shall be located as far from street intersections as reasonably possible, but not less than 75 feet for single-family residential lots and 150 feet for multifamily residential lots, and shall provide access to the street of lower classification when a corner lot is bounded by streets of two different classifications as herein defined.
- C. Only one driveway shall be permitted when less than 100 feet of site frontage is available on the adjacent street. A maximum of two driveways may be permitted when more than 100 feet of site frontage is available. More than two driveways shall be prohibited unless supported by a traffic impact study and approved by the Board of Supervisors.
- D. Driveway intersections serving individual parcels of land may be prohibited by the Board of Supervisors where such intersections would create congestion, interference and/or hazards to traffic flow and safety by reason of street grades, landforms, vegetation, frequency of driveway intersections, limited sight distances and/or high-speed traffic flow. In such cases, the Board of Supervisors may permit reasonable alternative forms of vehicular access to the parcel of land by means of:
 - (1) Marginal access streets or driveways
 - (2) Shared driveways
 - (3) Reverse frontage lotting
 - (4) Other means which are legally and technically suitable in the opinions of the Township Solicitor and Engineer.
- E. Any owner who encroaches within the legal right-of-way of a state highway is required to obtain a highway occupancy permit from the Pennsylvania Department of Transportation.
- F. Shared driveways that provide access to nonresidential lots are permitted in order to minimize the number of new access points along a public street. The area of the shared driveway shall be encompassed by a shared access easement described by metes and bounds on the record plan which is recorded in the office of the Recorder of Deeds of Bucks County. Terms of the shared access easement shall identify the property owner(s) responsible for maintaining the shared driveway in perpetuity.
- G. Design requirements for shared driveways shall be in accordance with PennDOT and American Association of State Highway and Transportation Officials (AASHTO). Shared driveways shall be paved and constructed to the standards herein and in § 305-304..
- H. Minimum shared driveway width shall be 20 feet at the street line.
- I. For nonresidential developments, there shall not be more than two entrances to the site. Driveways

are encouraged to be constructed from the lowest street classification.

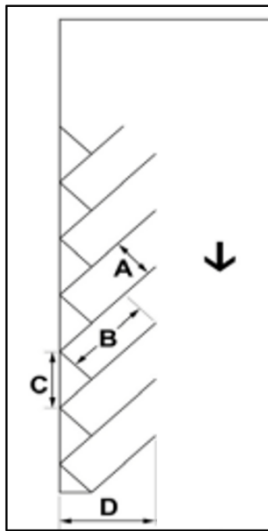
§ 305-312. Automobile parking facilities.

- A. Automobile parking facilities shall be provided off street in accordance with the requirements of the zoning ordinance.
- B. At no time shall angle or perpendicular parking be permitted along public streets or private streets. All parking lots and bays permitting parking other than perpendicular shall be reviewed in depth by the Township Planning Commission and Board of Supervisors with special attention to circulation and access.
- C. All parking areas, drives or access and circulation roads shall be physically defined by one or more of the following methods: concrete curbing, Belgian Block curbing, or concrete tire stops. All of the above shall be to PennDOT specifications, as applicable.
- D. No one single parking line shall exceed 12 cars. Lines exceeding 12 cars shall be separated by a planting strip equal to the width of one parking stall.
- E. Where parking areas exceed 350 feet in length (measured along the narrow stall dimension), the parking areas shall be separated from one another by ten-foot planting strips or pedestrian walkways or both. In areas where there are multiple parallel parking areas, the pedestrian/planting strip shall be required on every other parking area starting with areas adjacent to access or circulation roads. Such planting strips may be used in calculating optional landscape reserve areas as defined in the Article V of the zoning ordinance.
- F. Parking lot dimensions shall be no less than those listed in the following table.

Table 3. Parking Lot Dimensions

Angle of Parking	Parking Stall				Driveway	
	Width ^A (feet)	Depth to curb or wall ^D (feet)	Width Parallel to Aisle ^C (feet)	Stall Length ^B (feet)	One-way (feet)	Two-way (feet)
90 degrees	9.5	18	9	18	n/a	24
60 degrees	9.5	20	10.5	18	19	24
45 degrees	9.5	19	12.5	18	19	24
30 degrees	9.5	16	18	18	19	24
Parallel	10	n/a	n/a	22	19	24

Figure 7. Reference Drawing for Table 3. Parking Lot Dimensions



- G. All dead-end parking lots shall be designed to provide sufficient backup area for the end stalls of the parking lot.
- H. Parking areas shall be designed so that each motor vehicle may proceed to and from the parking space provided for it without requiring the moving of any other motor vehicle.
- I. No less than a 5-foot radius of curvature shall be permitted for all curblines in all parking areas.
- J. Except at entrance and exit drives, all parking areas shall be set back from the street line at least 15 feet. The distance between this required setback and the future street line shall be maintained as a planting strip. See the zoning ordinance for each district's specific requirements, and § 305-329., Landscaping, of this Ordinance.
- K. The construction of all automobile parking areas shall paved in accordance with the requirements specified within § 305-304. herein, per PennDOT Publication 408 Specifications, as amended.
- L. The required number of parking spaces shall be in accordance with requirements for each zoning district as specified in the zoning ordinance.

§ 305-313. Sidewalks.

- A. Sidewalks shall be provided along both sides of all streets classified as secondary streets or greater in all districts where sidewalks will be required in developments of five homes or more. Sidewalks may also be required at the discretion of the Board of Supervisors along residential streets and cul-de-sacs.
- B. In lieu of sidewalk requirements, as an alternate, sidewalks or pedestrian walkways may be located within the development common open space when connecting various areas of the development with recreation, commercial, or transportation centers.
- C. All sidewalks, curb ramps, detectable warning surfaces, and pedestrian walkways shall be designed to comply with ADA Accessibility Standards and the zoning ordinance. The minimum width of all sidewalks shall be 4 feet, except as provided in § 305-333.. Where 4-foot-wide sidewalks are proposed, 5-foot by 5-foot passing zones shall be provided at 200-foot intervals to provide a passing zone for ADA accessibility. There shall be a minimum 4-foot planting strip between the curb and sidewalk. Combination sidewalks and curbs are not permitted in residential areas. A greater sidewalk width may be required in multifamily, commercial, or industrial areas when, in the opinion of the Board of Supervisors, it is needed for additional foot traffic, outdoor seating for restaurants, emergency access, maintenance, or police patrols. Sidewalks shall be designed to be free of all permanent obstructions within the width of the sidewalk. No utility poles, street trees, or similar

obstructions will be placed in the sidewalk area and curb ramps.

- D. The grades and paving of the sidewalk shall be continuous across driveways and curb ramps except in cases where safety considerations or storm drainage requirements dictate otherwise.
- E. At corners and pedestrian street crossing points, sidewalks shall be extended to the curbline with an adequate apron area for anticipated pedestrian traffic.
- F. Sidewalks shall connect to all transit stops. Sidewalks connecting to transit stops shall be a minimum of 5 feet in width, measured parallel to the curb, and must be at least 8 feet in length, measured perpendicular to the curb or vehicular roadway.
- G. Sidewalks adjacent to head-in and angle-type parking areas shall have a minimum of 3 feet of additional width to permit pedestrian movement beyond the bumper overhang area.
- H. Sidewalks shall be of concrete construction except, when considered appropriate by the Township, bituminous concrete may be used.
- I. Sidewalks shall be built in accordance with PennDOT Publication 408 Specifications, as amended.

§ 305-314. Trails and shared use paths.

- A. Trails and shared use paths provide residents with recreational opportunities, health benefits and means of nonvehicular travel. For children, they are an essential means of transportation between neighborhoods and to schools and parks. Recognizing these purposes, the following standards shall apply:
 - (1) When a subdivision or land development proposal includes or abuts an existing trail or path customarily used by pedestrians, cyclists and/or equestrians, the Board of Supervisors may require that the owner make provisions for continued recreational use of the trail or path. The trail or path may be dedicated to the Township to ensure future public accessibility.
 - (2) The owner may propose and develop a new trail or path provided the proposed trail or path is constructed as designated in the *Warrington Township Parks, Recreation, and Open Space Plan: Pathways to Our Future 2018-2027*.
 - (3) The owner may alter the course of an existing trail within the development tract under the following conditions:
 - a. The existing trail or path shall retain connectivity to any existing trails or paths on adjacent parcels or tracts.
 - b. The proposed alteration exhibits quality trail design consistent with generally accepted industry standards in publications such as *Pennsylvania Trail Design and Development Principles – Guidelines for Sustainable, Non-Motorized Trails*, as amended, and the *American Association of State Highway and Transportation Officials (AASHTO) Guide for the Planning, Design, and Operation of Bicycle Facilities*, as amended.
 - c. The proposed alteration does not impact a trail or path within the street line.
 - (4) The use of porous paving is encouraged at locations where site conditions could support this design. Specific construction and maintenance operations are required with porous paving as acceptable to the Board of Supervisors and Township Engineer.
 - (5) When a trail or path is intended for public use, it shall be protected by an easement satisfactory to the Board of Supervisors, Township Engineer, and Township Solicitor. The width of the easement shall be a minimum of 2 feet on each side of the surface of the trail or path.
 - (6) The minimum width of the trail or path surface shall be consistent with the following requirements:

Table 4. Trail and Path Minimum Width Requirements

Type of Trail or Path	Minimum Width
Hiking or Nature	4 feet
Equestrian	8 feet
Shared Use/Multi-use	10 feet

- (7) Trails and paths shall have a vertical clearance of no less than 10 feet.
- (8) All trails and paths shall be designed to be in compliance with *Federal Access Board Accessibility Guidelines for Outdoor Developed Areas (AGODA)* and *U.S. Access Board – Americans with Disabilities Act (ADA) Accessibility Standards*.
- (9) No trail shall be designed with the intent to accommodate motorized vehicles other than maintenance or emergency vehicles.
- (10) The land area permanently designated for trails for public use shall count towards open space requirements in accordance with the requirements of the zoning ordinance.

§ 305-315. Curbs.

- A. Curbs shall be provided along both sides of all streets as stipulated in § 305-304.B. of this Ordinance.
- B. Along the existing street on which a subdivision or land development abuts (hereinafter called "boundary streets"), curbs shall be constructed and the existing paved cartway shall be widened to the curb. The location of curbing along a boundary street shall be determined by the width of the required cartway of the street as specified in § 305-304. of this Ordinance.
- C. All concrete curbs shall be constructed in accordance with PennDOT Publication 408 Specifications, as amended.
- D. Belgian block curbs may be installed along residential and cul-de-sac streets, and shall be constructed in accordance with specifications approved by the Township Engineer.
- E. Stabilized shoulder of no less than 6 feet in width shall be used on all streets when approval has been given for no curbs, and shall be constructed in accordance with PennDOT, Publication 408 Specifications, as amended.

§ 305-316. Street identification signs.

- A. Street signs will be installed by the developer in accordance with specifications provided by the Township.

§ 305-317. Lighting.

- A. General.
 - (1) Lighting shall be provided along public streets and within parking facilities and recreational facilities as required by the Warrington Township Board of Supervisors. A lighting plan shall be prepared by the developer in accordance with Article V of this Ordinance.
 - (2) All parking areas, walkways, and passageways serving commercial and residential land developments shall be illuminated to the satisfaction of the Warrington Township Board of Supervisors based on the review and recommendation by the Township lighting consultant.
 - (3) Where required by the Board of Supervisors, streetlights and all accessory equipment shall be provided at the expense of the developer, at all intersections, ends of cul-de-sacs, and between all intersections at spacing approved by the Board of Supervisors with the review and recommendation of the Township lighting consultant. As a minimum, all residential developments (or other, as required by the Board of Supervisors) shall be constructed with a minimal number of connections (to the power source), underground streetlight wiring system (wire protected by

conduit), including all accessory equipment required for future installation of streetlights (and foundations) by others. A plan for lighting and underground wiring system (energizing plan) shall be prepared by the developer and submitted for review by the Township lighting consultant at the time of preliminary plan submission.

- (4) All streetlights, where required by the Board of Supervisors, shall have a LED (Light Emitting Diode) lighting source (pole mounted). All lighting and accessory equipment shall be standard equipment as approved by the Board of Supervisors with review and recommendation of the Township lighting consultant or variations as approved by the Board of Supervisors.
- (5) Adjustable LEDs are permitted so long as the maximum lumens of the adjustable LED cannot exceed the maximum lumens permitted by this Ordinance.
- (6) Streetlights shall be energized at the time of 50 percent occupancy of the development. All fees for connection and operation of such lights shall be the responsibility of the developer until Warrington Township formally accepts dedication of public improvements. Warrington Township shall coordinate energizing of lights in accordance with the approved energizing plan. Requests for electrical connection shall be made by the Warrington Township lighting consultant after obtaining written permission from the Township Zoning Officer. Warrington Township shall pay all associated connection and operation fees (to the electrical utility), for which the developer shall reimburse the Township for connection fees and operation fees under the appropriate rate, on a monthly basis, including appropriate administration fees. This payment arrangement shall continue until formal acceptance of dedication of public improvements, at which time Warrington Township shall assume these responsibilities. The developer shall warrant all parts and associated labor for the streetlighting system until 18 months from the date of formal acceptance of public improvements by the Township.
- (7) Upon completion of streetlight installation, the developer or their designated representative shall notify the Township Engineer, in writing, of completion of lighting facilities in accordance with the National Electric Code. A copy of the certificate of inspection from a qualified electrical inspection agency shall also be included with this notification.
- (8) All other proposed site lighting, such as building lights, sidewalk/walkway/pathway illumination, driveway illumination, signs, or other ornamental lighting, shall be shown in sufficient detail on the lighting plan to allow determination of the effects on adjacent properties, traffic safety, and overhead sky glow.

B. Outdoor lighting.

- (1) Purpose. The regulation of site lighting in Warrington Township is necessary to prevent negative impacts caused by misdirected or excessive illuminance, inappropriate or misaligned light fixtures (luminaires), glare, light trespass, and sky glow. Such regulation is necessary to encourage conservation of energy and to prevent destructive light pollution.
- (2) All site light fixtures installed and thereafter maintained, other than those serving one- or two-family dwellings, shall be full cut-off fixtures as defined by the IESNA (Illuminating Engineering Society of North America) with an uplight rating of UO in accordance with the B-U-G (Backlight, Uplight, Glare) rating system defined in the current *Model Lighting Ordinance (MLO)* authored jointly by the IDA (International Dark-Sky Association) and IES (Illuminating Engineering Society). Full cut-off fixtures shall not have vertical swivel mounting capability. Exceptions will be considered for the following situations:
 - a. Luminaires used to illuminate statues or other objects varying in shape that are mounted on a pole, pedestal, or platform, which are lamped and aimed such that 90 percent of the beam angle is not greater than the size of the object illuminated. Luminaires shall be shielded to minimize direct glare.
 - b. Luminaires used to illuminate American flags that can rotate 360 degrees shall have a beam

- angle based on a circle having a radius equal to the width of the flag at the height of the flag unless the flag is greater than 10 feet in width. Flags greater than 10 feet in width shall be illuminated by a beam with a radius not greater than two-thirds the flag width.
- c. Luminaires used for architectural accent and landscape lighting shall be lamped and aimed such that 100 percent of the distribution pattern falls within the illuminated structure. Luminaires shall be shielded to minimize direct glare. Landscape and accent up lighting shall be turned off automatically by 10:00 PM, or as permitted in the zoning ordinance.
 - d. Luminaires used for signage.
 - i. Top-mounted luminaires are preferred for externally illuminated signs. Luminaires shall be lamped and aimed such that 100 percent of the distribution pattern or beam angle falls on the face of the sign. Beam angles shall not exceed the size of the sign. Luminaires shall be shielded to minimize direct glare. In residential areas, the luminance shall not exceed an average maintained vertical existence of 10 fL (footlambert).
 - ii. When top-mounted luminaires are not feasible for good cause shown, alternate locations may be used provided that the luminaires are lamped and aimed such that 100 percent of the distribution pattern or beam angle falls on the face of the sign. Beam angles shall not exceed the size of the sign. Luminaires shall be shielded to prevent direct view of the light source from normal viewing angles. The luminance shall not exceed an average maintained vertical existence of 10 fL.
 - iii. Internally illuminate signage is permitted only on commercial properties with frontage on arterial streets. The majority of the sign surface, typically the background, shall be a dark color.
 - iv. Signage lighting shall be controlled by photocell for energy conservation during daylight hours and/or by timer for energy conservation outside of business hours.
 - e. Outdoor recreational and sports facilities, where it can be demonstrated that the arrangement of playing surfaces is such that illumination using full cutoff luminaires would result in poles located on or dangerously close to playing surfaces, may utilize semi-cutoff luminaires. Luminaires shall be constructed, located, and aimed such that illumination at grade does not cross any property line. Lamps shall be shielded from normal viewing angles.
 - f. Luminaires used within the interior of a parking structure, or where deemed necessary, along roadways shall meet cutoff classification requirements.
- (3) For freestanding lighting, all fixtures shall use appropriate fully shielded luminaires. Shielding shall be provided to screen light sources at angles above 72 degrees from the vertical. The maximum height of freestanding fixtures shall be in accordance with § 305-317.B.(10). Fixture heights shall be measured from the bottom of the fixture to ground level, except for athletic fields and courts.
- (4) For building-mounted lighting, fully shielded fixtures shall be used to screen the light source at angles above 72 degrees from the vertical. In all cases, lighting will not be permitted along the outline of a building(s) or along rooflines.
- (5) Only full cutoff luminaires may be used under outdoor canopies. They shall be shielded in such a manner that the edge of the fixture shield shall be level with or below the light source envelope and reflector. Outdoor canopies include, but are not limited to, the following application:
- a. Fuel pump canopies associated with service stations and convenience stores.
 - b. Exterior canopies above storefronts in shopping centers.
 - c. Exterior canopies above driveways and building entrances.
 - d. Pavilions and gazebos.
 - e. Parking structures within interior lighting visible from the exterior.
- (6) The use of mercury vapor lamps is prohibited.
- (7) Outdoor light fixtures for purposes of private usage shall not be attached or mounted from public

property (i.e. public buildings, utility poles, streetlights, road/street signs). Furthermore, these fixtures shall not tap or extend power from sources servicing public lighting and/or power devices.

- (8) Warrington Township shall be considered Lighting Zone 1, in accordance with the IES/IDA MLO referenced by the Leadership in Energy and Environmental Design (LEED) and other sustainability programs, desiring low ambient lighting levels in a community of predominantly single-family housing and rural community town centers. The MLO shall complement and in no case supersede the requirements of this section.
- (9) Flashing or strobing of light installations is not permitted. Temporary seasonal lighting is excluded.
- (10) Maximum pole heights shall be determined by the use of the lights and shall not exceed the pole heights shown in Table 5:

Table 5. Maximum Pole Height

Maximum Pole Height (feet)	
Residential uses	15
Nonresidential uses	
Commercial	30
Industrial	30
Institutional	30
Athletic fields	
Baseball, softball, football, soccer	80
Tennis, basketball	40
Other sports	40

- (11) Lighting design for properties situated in the BZ, CBD, CR, EV, IST, or WV zoning districts shall comply with the supplemental regulations in § 305-333.. When the regulations in § 305-333. differ from this section, the more-stringent requirements shall apply.
- (12) All athletic field lighting shall be equipped with timers set to shut off at 10:00 PM, or as permitted by the zoning ordinance.
- (13) All internally and externally lit signs shall be equipped with timers set to shut off at 10:00 PM, or as permitted by the zoning ordinance.
- (14) All lighting for decorative purposes only, such as illuminating a building, fountain, trees, landscaping, or similar feature shall be equipped with timers set to shut off at 10:00 PM, or as permitted by the zoning ordinance.

C. Light trespass and sky glow.

- (1) Luminaire design and placement shall be utilized to prevent light trespass along property lines. External shielding accessories to luminaires shall be used where it can be demonstrated that luminaire selection and placement alone could not prevent light trespass.
- (2) Site lighting installations shall further meet the specifications below:
 - a. For commercial, industrial, and institutional applications, illuminance from exterior lighting, façade lighting, landscape lighting, light emissions through windows caused by interior illumination, and all other forms shall not exceed 0.3 footcandle in the vertical plane at a height of 5 feet or higher at the property line of any neighboring residential property and shall not exceed 0.1 footcandle after 10:00 PM, or as permitted by the zoning ordinance.
 - b. For single, two-family, and multi-family dwellings, illuminance from exterior lighting, façade lighting, and landscape lighting shall not exceed 0.1 footcandle in the vertical plane at a height of 5 feet or higher at the property line of any neighboring residential property. Exceptions

may be granted provided these requirements are adhered to within 30 feet of any dwelling.

- (3) For commercial, industrial, and institutional applications, interior lighting shall be controlled automatically to turn off by 10:00 PM unless the building is occupied or as required by the zoning ordinance. Interior luminaires used for emergency illumination are excluded. Minimal security night lighting shall be allowed to remain on; emergency lighting is encouraged to be controlled by occupancy sensors. Interior ceilings and vertical surfaces within view from exterior of building shall not be illuminated at night. This provision is designed to minimize nuisance glare on neighboring residential properties and enhance energy conservation. Acceptable exemptions are:
 - a. Interior display lighting in retail facilities may remain on for security purposes. The use of minimal required illumination is encouraged.
 - b. For commercial, industrial, and institutional applications, outdoor light fixtures shall have a color temperature of 3,500 Kelvin or lower. Luminaire maintenance protocols shall assure luminaires are maintained with lamps and LED modules that comply with this section.
 - c. For residential applications, outdoor light fixtures shall have a color temperature of 2,700 Kelvin or lower. The use of minimal illumination is encouraged.
 - d. Outdoor light fixtures shall be continually maintained to assure light distribution compliant with this section and illuminance requirements.
- D. Illuminance requirements.
- (1) The principle of minimum necessary illuminance shall guide the design, installation, and maintenance of all outdoor lighting.
 - (2) Street lighting. Roadway lighting shall occur at intersections, roadways with designated bikeways, in developments with average densities of two units per acre or greater, and dangerous areas as may be determined by the Board of Supervisors and/or Township Planning Commission. All street lighting shall be photocell controlled, use house-side shielding when adjacent to dwelling units, and utilize shielding or refractive lenses to mitigate direct source glare.
 - a. 2,700 Kelvin or lower luminaires shall be used.
 - b. Lights located at roadway curves shall be located on inside radius of curves wherever possible.
 - (3) Outdoor parking facilities. All parking lot luminaires shall be full cutoff light fixtures with 2,700 Kelvin color temperature or lower. Parking facility illumination shall comply with the following specifications:
 - a. On-grade parking:
 - i. Minimum maintained horizontal illuminance at grade shall not exceed 0.2 footcandle (0.5 footcandle is acceptable in commercial zones where unusual security concerns can be shown).
 - ii. Maximum to minimum maintained horizontal illumination uniformity ratio shall not exceed 20:1 (15:1 ratio used when minimum maintained illumination at grade is 0.5 footcandle).
 - iii. Minimum vertical illumination shall be at least 0.5 footcandle measured five feet above finished grade at pedestrian crossings.
 - b. Parking structures.
 - i. Lighting within 30 feet of structure entrances shall be reverse photocell controlled, increasing illumination with increased daylight.
 - ii. Use of dual-level motion sensed lighting is encouraged.
 - iii. Open roof deck parking shall comply with requirement for on-grade parking outlined above.
 - c. All outdoor luminaires, exempting those used on single- and two-family dwellings, shall comply with the following glare ratings as defined by the MLO:

Table 6. Building-Mounted Luminaires

Building-Mounted Luminaires (from property line)	Glare Rating
More than 2 mounting heights	G1
1 to 2 mounting heights	G0
Less than 1 and greater than 0.5 mounting height	G0
0.5 mounting height or less	G0
Other luminaire types	G1

E. Outdoor lighting energy conservation.

- (1) All outdoor lighting, other than that serving single-, two-, and multi-family dwellings, shall be turned off though the use of automatic control devices during non-operating hours or by 10:00 PM, except where it can be demonstrated that safety or security purposes require illumination or as required by the zoning ordinance. The following are acceptable exemptions from this requirement:
 - a. Operating hours of the facility are past 10:00 PM, or as permitted by the zoning ordinance, in which case the lighting shall turn off at the conclusion of business activities.
 - b. Exterior retail and merchandise display lighting may remain on until 10:00 PM, or as permitted by the zoning ordinance, unless the business is open to the public later than 10:00 PM, in which case the lighting shall be turned off at the conclusion of the business period, or as permitted by the zoning ordinance.
 - c. Exterior lighting for recreational areas, athletic fields, and courts shall not remain on after 10:00 PM, or as permitted by the zoning ordinance, unless athletic or public activity is in progress. If organized activity warrants lighting of these facilities after 10:00 PM, it is the responsibility of the participants to ensure lights are turned off at the conclusion of activity.
- (2) Minimal required levels of illumination are to be used in all applications. All lighting shall be designed, selected, and installed both to prevent negative impacts caused by misdirected or excessive light and to conserve energy.
- (3) The use of LED luminaires is encouraged. Luminaires shall contain integral lamp life sensing controls or have maintenance protocols that require LED module replacement when LED drivers are replaced. Luminaire maintenance protocols shall assure luminaires are maintained to be compliant with this article. The use of incandescent and halogen lamps is discouraged.
- (4) Dimming controls for outdoor lighting is encouraged. High-end trim settings shall be utilized to assure minimum necessary illumination and resolve compliance discrepancies upon Township inspection.

F. Evidence of compliance.

- (1) Evidence of compliance shall include all of the following:
 - a. Descriptions of all outdoor luminaires, including lamps. Manufacturer catalog cut sheets for luminaire shall include model number with all accessories and selections clearly indicated, dimensioned cross sections, B-U-G ratings, and photometric report prepared by independent testing lab graphically indicating candela distributions from 0 degrees to 180 degrees vertically. Pole-mounted lights shall include EPA (effective projected area) ratings. Adjustable fixtures, where permitted, shall be capable of locking in place to prevent movement of fixture during servicing. Lamp description shall include type of lamp source, wattage, clear or coated bulb, color temperature, spectral power distribution curves, and initial and mean lumens. Spotlights or floodlights shall also include beam angles.

- b. Mounting heights and details should be included for all fixtures.
 - c. Light pole diameters and dimensioned foundation details shall be provided. Light poles and foundations shall be designed to withstand 100-mph winds.
 - d. Where horizontal illumination metrics are required, site lighting plans, to scale, with computer-generated maintained footcandle calculation points on a maximum calculation grid spacing of every 10 feet are to be provided. Plans shall indicate location of all fixtures and aiming angles for spot and flood fixtures.
 - e. Site lighting plans, to scale, with computer-generated initial footcandle calculation points on a maximum calculation grid spacing of every 10 feet are to be provided (initial illumination calculations may be used to field verify compliance with lighting requirements at the completion of construction).
 - f. Calculation summary shall include minimum, average, and maximum maintained illumination levels in footcandles, as well as uniformity ratios as described in Subsection F.(1)d.. In addition, provide light loss factor used for each fixture type.
 - g. Adjustable site lighting fixtures shall indicate aiming angles, distribution patterns, and illumination or existence levels that illustrate compliance with Subsection F.(1)b..
 - h. Lighting calculations shall be performed by a NCQLP (National Council on Qualifications for the Lighting Professions), LC (Lighting Certified) professional, unless this requirement creates undue hardship that can be demonstrated.
 - i. Once properly installed, fixtures are to be aimed, permanently affixed, and maintained in the approved position. All glare shield and cutoff devices shall be maintained.
- G. Compliance, monitoring penalties and prohibitions.
- (1) The Township may conduct post-installation inspections of lighting fixtures in order to ensure compliance with ordinance requirements and intents. Corrective action may be required for any installation that does not meet ordinance criteria or which causes unacceptable levels of light trespass, glare, or contributions to sky glow.
 - (2) The Township may recommend changes in the field that would correct problem situations, such as re-aiming floodlights, adding appropriate shielding, decreasing lamp wattage, or replacing equipment.
 - (3) Temporary seasonal lighting shall be excluded.

§ 305-318. Blocks.

- A. The lengths, widths, and shapes of blocks shall be determined with regard to:
 - (1) The planned use of the land.
 - (2) Zoning requirements as to lot size, dimension, and minimum lot area per dwelling unit.
 - (3) Need for convenient access.
 - (4) Control and safety of street traffic.
 - (5) The limitations and opportunities of the topography.
- B. In general, all blocks in a subdivision shall have a minimum length of at least 500 feet and a maximum length of 1,600 feet.
- C. Whenever practicable, blocks shall be of such width as to provide two tiers of lots of the minimum size permitted under the applicable zoning classification, except in the case of reverse frontage lots or lots along a major thoroughfare, where the lots front on an interior street.
- D. Waivers of the above requirements are possible in multifamily, commercial, and industrial developments.
- E. Pedestrian crosswalks not less than 10 feet wide and with a concrete paving not less than 4 feet wide shall be required where deemed essential to provide circulation or access to schools, playgrounds, shopping centers, transportation, and other community facilities. In areas where there is heavy traffic,

the Board of Supervisors may require the owner to provide additional pedestrian safety features including raised pedestrian crossings, traffic calming devices, traffic lights with pedestrian push buttons or detection, flashing pedestrian safety lights, traffic signals and signs giving pedestrian priority, and other safety features as needed to protect pedestrians.

§ 305-319. Lots.

- A. The size, shape, and orientation of lots shall be appropriate for the location of the subdivision and for the type of development and use contemplated.
- B. Lot dimensions shall conform to the requirements of the zoning ordinance.
- C. All lots shall have at least a 50-foot width access to a public street, except multifamily use, which may have access to a deed-restricted parking area and access road but shall be accessible from a public street. Lots where the front and rear property lines abut streets shall be prohibited, except in the case of reverse frontage along major thoroughfares.
- D. All lots must be kept free of any debris or nuisances whatsoever.
- E. In general, side lot lines shall be at right angles or radial to the street line.
- F. The depth and width of lots reserved or laid out for commercial and industrial uses shall be adequate to provide for the off-street parking generated by the use.
- G. Lots excessively deep in relation to width, or lots excessively irregular in shape are to be avoided. A proportion of two-and-a-half in depth to one in width is generally accepted as a proper maximum.
- H. Flag lots shall meet the requirements of § 370-819. of the zoning ordinance.
 - (1) The minimum lot width of the flag portion of the lot shall have a dimension not to exceed one in width by two in length. At any point, the minimum width of the flag portion of the lot shall be sufficient to provide for the minimum width of the house envelope and required yard setbacks.
 - (2) Dwellings shall be constructed facing a common driveway to prevent the front façade of a dwelling facing the rear façade of any other dwelling. The front yard setback line shall be parallel to the common driveway.
- I. House numbers shall be assigned by the Township Fire Marshall and shall be indicated on the final plan.
- J. Existing buildings. The following regulations shall apply as they affect tracts upon which buildings exist at the time of the subdivision:
 - (1) Nonconforming yard requirements. The subdivision of a tract which creates nonconforming front, side and/or rear yards for existing buildings shall not be approved. Nonconforming front yards may be approved if necessary to obtain proper street alignment.
 - (2) Alterations and replacements will be permitted within the existing structure, but exterior extensions of the building must conform to the requirements of the zoning ordinance.
 - (3) Conversions. In cases where the principal building use has not been as a dwelling, its conversion to a dwelling shall comply with all of the requirements of the zoning ordinance and the Township's Building Code.
 - (4) Demolitions. Proposed demolitions of existing buildings on a lot for subdivision or land development shall require a demolition permit as required in § 370-1104. of the zoning ordinance.

§ 305-320. Easements.

- A. Easements with a minimum width of 20 feet shall be provided as required for access, trails, utilities, or drainage, either existing or proposed.
- B. To the fullest extent possible, easements shall be centered on or adjacent to rear or side lot lines.
- C. Nothing shall be permitted to be placed, planted, set, or put within the area of an easement necessary for access and maintenance on any utility or drainage way contained within that easement, unless approval is obtained from the applicable easement grantee. Where such easements contain existing

vegetation, i.e., trees and/or ground cover, as much as possible of the existing native vegetation shall be maintained in its natural state to preserve the natural appearance and stabilize soil conditions. Where such vegetation exists, clearing plans shall be approved by the Township before clearing commences.

- D. Where a subdivision or land development is traversed by a watercourse or drainageway, there shall be provided a drainage easement or street line conforming substantially with the line of such watercourse and of such width as will be adequate to preserve natural drainage but not less than 20 feet, or as may be required or directed by the PaDEP. The owner shall restore and/or stabilize the existing streambanks or any open ditches in a manner approved by the Township Engineer when it is deemed necessary by the Board of Supervisors. Within the restrictions of this section, the Board of Supervisors may permit or require such drainageway improvements to effectively improve the quality and character of such drainageway.
- E. Where stormwater or surface water will be gathered within the subdivision or land development and discharged or drained in concentrated volumes over lands within or beyond the boundaries of the subdivision or land development, the owner shall reserve or obtain easements over all lands affected thereby; such easements shall be adequate for such discharge of drainage and for the carrying off of such water and for the maintenance, repair, and reconstruction of the same, including the right of passage over and upon the same by vehicles, machinery, and other equipment for such purposes, and which shall be of sufficient width for such passage and work. The owner shall convey, free of charge or cost, such easements to the Township upon demand.
- F. The owner of any lot, upon written request by the Township and at the owner's sole expense, shall remove anything placed, planted, set, or put (with or without knowledge of this regulation) within the area of any easement.
- G. No street line or easement for any purpose whatsoever shall be recited or described in any deed unless the same has been shown on the recorded subdivision or land development plan.

§ 305-321. Clearing, grading and drainage.

- A. Clearing. Proposed clearing in areas of significant existing vegetation (to be determined by the Township) shall not commence without review and approval by Township Zoning Officer. A building location plan(s) locating trees over 6 inches in diameter with common name and proposed grading when existing topography exceeds 8 percent must be submitted for review with preliminary plan submission. In addition, when the owner proposes to disturb resource protection areas, a site inspection of the uncleared lots with building locations staked is required before building permits will be issued for the individual lot or lots. Clearing for agricultural uses shall not be subject to the provisions of this section.
- B. Grading and drainage.
 - (1) Blocks and lots shall be graded to secure proper drainage away from buildings and to prevent the pooling of stormwater. A minimum 2 percent grade shall be provided for all pervious surface areas to provide positive drainage.
 - (2) All drainage provisions shall be of such design as to carry surface waters to the nearest practical and adequate street, storm drain, stormwater management facility, or natural watercourse. Owners must carry surface waters to the nearest practical storm drain or natural watercourse. The owner, at their expense, shall construct and/or install such drainage structures and/or pipes as are necessary to prevent erosion damage and to satisfactorily carry off such surface waters.
 - (3) No excavation shall be made with a cut face steeper than 3:1 (horizontal to vertical), except under one or more of the following conditions:
 - a. The excavation is located so that a line having a slope of 3:1 and passing through any portion of the cut face will be entirely inside of the property lines of the property on which the

- excavation was made.
- b. The material in which the excavation is made is sufficiently stable to sustain a slope of steeper than two horizontal to one vertical, and a written statement of a civil engineer, licensed by the Commonwealth of Pennsylvania and experienced in erosion control, to that effect is submitted to the Township Engineer and approved by him. The statement shall state the site has been inspected and that the deviation from the slope specified hereinbefore will not result in injury to persons or damage to property.
 - c. A concrete or stone masonry wall is provided to support the face of excavation, designed in accordance with the American Association of State Highway and Transportation Officials' Standard Specifications for Highway Bridges, as amended, and constructed in accordance with PennDOT, Publication 408 Specifications, as amended.
- (4) No fill shall be made which creates any exposed surface steeper in slope than three horizontal to one vertical, except under one or more of the following conditions:
- a. The fill is located so that settlement, sliding or erosion will not result in property damage or be a hazard to adjoining property, streets, alleys, or buildings.
 - b. A written statement from a civil engineer licensed by the Commonwealth of Pennsylvania and experienced in erosion control, certifying that they have inspected the site and that the proposed deviation from the slope specified above will not endanger any property or result in property damage, is submitted to and approved by the Township Engineer.
 - c. A concrete or stone masonry wall is provided to support the face of excavation, designed in accordance with the American Association of State Highway and Transportation Officials' Standard Specifications for Highway Bridges, as amended, and constructed in accordance with PennDOT, Publication 408 Specifications, as amended.
- (5) The top or bottom edge of slopes shall be a minimum of 5 feet from property or street lines of streets in order to permit the normal rounding of the edge without encroaching on the abutting property.
- (6) The development plans shall be reviewed by the Bucks County Conservation District so the developer can obtain technical assistance to determine water runoff and solutions for solving water problems as they relate to erosion and sedimentation control.
- C. Grading for drainage. In order to provide more-suitable sites for building and other uses, improve surface drainage, and control erosion, the following requirements shall be met:
- (1) All lots, tracts or parcels shall be graded with a minimum 2 percent slope in non-impervious areas to provide proper drainage away from buildings and dispose of runoff without ponding; and all land within a development shall be graded to drain and dispose of surface water without ponding, except within stormwater management facilities.
 - (2) All drainage provisions shall be of such design to adequately handle the surface runoff and carry it to the nearest suitable outlet, such as a curbed street, storm drain, stormwater management facility or natural watercourse. Where drainage swales are used to divert surface waters away from buildings, they shall be sodded or planted as required.
 - (3) Excavations and fills.
 - a. Cut-and-fill slopes shall not be steeper than 3:1 unless stabilized by a retaining wall or cribbing, except as approved by the Board when handled under special conditions.
 - b. Adequate provisions shall be made to prevent surface water from damaging the cut surface of excavations and the sloping surfaces of fills.
 - c. Cut-and-fill slopes shall not endanger adjoining property.
 - d. Fill shall be placed and compacted in order to minimize sliding or erosion of the soil.
 - e. Fill shall not encroach on natural watercourses or constructed channels.
 - f. Fill placed adjacent to natural watercourses or constructed channels shall have suitable

protection against erosion during periods of flooding.

- g. Grading shall be set back a minimum distance of 5 feet from property lines and shall be performed in such a way that water is not diverted onto the property of another landowner unless the affected landowner gives consent.
- h. During grading operations, necessary measures for dust control shall be exercised.
- i. Provision shall be made for the installation of temporary stream crossings where any road crosses a live stream. All applicable permits must be acquired.

§ 305-322. Stormwater management.

A. General.

- (1) Storm drainage required. A storm sewer system and all appurtenances shall be required to be constructed by the developer in any area from which the surface or subsurface drainage could impair public safety or cause physical damage to adjacent land or public property. The system(s) shall be designed to collect water at any point where 3 to 5 cubic feet per second is accumulated, at the bottom of all vertical grades, and immediately upgrade from all street intersections. The system(s) shall discharge to the nearest practical natural drainage channel, stormwater management facility or storm system.
- (2) Off-site improvements. Any necessary corrective measures deemed appropriate by the Board of Supervisors to alleviate any existing off-site drainage problem affected by the subdivision or land development must be undertaken by the owner. The costs for such measures will be borne entirely by the developer.
- (3) Total watershed evaluation. The future use of undeveloped areas upstream shall be taken into account in the calculation of pipe sizes for storm sewer system designs. The capacity and maximum anticipated present flow of the body or system receiving the proposed system's discharge shall be calculated to verify its capability of receiving any additional flow caused by the development or subdivision. The runoff from any proposed development shall be subject to an evaluation which includes the anticipated runoff from other existing or proposed developments within the same watershed. Stormwater management facilities designed to serve more than one property or development in the same watershed are encouraged; consultation with the Township is required prior to the design of such facilities.
- (4) Underdrains. Underdrains shall be provided as required by the Township's building code, as amended.
- (5) Drainage from nonnatural sources. Water originating from other-than-natural sources, such as air-conditioning units, sump pumps, or other dry-weather flow, shall be discharged over lawn areas or into natural watercourses or stormwater facilities on the property as permitted in Chapter 288, Stormwater Management, of the *Warrington Township Code of Ordinances*. Prohibited discharges as defined in the aforementioned Chapter 288 may not be deposited into natural watercourses or storm drains.
- (6) Highway occupancy permit. A highway occupancy permit is required from the PennDOT if water is to be carried in any way onto the state highway street line or into the state highway storm drainage system.
- (7) The developer may be required to participate in off-site storm drainage improvements in the drainage basin within which the proposed development is located. The specific off-site drainage improvements required shall be those specified by the Township Board of Supervisors.

B. Stormwater management plan.

- (1) A stormwater management plan shall be submitted fulfilling the requirements contained in Chapter 288, Stormwater Management.
- (2) Storm drainpipes and inlets.

- a. Design flow rate.
 - i. The storm drain system shall be designed to convey a 50-year storm peak flow rate, at a minimum. Storm drainage systems that are tributary to a stormwater management facility shall be designed to convey a 100-year storm peak flow rate. Precipitation data to be used in the analysis of peak rates of discharge shall be obtained from the Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, latest version, United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design Studies Center, Silver Spring, Maryland. NOAA's Atlas 14 can be accessed at <http://hdsc.nws.noaa.gov/hdsc/pfds/>. All design computations shall be submitted in tabular form. The 50-year peak flow rate shall be determined by the Rational Formula.

Table 7. Peak Flow Rate Rational Formula

Peak Flow Rate Rational Formula	
Q = CIA	
Q =	Peak runoff rate, in cubic feet per second
C =	Runoff coefficient equal to the ratio of the peak runoff rate to the average rate of rainfall over a time period equal to the time of concentration
I =	Average rainfall intensity in inches per hour for a time equal to the time of concentration
A =	Drainage area in acres

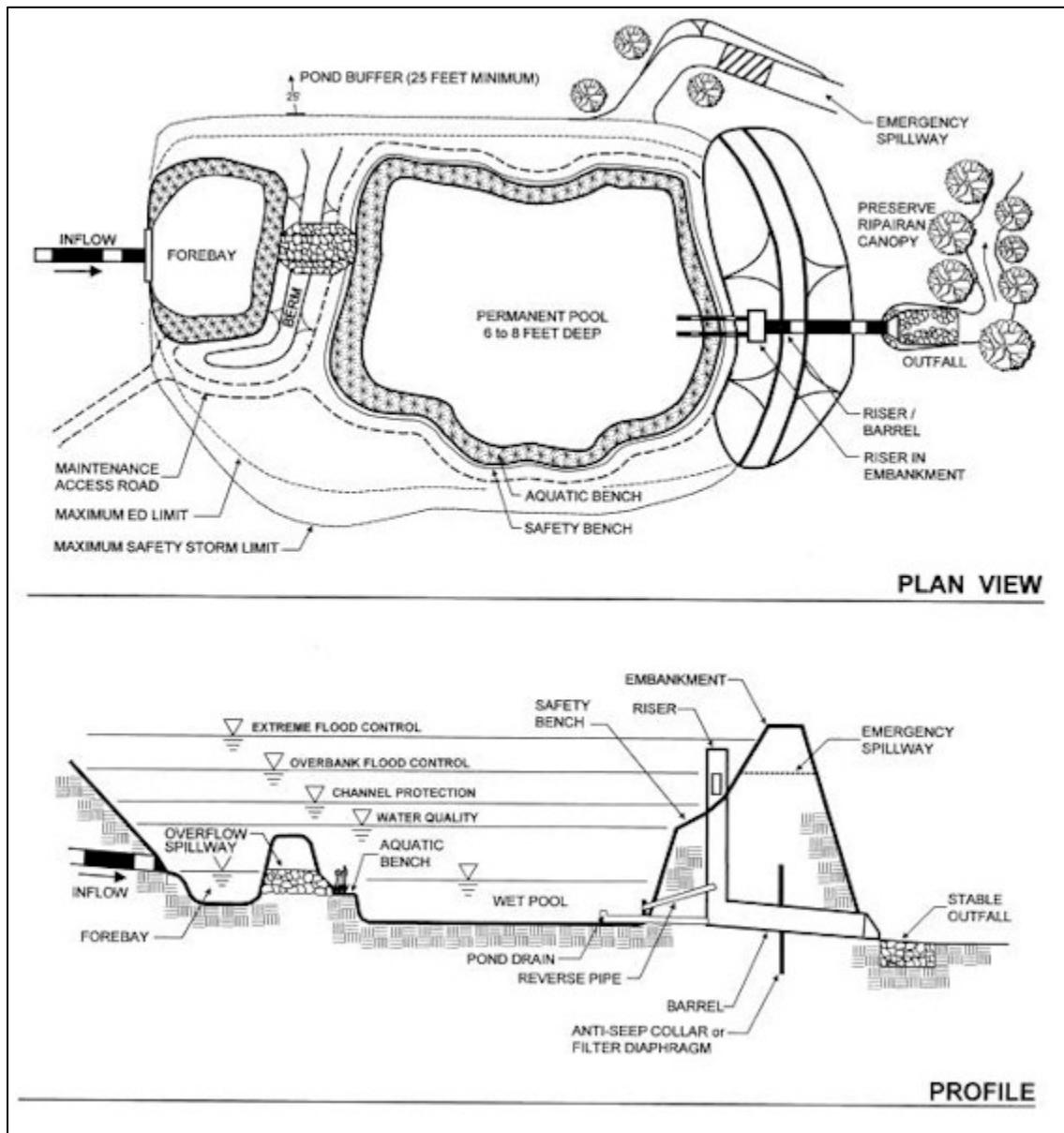
- ii. Appropriate values for runoff coefficients and rainfall intensities can be found in Chapter 288, Stormwater Management.
- b. Inlet capacity. At a minimum, all inlets must be designed to accommodate the 50-year peak flow rate. The capacity of all C-, M-, or S-type inlets shall be determined from the PennDOT Design Manual, Part 2, Highway Design, as amended. The design capacity of all 4-foot special inlets shall be 5.5 cubic feet per second, and all 6-foot special inlets shall be 6.5 cubic feet per second.
- c. Straight pipe sections. All storm drainpipes shall be designed to follow straight courses. No vertical curves shall be permitted in the storm drainpipe system.
- d. Minimum grade and size. All storm drainpipes shall be designed to maintain a minimum grade of 0.5 percent; all storm pipes shall have a minimum inside diameter of 18 inches or a cross-sectional area of 254 square inches, except pipes under a 25-foot or greater fill shall not be less than 24 inches or a cross-sectional area of 453 square inches.
- e. Pipe capacity. The capacity of all pipe culverts shall, as a minimum, provide the required carrying capacity as determined by the following sources:
 - i. United States Department of Transportation, Federal Highway Administration, Hydraulic Engineering Circular No. 5, Hydraulic Charts for the Selection of Highway Culverts, or latest version.
 - ii. United States Department of Transportation, Federal Highway Administration, Hydraulic Engineering Circular No. 10, Capacity Charts for the Hydraulic Design of Highway Culverts, or latest version.

- iii. United States Department of Transportation, Federal Highway Administration, Hydraulic Engineering Circular No. 13, Hydraulic Design of Improved Inlets for Culverts, or latest version.
 - f. Pipe arches. Where headroom is restricted, equivalent pipe arches may be used in lieu of circular pipe.
 - g. Allowable headwater depth. At all inlets or manholes, the maximum allowable headwater depth shall be one foot below the top of the inlet grate or the manhole cover.
 - h. Horizontal pipe deflections. A manhole or inlet shall be provided at all horizontal deflections in the storm pipe system exceeding 1 degree.
 - i. Minimum cover. A minimum of 3 feet of cover shall be maintained over all storm drainpipes, that are not of reinforced concrete construction. The top of storm drainpipes shall be at least 6 inches below subgrade elevation.
 - j. Pipe Elevations at Storm Sewer Structures. The crowns of all pipes of equal sizes tying into an inlet or manhole shall be offset vertically a minimum distance of 0.2 feet. The crowns of pipes of different diameters tying into storm sewer structures shall be set at equal elevations.
 - k. Diversion of runoff. All storm drainpipes shall be designed to carry the runoff into a detention basin or similar facility used to control the rate of runoff in accordance with Chapter 288 Stormwater Management.
 - l. Material. All pipe material shall be subject to the approval of the Township Engineer. All storm drainpipes within Township street lines shall be reinforced concrete pipe (RCP) or elliptical reinforced concrete pipe (ERCP) conforming to the specifications of the most recent version of PennDOT Publication 408, as amended. High-density polyethylene pipe (HDPE) conforming to PennDOT Publication 408 may be used outside of Township street lines with the approval of the Township Engineer. Corrugated metal pipe (CMP) may not be used within the street line of any road maintained by Warrington Township.
 - m. Protective grates shall be provided at the locations stormwater enters storm sewer systems (i.e. headwalls, endwalls, etc.), which shall be designed to preclude excessive maintenance as a result of potential clogging by the accumulation of debris and to prevent human and wildlife from being drawn into the storm sewer. The maximum area between the horizontals and the verticals of the protective grate shall be 6 inches.
- (3) Runoff control measures.
- a. Runoff control. All stormwater runoff shall be managed in accordance with requirements contained in Chapter 288, Stormwater Management, in regards to the volume of stormwater runoff, peak rate of discharge of stormwater runoff, and stormwater runoff quality.
 - b. Design of detention basins. All detention basins shall be designed in accordance with the procedures developed by the USDA Natural Resources Conservation Service in Technical Release No. 55, Urban Hydrology for Small Watersheds, or other methods described in Chapter 288, Stormwater Management. In addition, detention basins shall be designed to use the natural contours of the land and result in broad, shallow basins whenever possible. Maximizing a basin's depth and side slopes, in contrast to the surrounding topography, in order to obtain additional area for building or lot utilization is not acceptable.
 - c. Basin design criteria. The following design criteria shall be used in the design of all detention basins in the Township. The basins shall be designed to detain the quantity of water resulting from a 100-year, 24-hour storm under full development conditions released at a maximum outflow rate as allowed in Chapter 288, Stormwater Management. All flows in excess of the above-mentioned standard shall flow over an emergency spillway. Storage capacity shall be calculated between the elevation of the low-flow orifice for the basin and the crest of the emergency spillway. Dead storage below the low-flow orifice shall not be included. Infiltration

- shall not be included when calculating volume requirements for peak rate control.
- d. Underground detention basins shall be designed to detain the post-development volume of water resulting from a 100-year, 24-hour storm totally within the storage media while discharging at a maximum outflow rate as permitted in Chapter 288, Stormwater Management. The top of underground basins shall be at least 6 inches below the bottom of the subbase in paved areas and at least 12 inches below final grade in unpaved areas.
 - i. All underground basins and seepage pits shall be provided with a means of access for inspection and maintenance in a manner acceptable to the Township Engineer.
 - ii. Outlet structures for underground stormwater management facilities (with the exception of seepage beds) shall be equipped with weirs to function as emergency spillways. The minimum capacity of the emergency spillway shall be such that the emergency spillway shall discharge the post-development peak flow entering the basin from the 100-year 24-hour design storm with a minimum of one foot of freeboard. The principal spillway shall be assumed to be completely blocked.
 - iii. The storage volume for underground basins shall be calculated between the elevation of the low-flow orifice and the elevation of the top of the storage media. The assumed void ratio for coarse aggregate shall be 0.4; void ratios for manufactured storage media shall be verified by manufacturers' specifications. Regardless of infiltration, dead storage below the low-flow orifice shall not be included in the storage volume.
 - iv. The storage volume for seepage beds shall be calculated between the bottom of the bed and the top of the storage media. The assumed void ratio for coarse aggregate shall be 0.4; void ratios for manufactured storage media shall be verified by manufacturers' specifications.
 - e. Maximum depth of detention basins. The maximum depth of water in a detention basin shall be 8 feet, as measured from the lowest point in the basin to the crest of the emergency spillway.
 - f. Emergency spillway. Whenever possible, the emergency spillway for detention basins shall be constructed on undisturbed ground. Emergency spillways shall be constructed of reinforced concrete, vegetated earth or other materials approved by the Township Engineer. All emergency spillways shall be constructed so that the detention basin berm is immediately protected against erosion. The minimum capacity of the emergency spillway shall be such that the emergency spillway shall discharge the post-development peak flow entering the basin from the 100-year, 24-hour design storm with a minimum of one foot of freeboard. The principal spillway shall be assumed to be completely blocked. Linings for emergency spillways shall extend along the upstream and downstream berm embankment slopes. The upstream edge of the emergency spillway lining shall extend to a point at least 3 feet below the emergency spillway crest elevation or bottom of the embankment, whichever is higher. The downstream lining of the emergency spillway shall, as a minimum, extend to the toe of the embankment. The emergency spillway shall not discharge over earthen fill and/or easily erodible material.
 - g. Antiseep collars. Antiseep collars shall be installed around the principal pipe barrel within the normal saturation zone of the detention basin berms. The antiseep collars and their connections to the pipe barrel shall be watertight. A minimum of two anti-seep collars are required and shall extend a minimum of two feet beyond the outside of the principal pipe barrel. The maximum spacing between collars shall be 14 times the minimum projection of the collar, measured perpendicular to the pipe.
 - h. Freeboard. Freeboard is the difference between the 100-year design flow elevation in the emergency spillway and the top of the settled detention basin embankment. The minimum

- freeboard shall be one foot.
- i. Slope of detention basin embankment. The maximum slope of detention basin embankments shall be three horizontal to one vertical (3H:1V).
 - j. Width of berm. The minimum top width of detention basin berms shall be 10 feet. A cutoff trench (keyway) of impervious material shall be provided under all embankments that require fill material. The cutoff trench shall be a minimum of 8 feet wide, 3 feet deep, and have side slopes of one horizontal to one vertical.
 - k. All basin embankments shall be placed in lifts not to exceed one foot in thickness, and each lift shall be compacted to a minimum of 95 percent of the modified proctor density as established by ASTM D-1557. Prior to proceeding to the next lift, the compaction shall be checked by a registered professional geotechnical engineer employed by the developer. Compaction tests shall be run on the leading and trailing edge of the berm along with the top of the berm. Verification of required compaction shall be submitted to the Township Engineer prior to utilization of any basin for stormwater management.
 - l. Slope of basin bottom. In order to ensure proper drainage of the detention basin, a minimum grade of 1 percent shall be maintained for all sheet flow. A minimum grade of 1 percent shall be maintained for all channel flow. Basins designed for infiltration may have flat 0 percent bottoms.
 - m. Energy dissipators. Energy-dissipating devices (riprap, end sills, etc.) shall be placed at all basin outlets.
 - n. Safety/aquatic benches. All areas that are deeper than 4 feet should have two safety benches, totaling 15 feet in width. One should start at the normal water surface and extend up to the pond side slopes at a maximum slope of 10 percent. The other should extend from the water surface into the pond to a maximum depth of 18 inches, also at slopes no greater than 10 percent. The fencing shall be a minimum height of 4 feet high and have no horizontal bars more than 4 inches above ground, except for the top bar, and shall be of a design and material approved by the Township Engineer.

Figure 8. Safety/Aquatic Benches.



Source: Pennsylvania Best Management Practices Manual for Wet Pond/Retention Basin (6.6.2)

- o. All basin outfall pipes shall be watertight Class III reinforced concrete pipe having O-ring joints. All joints shall be mortared. To minimize clogging and to facilitate cleaning, outlet pipes shall have an internal diameter of at least 18 inches and a minimum grade of 0.5 percent.
- p. Landscaping of detention basins. Landscaping and planting in detention basins shall be provided. It shall be aesthetically pleasing and compatible with surrounding land uses and require a minimum of maintenance. Subsurface basins and seepage pits shall be designed in a manner to allow application of general landscape requirements. Basins shall be planted and landscaped with native plants and shall be in accordance with §§ 305-329.E.(8) and 305-329.F.(5)..
- i. Basin floors. Basin bottoms shall be planted with a growth including either native grasses or a meadow effect of native and naturalized wildflowers, depending on the

desirability of the basin as a recreation area or as a natural area. There shall be a sufficient variety of trees, bushes, flowers, and grasses to create a natural setting.

- ii. Native plants shall be required in all stormwater basins per Pennsylvania Stormwater Best Management Practices Manual, Appendix B.
 - iii. Basin berms or perimeter. A plan shall be submitted for Township review and approval which shows the provisions for landscaping around the perimeter of the basin. The plan should include both evergreen material and deciduous material in the minimum sizes outlined in § 305-329.F.(4)..
 - q. Facilities designed for infiltration stormwater runoff shall meet the requirements of Chapter 288, Stormwater Management, and the Pennsylvania Stormwater Best Management Practices Manual, latest edition, as amended from time to time.
 - r. Protective grates shall be provided at all basin outlet structures and shall be designed to preclude excessive maintenance for potential clogging by debris and to prevent human and wildlife from being drawn into the storm sewer. The maximum area between the horizontals and the verticals of the protective grates shall be 6 inches.
- (4) Culverts and drainage channels.
- a. Design flow standard. All culverts and drainage channels shall be designed to carry a minimum flow rate equal to a 50-year, 24-hour storm. All culverts and drainage channels that are tributary to a stormwater management facility shall be designed to convey a 100-year storm peak flow rate. Precipitation data to be used in the analysis of peak rates of discharge shall be obtained from the Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, latest version, United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design Studies Center.
 - b. Erosion prevention. All drainage channels shall be designed to prevent the erosion of the bed and bank areas. The flow velocity in all vegetated drainage channels shall not exceed the maximum permissible velocity to prevent erosion. Suitable bank stabilization shall be provided where required to prevent erosion of the drainage channels. Where storm sewers discharge into existing drainage channels at an angle greater than 30 degrees from parallel with the downstream channel flow, the opposite bank shall be stabilized by the use of riprap or masonry and/or concrete walls. The stabilization shall be designed to prevent erosion and frost heave under and behind the stabilizing media.
 - c. Maximum side slope. Any vegetated drainage channel requiring mowing of the vegetation shall have a maximum grade of three horizontal to one vertical on those areas to be mowed.
 - d. Design standard. Because of the critical nature of vegetated drainage channels, the design of all vegetated channels shall, as a minimum, conform to the design procedures outlined in the most recent versions of the PaDEP's Erosion and Sediment Pollution Control Manual and the Pennsylvania Stormwater Best Management Practices Manual. Several acceptable sources outlining procedures for unvegetated drainage channels include the following:
 - i. United States Department of Transportation, Federal Highway Administration, Hydraulic Engineering Circular No. 5, Hydraulic Charts for the Selection of Highway Culverts.
 - ii. Federal Highway Administration, Hydraulic Engineering Circular No. 13, Hydraulic Design for Improved Inlets for Culverts.
- C. Stormwater best management practices (BMP) maintenance and operation. All stormwater best management practices will be managed in accordance with the operations and maintenance plan required by Chapter 288, Stormwater Management.
- D. Maintenance of all drainage facilities and watercourses within any subdivision or land development

is the responsibility of the developer until the Notice of Termination is issued and such facilities are accepted by the Township, or some other entity designated by the Township, after which they become the responsibility of the accepting entity.

- E. It is the responsibility of any person, corporation, or other entity doing any act on or across a communal stream, watercourse, or swale, or upon the floodplain or street line during the period of activity, to return it to its original or equal condition after such activity is completed.
- F. Maintenance of drainage facilities or watercourses located on a private property is the responsibility of the owner of the property.
- G. No person, corporation, or other entity shall block, impede the flow of, alter, construct any structure, deposit any material or thing, or commit any act which will affect normal or flood flow in any communal stream or watercourse without having obtained prior approval from the Township or the PaDEP, whichever is applicable.
- H. Adequate street lines and/or easements shall be provided for all drainage facilities and watercourses which are proposed for acceptance by the Township or other official agency.
- I. Each person, corporation, or other entity which makes any surface change shall be required to:
 - (1) Collect on-site surface runoff and dispose of it to the point of discharge into the nearest natural watercourse or suitable storm drain in compliance with Chapter 288, Stormwater Management.
 - (2) Accommodate existing off-site runoff through a proposed development by designing conveyance systems to adequately handle storm runoff from a fully developed area upstream.
 - (3) Pay a proportionate share of the total cost of off-site improvements to the common natural watercourse, based on a fully developed drainage area.
 - (4) Provide and install, at the developer's expense, and in accordance with Township requirements, all drainage and erosion-control improvements (temporary and permanent) as required by the erosion and sedimentation control plan, the Township Engineer, or the Bucks County Conservation District.
- J. All major streams shall be kept open and free flowing.

§ 305-323. Erosion and sedimentation control.

A. General.

- (1) No changes shall be made in the contour of the land, and no grading, excavating, removal or destruction of the topsoil, trees, or other vegetative cover of the land shall commence until such time that a plan for minimizing erosion and sedimentation has been processed with and reviewed by the Township Engineer or there has been a determination by the Township Engineer that such plan is not necessary.
- (2) All subdivisions or land developments involving the disturbance of 1,000 square feet or more of earth or as required in accordance with the latest regulations of the Bucks County Conservation District shall submit a plan to the Bucks County Conservation District for review. No approval may be given without a letter of adequacy from the Bucks County Conservation District.
- (3) No subdivision or land development plan shall be approved unless:
 - a. There has been a plan approved by the Township Engineer that provides for minimizing erosion and sedimentation consistent with this section, and an improvement bond or other acceptable security is deposited with the Township in the form of an escrow guaranty which will ensure installation and completion of the required improvements; or,
 - b. There has been a determination by the Township Engineer that a plan for minimizing erosion and sedimentation is not necessary.
- (4) Measures used to control erosion and reduce sedimentation shall be in compliance with 25 Pa. Code Chapter 102 and meet the standards and specifications contained in the most-recent version of the PaDEP's Erosion and Sediment Pollution Control Manual. The Township Engineer shall

confirm compliance with the appropriate specifications.

B. Performance principles. The following measures are effective in minimizing erosion and sedimentation and shall be included where applicable in the control plan:

- (1) Stripping of vegetation, regrading or other development shall be done in such a way that will minimize erosion.
- (2) Development plans shall preserve salient natural features, keep cut-fill operations to a minimum, and ensure conformity with topography so as to create the least erosion potential and adequately handle the volume and velocity of surface water runoff.
- (3) Whenever feasible, natural vegetation shall be retained, protected, and supplemented.
- (4) The disturbed area and the duration of exposure shall be kept to a practical minimum.
- (5) Disturbed soils shall be stabilized as quickly as practicable.
- (6) Temporary vegetation and/or mulching shall be used to protect exposed critical areas during development.
- (7) The permanent (final) vegetation and mechanical erosion control and drainage measures shall be installed as soon as practical in the development.
- (8) 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 will be mechanically retarded.
- (9) Sediment in the runoff water shall be trapped until the disturbed area is stabilized by the use of appropriate best management practices shown on the erosion and sediment control plan or as required by the Township Engineer or Bucks County Conservation District.

C. Responsibility.

- (1) Whenever sedimentation is caused by stripping vegetation, regrading, or other development, it shall be the responsibility of the person, corporation, or other entity causing such sedimentation to remove it from all adjoining surfaces, drainage systems, and watercourses and to repair any damage at their expense as quickly as possible.

D. Installation and design standards.

- (1) The installation and design of any of the required erosion and sedimentation control measures listed below shall be in accordance with standards and specifications outlined in the most recent versions of the *PaDEP's Erosion and Sediment Pollution Control Manual* and the *Pennsylvania Stormwater Best Management Practices Manual*.
- (2) Detailed designs for all the appurtenances related to temporary basins must be supplied, including, but not limited to:
 - a. Debris basin.
 - b. Grade stabilization structure.
 - c. Grassed waterway or outlet.
 - d. Mulching.
 - e. Sodding.
 - f. Temporary cover on critical areas.
 - g. Temporary diversion (urban).
 - h. Permanent diversion (urban).
 - i. Permanent grass and legume cover on critical areas with prepared seedbed.
 - j. Permanent grass and legume cover on critical areas with unprepared seedbed.
 - k. Riser pipes.
 - l. Outlet pipes.
 - m. Anti-seep collars.
 - n. Placement of pipes.
 - o. Heights and embankments.

- p. Emergency spillway.
- (3) Design of the temporary basins can be combined with that for the permanent basins if the developer desires.
- (4) The use of inlet riser boxes to prevent sediment from entering the storm drainage system is strongly recommended.
- (5) Diversion berms and swales are the recommended erosion-control devices for use in lieu of storm drainage pipes. All diversions and swales must be designed to carry a minimum 50-year peak flow rate, unless otherwise specified in preceding sections, using precipitation data for Doylestown, Pennsylvania, from the Precipitation-Frequency Atlas of the United States, Atlas 14, Volume 2, latest version, United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service, Hydrometeorological Design Studies Center, Silver Spring, Maryland. This data is available at <http://hdsc.nws.noaa.gov/hdsc/pfds/>.
- (6) Additional controls and requirements will be required during construction if conditions so indicate, in the judgment of the Township Engineer or Bucks County Conservation District.
- E. Compliance with regulations and procedures.
 - (1) Approved final plans for minimizing erosion and sedimentation will be incorporated into the Development Agreement and financial security requirements as specified in Appendix A of this Ordinance.
 - (2) The approval of plans and specifications for the control of erosion and sedimentation shall be concurrent with the approval of the final plans of a subdivision or land development and become a part thereof.
 - (3) At the time that a building permit is applied for, a review shall be conducted by the Township Engineer to ensure conformance with the erosion and sedimentation control plan as approved. During construction, the Township Engineer shall inspect the development site and enforce compliance with the approved plan. Further consultative technical assistance will be furnished, if necessary, by the Bucks County Conservation District.
 - (4) In the event that the developer commences to clear and grade before recording the approved plans, the Township may issue a stop work order requiring the developer to cease and desist all clearing and grubbing operations immediately. The Township Manager may require restoration to preexisting conditions.

§ 305-324. Bridges and culverts.

- A. Bridges and culverts shall be designed to meet current PennDOT Publication 408 Specifications, as amended, to support expected loads and to carry expected flows. They shall be constructed to the full width of the street line or to an adequate dimension to accommodate special grade conditions.
- B. Approval of the PaDEP, Dam Safety Division, is required when the area drained upstream of the point under consideration exceeds an area of 100 acres.

§ 305-325. Community facilities and required open space.

- A. In reviewing subdivision and land development plans, the Township Planning Commission and Board of Supervisors will consider the adequacy of existing or proposed recreation areas to serve the additional dwellings proposed by the subdivision or land development. If it is determined that recreation areas as represented on a subdivision or land development plan is not suitable with regard to the size, shape, location, access or provision for maintenance, the Township may, at the discretion of the Board of Supervisors, require that open space be provided through payment of a fee in lieu of land and/or facilities, in accordance with § 370-505.H. of the zoning ordinance.
- B. Areas provided or reserved for such recreation shall be adequate to provide for buildings, sites, landscaping, and off-street parking as appropriate to the use proposed. Where a proposed park,

playground, school, or other public use shown in the Township's Comprehensive Plan, Township Parks, Recreation, and Open Space Plan or on the Township's official map, when adopted, is located in whole or in part in a subdivision or land development, the Board of Supervisors may require the dedication or reservation of such area within the subdivision or land development in those cases in which the Board of Supervisors deem such requirements to be necessary.

- C. Upon consideration of the particular type of development proposed, the Board of Supervisors may require the dedication or reservation of additional areas or sites of a character, extent, and location suitable to the needs created by such development for schools, parks, and other neighborhood purposes, in accordance with § 370-505.H. of the zoning ordinance.
- D. Where a proposed park, playground, or other public use is indicated on a proposed subdivision or land development plan, the Park and Recreation Board shall review the plan and submit recommendations to the Township Planning Commission and the Board of Supervisors.
- E. The following standards shall apply to the provisions of recreation areas:
 - (1) Areas set aside for recreational purposes shall be of adequate size and configuration to accommodate the intended use. They should be located to serve all the residents, and in large developments more than one area may be required to serve the residents in close proximity to their dwellings. Access should be provided from a public street and shall be designed to efficiently serve all parts of the subdivision or land development.
 - (2) Unless otherwise permitted as a fee in lieu and in accordance with the Township Fee Schedule, suitable open areas shall be required for recreation in addition to required open space. Standards to be used by the Board of Supervisors in testing the adequacy of space provided shall be consistent with the provisions in § 370-505. of the zoning ordinance.
 - (3) Recreation areas shall be designed pursuant to the Accessibility Guidelines for Buildings and Facilities, United States Architectural and Transportation Barriers Compliance Board, as amended, promulgated by the Americans with Disabilities Act, as amended. At least one side of the recreation area shall abut a street for a minimum of 50 feet for the access of emergency and maintenance vehicles.

§ 305-326. Residential developments.

- A. Any residential amenity proposed in a final plan such as a swimming pool, clubhouse, or trail shall be constructed in accordance with designs on the final plan. These amenities shall be bonded, and funds held in escrow until completion. They shall be constructed before the first 10 percent of the dwelling units have been constructed.
- B. Bonding procedures shall be required before final approval of the land development plan and shall guarantee the improvements by the developer of streets, sidewalks, curbs, streetlighting, street trees and other landscaping and other landscaping, drainage facilities, utilities, amenities, and other facilities that the Board of Supervisors deem necessary.
- C. Design requirements for parking structures will be in accordance with § 305-328.G.

§ 305-327. Multifamily developments.

- A. Preliminary approval of the land development plans must be obtained for the entire proposed multifamily development. Final approval may be obtained section by section, but such development sections shall be specified on the preliminary plan with pertinent statistics such as area and density regulations for each phase and must be numbered in the proposed order that they are to be developed. Such order of development must be adhered to, and if changes are required, plans must be refiled, reviewed, and approved. Refiled plans will be subject to any changes in density requirements made by the Board of Supervisors since the original filing date.
- B. Development agreements including financial security shall be required before final approval of the

land development plans, and shall guaranty the improvements by the developer of streets, sidewalks, curbs, streetlighting, street trees and other landscaping, drainage facilities, utilities, and other facilities that the Board of Supervisors may deem necessary.

C. Arrangement of buildings and facilities.

- (1) All of the elements of the site plan shall be harmoniously and efficiently organized in relation to topography, the size and shape of the plot, the character of the adjoining property and the type and size of the buildings, in order to produce a livable and economical land use pattern.
- (2) Arrangement of buildings shall be in favorable relation to the natural topography, existing desirable trees, views within and beyond the site, and exposure to the sun and other buildings on the site.

D. Access and circulation.

- (1) Access to the dwellings and circulation between buildings and other important project facilities for vehicular and pedestrian traffic shall be comfortable and convenient for the occupants.
- (2) Access and circulation for firefighting equipment, furniture moving vans, fuel trucks, garbage collection, deliveries, and snow removal shall be planned for safe, efficient, and convenient operation.
- (3) Walking distance from the main entrance of a building to a street, driveway, or parking area shall be less than 100 feet. Any exception to this standard should be reasonably justified by compensating advantages, such as desirable views and site preservation through adaptation to topography. In no case shall the distance exceed 250 feet.

E. Yards. Yards shall ensure adequate privacy, desirable outlook, adequate natural light and ventilation, convenient access to and around the dwellings, and other essential uses.

F. Grading.

- (1) Grading shall be designed for buildings, lawns, paved areas, and other facilities, in accordance with ADA and Federal Fair Housing Amendments (FHAA) requirements, to ensure adequate surface drainage, safe and convenient access to and around the buildings, and conservation of desirable existing vegetation and natural ground forms.
- (2) Grading around buildings shall be designed to be in harmony with natural topography and to minimize earthwork.

G. Streets.

- (1) Streets shall be provided on the site where necessary to furnish principal traffic routes for convenient access to the living units and other important facilities on the property.
- (2) Streets proposed to be dedicated for public use and maintenance shall conform to § 305-304. of this article and PennDOT Publication 408 Specifications, as amended.

H. Driveways. Driveways shall be provided on the site where necessary for convenient access to the living units, garage, compounds, parking areas, service entrances of buildings, collection of refuse, and all other necessary services. Driveways shall conform to those standards of § 305-311. of this article.

I. Parking areas.

- (1) Paved parking areas shall be provided to meet the needs of the residents and their guests without interference to or from normal access and circulation traffic.
- (2) Parking areas shall conform to area requirements of the zoning ordinance and § 305-312. herein.

J. Sidewalks and pedestrian pathways.

- (1) Street sidewalks and/or internal development pedestrian pathways shall be provided for convenience and safe access to all living units from streets, driveways, parking areas, or garages and for convenient circulation and access to all project facilities.
- (2) Width, alignment, and gradient of walks shall provide safety, convenience, and appearance for pedestrian traffic. Small jogs in the alignment shall be avoided.

- (3) The alignment and gradient of walks shall be designed to prevent the passage of concentrated surface water on or across the walk and to prevent the pocketing of surface water by walks.
- (4) Trails shall be constructed in accordance with § 305-314. of this Ordinance and PennDOT, Publication 408 Specifications, as amended.
- K. Refuse collection.
 - (1) Outdoor collection stations shall be provided for garbage and trash removal when individual collection or indoor storage is not provided.
 - (2) Collection stations shall be located to avoid being offensive, shall be convenient for both collectors and tenants, and shall be screened and landscaped.
- L. Planting. The appeal and character of the site shall be preserved and enhanced by retaining and protecting existing trees and other site features; and additional new plant material shall be added to maintain privacy, shade, and beauty of buildings and grounds, and to screen out objectionable features in accordance with § 305-329. of this Ordinance.

§ 305-328. Nonresidential developments.

- A. Lotting of individual lots for commercial purposes shall be avoided in favor of a comprehensive design under the zoning ordinance.
- B. Additional width of streets adjacent to areas proposed for nonresidential use may be required as deemed necessary by the Board of Supervisors to ensure the free flow of through traffic from vehicles entering or leaving parking areas. Costs incurred from such improvements shall be the responsibility of the developer.
- C. When adjacent lots proposed for nonresidential uses front on a collector or arterial street, the owner may be required to provide a service road for ingress and egress, or in lieu thereof, the owner may be required to provide an area adjacent to the proposed lots for off-street parking purposes.
- D. Adjacent residential areas shall be protected from potential nuisance of the proposed nonresidential developments, including the provision of extra depths in parcels adjacent to existing or potential residential developments and provisions for a permanently landscaped buffer strip, as required in the zoning ordinance, in nonresidential districts.
- E. Loading and delivery areas or streets carrying nonresidential traffic shall not be extended to the boundaries of the adjacent existing or potential residential areas, or connected to streets intended for predominately residential traffic.
- F. Parking areas and drives shall be screened from adjacent residential or institutional areas in accordance with the provisions of Chapter 370, Zoning, as amended and the landscape requirements specified herein. Landscape requirements for parking facilities shall be in accordance with the provisions of § 305-329 herein.
- G. Design requirements for parking structures are as follows:
 - (1) All area, design, and parking requirements shall conform to the provisions of § 370-305.E.(33) and Article VI of the zoning ordinance and applicable provisions from § 305-312., as determined by the Township Engineer.
 - (2) Ramps for the movement of vehicles between parking levels shall be designed to provide optimal movement of vehicular traffic within the parking structure.
 - (3) Parking structures shall be so designed to minimize blank concrete facades through the use of innovative architectural detail. The design of the exterior of the parking structure shall be compatible with the exterior design of the principal structure to the extent that the parking facility is clearly identified with the principal structure.
 - (4) Any parking structure or group of parking structures containing 300 parking spaces or more in total shall provide a grade-separated pedestrian walkway connecting the parking facility with the principal structure or structures.

- (5) Parking structures shall be landscaped in accordance with and to the same extent as the overall landscape plan.
- (6) Within an enclosed parking structure or deck, the following aisle widths and parking space angles shall apply:

Table 8. Enclosed Parking Structure or Deck Dimensions.

Angle of Parking Spaces (degrees)	Minimum Aisle Width (feet)
40 to 60	18
60 to 75	22
90	24*

*May be reduced to 22 feet if the support columns for the deck are arranged opposite each other.

- (7) Parking spaces shall be delineated by a double-striped line, closed at the aisle end.
- H. All area, design, and parking requirements shall conform to the provisions of Article VI of the zoning ordinance.

§ 305-329. Landscaping.

- A. Intent. The intent of this section is to protect and promote the public health, safety and general welfare and overall appearance of the Township by establishing minimum landscape standards and criteria for all subdivisions and land developments. The environmental benefits to proper landscaping will limit the removal of trees and associated tree canopy on property within the Township; establish minimum standards to ensure the replacement of trees and tree canopy removed from property within the Township; reduce stormwater runoff; reduce water pollution; reduce effects of wind and air turbulence; reduce visual pollution; provide for noise abatement; reduce soil erosion; reduce levels of carbon dioxide and return oxygen to the atmosphere; increase groundwater supply; provide shade; provide habitat for wildlife; create a diverse mix of plant species; conserve and protect property values and otherwise facilitate the creation of a convenient, attractive and harmonious community; and generally preserve and safeguard the ecological, economic and aesthetic environment.
- B. Application.
 - (1) The provisions of this section are not intended to restrict existing residential owners from removing trees from their property or to restrict the clearing of land for agricultural purposes, in accordance with the zoning ordinance.
- C. Landscape plan submission requirements. See § 305-505.E.(8) for preliminary plan submission requirements and § 305-506.E.(8) for final plan submission requirements.
- D. Existing vegetation and natural features.
 - (1) For the purposes of this section, the term "natural features" shall mean such vegetation, soils, surface streams and ponds, plantings, trees, and topography which exist on the site proposed to be developed prior to any development activity. These requirements are in addition to § 305-331..
 - (2) In cases where existing natural features (to remain) duplicate the planting requirements of § 305-329.F., any or all of such requirements may be waived by the Township Supervisors.
 - (3) The Township Engineer may require the developer to verify the presence of existing trees on a site through use of an aerial photograph taken not more than one year prior to the submission of the landscape plan or through a field survey.
 - (4) During the construction of any site, all trees to be retained within 15 feet or the drip line, whichever is greater, of a construction area, including disturbance for roads and parking, shall be

protected by 4-foot-high plastic webbed construction fencing, snow fencing or equivalent staked every 10 feet to ensure that there is no encroachment within the area of the tree dripline by changing grade, trenching, stockpiling of building materials or topsoil, or the compaction of the soil and roots by any motor vehicle. The location of temporary tree protection fencing shall be indicated on the grading or erosion and sedimentation control plans for the application, and the installation of fencing shall be specifically noted in the construction sequence.

- (5) Trees that are proposed for removal and are located within 15 feet of the dripline of trees to remain shall be cut flush to grade and then ground to a minimum of 12 inches below grade. Damage to roots of trees to remain shall be avoided.
- (6) Protection of topsoil.
 - a. Each lot shall have at least 6 inches of topsoil cover, after settlement, over all of the site's exposed earth surfaces. More than 6 inches may be required if the Township Engineer determines that a greater amount is needed for the long-term viability of certain plantings.
 - b. Topsoil moved and stockpiled by grading operations shall be redistributed and stabilized following the completion of a project or project phase. All exposed earth surfaces shall be stabilized within the time frame specified by 25 Pa. Code Chapter 102, Erosion and Sediment Control, as amended.
 - c. All disturbed topsoil on site is to be redistributed on site in areas not covered by impervious surfaces. No removal of topsoil from a site is allowed unless approved by the Warrington Township Engineer.
- (7) Subject to the approval of the Township Engineer, existing vegetation may count toward tree planting and buffer requirements, as required in §§§ 329.E.(6)(b), 329.E.(6)(f) and 329.E.(10), in lieu of new plantings, provided that the existing vegetation is used in conjunction with new plantings to meet the tree planting and buffer requirements.
 - a. A tree shall be deemed to be preserved when the plan provides for it to be maintained in such manner that the entire tree protection zone shall be maintained at the existing grade level in either vegetative landscape material or pervious surface cover. No grading shall occur in a tree protection zone.
 - b. Trees designated for approval as preserved trees shall be preserved in accordance with ANSI A300 "American National Standard for Tree Care Operations – Tree, Shrub, and Other Woody Plant Management – Standard Practices (Management of Trees and Shrubs During Site Planning, Site Development, and Construction)". At the direction of the Township Engineer, existing trees that have not been adequately protected during construction or that die within the guarantee period are to be removed and replaced using the appropriate quantities for the diameter of the removed trees.
 - c. In determining trees to be protected, consideration shall be given to maintaining a clear zone between new buildings, site improvements and preserved forest/woodland edges. New buildings or site improvements shall not be constructed in the tree protection zone.
- (8) Removal and replacement of existing trees. When trees are approved to be removed from a site, the following replacement provisions shall apply:
 - a. If greater than the allowable percentages of tree removal noted herein (but in no case shall removal of forests exceed those allowed in § 370-503 of the zoning ordinance) are removed or destroyed because of street alignment, building placement, parking area location, grading or otherwise, then existing trees removed or destroyed shall be replaced in accordance with the following Table 9:

Table 9. Tree Replacement Standards.

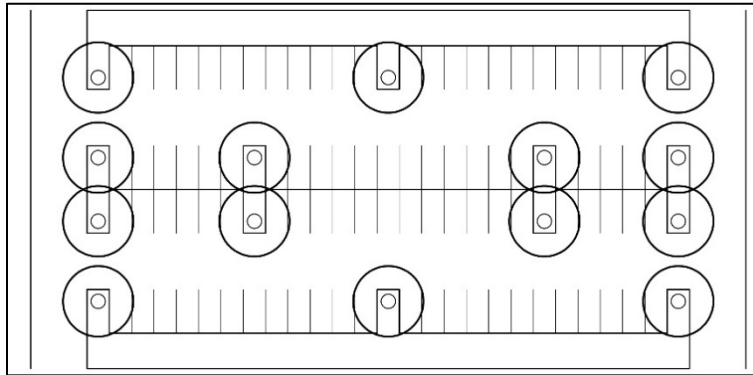
Tree Size Removed (inches)	Number of 2.5-inch Replacements Required
Less than 3	0
3 to 5	1
6 to 23	5
24 to 36	10
37 or greater	Inch for Inch

- i. The replacement trees shall be selected from the Preapproved Plant Material List.
 - ii. Such new trees shall be planted in addition to the trees and/or shrubs required under § 305-329.E. except that such replacement trees may be used in revegetation of riparian areas. If there is insufficient space to plant all of the required trees, the developer shall plant all remaining trees on lands owned by the Township as directed by the Township Manager or their designee. At the sole discretion of the Board of Supervisors, a fee in lieu of such plantings may be accepted. The fee shall be the full cost that would otherwise be incurred by the owner for the furnishing and installation of the plantings and shall be used for landscaping Township-owned land as directed by the Board of Supervisors.
 - iii. The replacement trees shall be shown on the landscape plan with a schedule of trees to be removed and trees to be used for replacement as defined in § 305-505.E.(8) or on the landscape plan with a separate plant schedule for replacement trees or shown as trees to be contributed to the Township. A maximum of 50 percent of the required trees may be replaced as evergreen trees and/or ornamental trees at a ratio of two evergreen or ornamental trees per each replacement. A maximum of 20 percent of the required trees may be replaced as shrubs at a ratio of 10 shrubs per required tree. Refer to Appendix F for sizes and types of trees and shrubs recommended.
- E. Landscape design requirements.
- (1) The location, dimensions, and spacing of required plantings should be adequate for their proper growth and maintenance, considering the sizes of such plantings at maturity and their present and future environmental requirements, such as wind, soil, moisture, and sunlight.
 - (2) Planting guidelines.
 - a. Plantings shall be selected and located where they will not contribute to conditions hazardous to the public's health, safety, and welfare. Such locations include, but shall not be limited to: public street lines; underground and aboveground utilities; and sight triangle areas required for unobstructed views at street intersections as required per pertinent sections of this Ordinance and the zoning ordinance. In addition, plantings at the ends of parking lot drive aisles must be designed to stay below 2 vertical feet to maximize visibility for motorists and pedestrians and minimize screening due to high vegetation.
 - b. Trees and shrubs shall be located so as not to interfere with the installation and maintenance of sidewalks and utilities. Trees shall be planted 15 feet from overhead utilities and 6 feet from underground utilities.
 - (3) All plant materials used shall meet the minimum standards for health, form, and root condition as outlined in the American Standard for Nursery Stock, ANSI Z60.1, latest edition and, at the time of planting, meet minimum size requirements as stated in § 305-329.F. General planting requirements.

- (4) Caliper. For measuring trees for buffering or landscaping purposes, caliper measurements shall be taken at a point on the trunk 6 inches above the natural ground line.
- (5) Street trees.
- a. Street trees shall be planted for any subdivision or land development where suitable street trees do not exist, as part of the design and construction of:
 - i. New streets.
 - ii. New sidewalks or pedestrian ways.
 - iii. Existing streets, sidewalks, pedestrian ways, highways, bicycle trails or pathways when they abut or lie within the subdivision or land development.
 - iv. Access driveways to residential developments having more than two dwelling units.
 - v. Renovations to or widening of existing streets or sidewalks.
 - b. Spacing. Street trees shall be planted no closer than 40 feet on center nor further than 50 feet on center for each side of the street, except along arterial streets and highways where, with the approval of the Board of Supervisors, they may be up to 100 feet on center; or an equivalent number may be planted in an informal arrangement.
 - c. Setback. Street trees shall be planted a minimum distance of 2 feet outside and parallel to the street line, unless otherwise approved by the Township Engineer. Trees located at intersections shall respect the sight triangle as defined in this Ordinance and the zoning ordinance. Adequate separation from overhead and underground utilities shall be provided.
 - d. Street trees shall not be located within the street line. Existing trees located within the street line may count toward the street tree requirement provided the tree is over 4 inches in caliper.
 - e. Street trees shall have a clear trunk from ground level to 7 feet above ground level, with full branching structure. All hanging branches shall be trimmed to maintain a minimum height of 7 feet above the ground surface at all times.
- (6) Buffers and perimeter areas.
- a. Consistent with the intent of this section and § 370-806., Screening and buffering and planting strip requirements, of the zoning ordinance, the entire perimeter of a property being developed shall have a buffer which includes trees, shrubs, and other landscape improvements necessary to screen the visual impact the development will have on the property, on adjoining properties, and on the Township.
 - b. Softening buffer. Along the sides and rear of property lines of all subdivisions and land developments where existing vegetation is not sufficient, at the discretion of the Township Engineer, and a screen buffer is not required, a permanent softening buffer shall be planted. The following landscape requirements must be adhered to:
 - i. Softening buffer plant materials shall include a combination of trees and shrubs in free-form arrangement. The buffer shall consist of a minimum of four shade trees for each 100 linear feet and eight shrubs for each 100 linear feet of property line. Informal groupings that reflect the natural character of the site are encouraged. Up to 50 percent of shade trees may be substituted with ornamental or evergreen trees or shrubs at a rate of two ornamental, two evergreen trees, or 10 shrubs for every shade tree.
 - c. The buffer planting area along the property lines shall be used for no purpose other than planting of trees, shrubs, and lawn. It may include a wall or fence. Any wall or fence shall be compatible and constructed in such a manner that it will not conflict with the character of the abutting district.
 - d. The buffer plantings shall be aligned along the property lines or street line boundaries but may be sited on any position of the property if recommended by the Township Planning Commission and permitted by the Board of Supervisors. An innovative and free-form

- arrangement of plant materials is encouraged.
- e. Within the buffer area, no proposed slopes shall be steeper than four horizontal to one vertical (25 percent), unless these areas previously existed at a steeper slope than 4:1 and no new grading is proposed within such areas. If the area of the slope is intended to be mowed, the maximum slope shall be no steeper than 3:1.
 - f. Screen buffer. Where under applicable sections of the zoning ordinance, screen buffers are required for the entire length of all common boundaries abutting noncomplementary districts and uses, the following landscape requirements shall be adhered to:
 - i. Trees and shrubs used for screening shall be composed of at least 75 percent evergreen and shall be arranged to provide an immediate visual screen of 50 percent. Evergreen trees shall be at least 8 feet in height at the time of planting. The balance of the plantings may be deciduous trees and shrubs.
 - ii. Walls, ornamental structures, fences and berms or a combination of these may be used in combination with appropriate plant material, subject to the specific land use areas involved and as approved by the Township Board of Supervisors.
 - iii. Screening shall consist of evergreen trees in double rows, staggered 10 feet to 20 feet on center. The spacing will depend on the type of tree used. Evergreen or deciduous shrubs shall supplement the evergreen trees at a minimum rate of 20 per 100 feet.
 - iv. The planting screen shall be continuous except at points of vehicular or pedestrian access.
 - g. The establishment of large monoculture evergreen buffers is discouraged. Where a buffer planting shall include 40 or more evergreen trees, no more than one-third of these evergreen trees shall be a single species of tree. The use of *Pinus strobus*, white pine, in buffer plantings of less than 40 but more than 15 required evergreens shall be limited to one-third *Pinus strobus* species. Screen buffers of less than 15 required evergreens shall be made up of species other than *Pinus strobus*.
- (7) Off-street parking area. Parking areas shall be screened from adjacent residential or institutional areas in accordance with the provisions in the Zoning Ordinance, as amended and the landscape requirements specified herein. The following standards shall apply to all off-street parking facilities with a capacity of five or more vehicles:
- a. The perimeters of off-street parking lots in all districts shall be buffered in accordance with the above regulations for softening buffers. This shall include the introduction of landscape elements or softscape separation between buildings and parking as well as between parking areas and public streets. Raised perimeter planting beds shall be provided around all parking areas except where the parking area is adjacent to a building. The planting bed shall be at least 15 feet wide. In addition, any parking closer than 50 feet to a public street line or residential district shall have a continuous row of shrubs, fence, wall, berm, or a combination of these to a minimum height of 3 feet between the street or residential district and parking area.
 - b. All parking areas shall have at least one shade/canopy tree for every six parking spaces in single rows and one shade/canopy tree for every 12 parking spaces in double-loaded rows of parking spaces. Trees shall be planted to provide shade for the parked automobiles.
 - c. The surface treatment of planting beds, planting islands and perimeter planting beds shall be grass, ground cover, low maintenance shrubs or a combination of those. If grass is used, mower access must be provided.
 - d. Not more than 12 parking spaces shall be placed in a continuous row without an intervening raised planting island of at least 10 feet in width and the length of the parking stall. The raised planting beds shall be offset on alternating side of parking rows.

Figure 9. Alternating Raised Beds



- e. There shall be a minimum of one shade tree per 12 spaces, and all planting beds within a parking lot shall be surfaced with lawn, ground cover or low-growing shrubs. Proposed trees, shrubs and ground cover can be placed around the parking area perimeter or within interior islands or at locations acceptable to the Township Engineer.
 - f. Planted islands shall be placed at the end of each row of parking spaces which begins or terminates at an internal circulation aisle. Raised planting islands shall be located at each end of a double loaded parking row and shall be planted with two shade trees per island. End islands adjacent to primary traffic circulation routes shall have only low-growing shrubs, ground cover or lawn so as to not impede adequate sight distance.
 - g. For any land use where the total number of parking spaces in one parking lot exceeds 100 stalls, the parking area shall be divided by continuous center islands perpendicular to the spaces every 130 feet, assuming four rows of parking and two aisles. These divider islands shall be a minimum of 10 feet wide.
- (8) Drainage area and detention/retention basin landscaping.
- a. Whenever a detention or retention basin is provided, such basin shall conform to the requirements set forth in the applicable Zoning, Stormwater Management and Subdivision and Land Development Ordinances and the landscaping requirements as follows.
 - b. The basin shall be so designed that the plantings in and adjacent to it shall not have a negative effect on the hydrological function of the basin. Trees shall be kept off of permanent stormwater control basin berms in accordance with PaDEP requirements.
 - c. All continuously flowing natural watercourses shall be maintained in their natural state, except that removal of debris and remediation of severe erosion shall be required.
 - d. Intermittent streams shall be maintained at their existing alignments and gradients, except that they may be improved by minor regrading, unless otherwise restricted by state, federal or Warrington Township zoning regulations, and shall either be planted and stabilized in vegetative cover or provided with erosion control improvements as approved by the Township Engineer.
 - e. Drainageways and detention and retention basins shall be aesthetically pleasing and compatible with the adjacent land use. Creative grading and innovative basin forms are encouraged. The use of best management practices as detailed in the Pennsylvania Stormwater Best Management Practices Manual, latest edition, is also encouraged. Where basins adjoin existing forest/woodlands, it is recommended that plantings be selected to blend with the natural surroundings.
 - f. Basin floors.

- i. Basins shall be planted and landscaped with native plants.
 - a) Vegetative ground cover other than lawn are encouraged where appropriate. Where lawn is not specified, plans shall include a narrative and schedule for short- and long-term maintenance to include cutting/harvesting, reseeding, fertilizing, selected weed removal and the party responsible for maintenance. Trees are encouraged wherever possible to promote cooling of water within the basin.
 - b) Floors intended to be dry most of the year shall be landscaped to provide naturalized ground cover in one or a combination of the following:
 - 1) Seeded in low-maintenance wildflowers and meadow grasses.
 - 2) Wildflower sod.
 - 3) All-season ground cover.
 - 4) Appropriate trees and shrubs with no impact to hydrological function of the basin.
 - c) Basin floors, portions of a floor, or channels that are wet most of the year shall be landscaped in one or a combination of the following:
 - 1) Wet habitat grasses and ground covers.
 - 2) Seeded in wildflower mix for wet areas.
 - 3) Appropriate trees and shrubs with no impact to hydrological function of the basin.
 - g. Basin perimeter plantings.
 - i. There shall be a minimum of one shade tree and two shrubs for each 30 linear feet of basin perimeter. To promote diversity, up to 50 percent of the shade trees may be substituted with an option of two flowering trees or evergreen trees, or 10 shrubs for every shade tree.
 - ii. This requirement is in addition to required softening buffers where basins are against property edges.
 - iii. This requirement may be waived along portions of a basin where screen buffer is required and where the owner can demonstrate that such added buffer will not produce added screening benefit, provided that the owner agrees to provide equivalent plantings at other areas in the Township as directed by the Board of Supervisors.
 - iv. Sufficient area shall be provided between stormwater basins and property lines and buildings to permit the satisfactory spacing and placement of required plant material.
- (9) Pennsylvania Best Management Practices (PA BMP) landscaping requirements.
- a. PA BMP structures including rain gardens, infiltration trenches, vegetated swales, and other surface PA BMP structures not classified as a retention/detention basin shall be landscaped. The plantings shall be in addition to all other landscape requirements. There shall be a minimum 10 (1.5 inches DBH) shade tree equivalent per 10,000 square feet. Landscape plan material equivalents may be used in accordance with Table 10, Landscape Equivalencies, to promote flexible solutions that best meet the plant material needs as outlined in the Pennsylvania Stormwater Best Management Practices Manual.
 - b. Landscape equivalencies. A minimum of 50 percent of landscape equivalencies is required. Additional landscape equivalencies may be provided for certain requirements where specified according to applied rates of Table 10, Landscape Equivalencies. Equivalencies are intended to provide flexible solutions to meet the intent of certain requirements and are subject to the approval of the Township Engineer.

Table 10. Landscape Equivalencies.

Landscape Equivalencies		
Quantity	Size	Type
1	1.5 inches dbh	Shade tree
2	1.5 inches dbh	Ornamental trees
2	4 feet to 5 feet in height	Evergreen trees
5	18 inches in height	Shrub

(10) Site element screening.

- a. Service, loading, outdoor nonresidential/commercial dumpster and recycling containers, outdoor displays, material storage, transformers and mechanical equipment, and utility delivery areas shall be screened from all residential districts and uses, public streets, parking lots and pedestrian walkways. Screening shall include the use of fences, walls, berms, evergreen plant material, or a combination of these.
- b. Fences and walls shall be designed to be compatible in terms of materials and overall aesthetics with the surrounding architecture and physical features.
- c. Screening shall be installed and maintained at a height which effectively blocks the view but shall not be less than 6 feet unless approved by the Township Board of Supervisors. Trash disposal areas shall be screened on three sides when possible.

(11) Individual lot landscaping requirements. In addition to the landscape requirements as defined above, each individual nonresidential building lot/use shall provide the following:

- a. Each building lot/use in nonresidential districts, including, but not limited to, institutional, commercial, industrial, office and business, shall provide one deciduous or evergreen tree as listed in § 305-327.F. per 5,000 square feet of gross floor area of building. Up to 50 percent of required shade/evergreen trees may be substituted with ornamental trees or shrubs at a rate of two ornamental trees or 10 shrubs for every shade tree.

(12) Rare, threatened, and endangered plants. The following trees, shrubs and plants shall be granted priority for retention and protection and shall be left in an undisturbed condition unless an evaluation report by an ISA certified arborist or registered landscape architect acceptable to the Township concludes that tree, shrub or plant is beyond recovery or the owner has demonstrated, to the satisfaction of the Township Engineer, that reasonable efforts have been made to protect them and the plan cannot be reasonably altered:

- a. Trees, shrubs, or plants determined to be rare, threatened or endangered under the current *Federal Endangered Species Act of 1973* in 16 U.S.C. §§ 1531 through 1544 and in 50 CFR Part 17 or placed upon the Pennsylvania Threatened Species List or the Pennsylvania Endangered Species List (34 Pa.C.S.A. § 2101 et seq.).
- b. Trees that are part of an historic site, associated with an historic structure, or have been designated as a national, state, or county champion tree.
- c. Any tree having a caliper of 24 inches or more that is designated as a national, state, or county champion tree of a particular species.

F. General planting requirements.

- (1) Preapproved plant materials are listed in § 305-329.H.. Plant material shall be selected for its form, hardiness, texture, color, pattern of growth and suitability to local conditions.
- (2) Plants that are determined to be injurious to public health, crops, livestock, agricultural land, or other property as those listed on the Pennsylvania Noxious Weed Control List are prohibited in any plantings within the Township. Refer to the current Noxious Weed Control Law, Act of 2017,

P.L. 774, No. 46, as amended from time to time.

- (3) In order to promote diverse plant communities within the Township and maintain viable vegetative populations, it is recommended that a mix and variety of trees, shrubs and ground cover be used in each land development, subdivision, and planting plan.
 - a. Where a development or subdivision requires:
 - i. One to 10 trees: two different species of trees are required.
 - ii. 10 or more trees: a minimum of three different species of trees are required.
 - b. Plant species are to be spread and mixed throughout the site.
- (4) Proposed plant sizes.
 - a. Replacement, street, shade, or canopy trees used in buffer and perimeter, off-street parking, basin, and/or individual lot landscaping situations shall be no less than two-and-a-half-inch caliper when planted.
 - b. Evergreen buffer, site element screening, and individual lot landscaping evergreen trees shall be no less than 8 feet when planted.
 - c. Ornamental trees for all landscape requirements shall be no less than one-and-a-half to two-inch caliper (or 6-foot height in the case of multi-stem trees) when planted.
 - d. Evergreen and deciduous shrubs used in buffer and perimeter, site element screening, off-street parking, basin, and/or individual lot landscaping situations shall be no less than 18 inches to 24 inches when planted.
 - e. Smaller evergreen and deciduous shrubs used in parking lot islands or instances where plant material does not grow to the larger specified sizes shall be no less than 12 inches to 18 inches when planted.
 - f. Perennials, ferns, grasses, ground covers, and vines shall be no less than a two-quart container when planted.
- (5) Use of native species. The percentages of native species in Table 11. shall be used with each plant type (shade tree, ornamental tree, shrub, etc.) in each of the required planting categories and as otherwise noted herein.

Table 11. Native Species Requirements

Planting Requirement	Native Species Required (%)
Street trees	80
Buffer and perimeter areas	80
Off-street parking	80
Drainage area and detention/retention basin	100
Site element screening	50
Individual lot landscaping	80
Revegetation of riparian areas	100
Replacement trees	100

- (6) It is the responsibility of the property owner to replant, within 90 days of receiving notice from the Township, any required plantings observed by the Township to have been removed in violation of the approved landscape plan. This provision shall not be construed to prevent the removal and replacement of any required plantings deemed to be dead, diseased, or hazardous by a landscaping professional, upon authorization of the Township Zoning Officer or their designee.

G. Maintenance Bond.

- (1) Any tree or shrub which dies, or is deemed, in the opinion of the Township Engineer, not to have

survived or grown in a manner uncharacteristic of its type shall be replaced. Substitutions for certain species of plants may be made only when approved by the Township Engineer.

- (2) The developer or landowner shall deposit with the Township a sum of money equal to the amount necessary to cover the cost of purchasing, planting, maintaining, and replacing all vegetative materials for a period of 18 months from the date the public improvements constructed as part of a subdivision or land development have been accepted in dedication by the Township.
 - (3) This condition may be satisfied through a land development agreement with sufficient and appropriate financial guarantees.
- H. Preapproved plant material list. The list of preapproved plant material is intended to offer a broad selection of available plant material suitable for the various required landscapes found in this Ordinance. Native plant species are required in accordance with § 305-329.F.(5).. All species of bamboo are prohibited to be planted in the Township. Refer to Appendix F for the list of preapproved plant material.
- (1) When species substitutions from the preapproved plant material list are proposed, the substitutions shall meet the requirements of § 305-329, shall be suitable for their proposed purpose and location, and shall not be identified by the Pennsylvania Department of Conservation and Natural Resources (DCNR) as invasive. Plants included on the DCNR "Watch List" as potentially invasive, and any associated varieties, hybrids, and cultivars of invasive species, shall not be permitted. Should plants listed in the preapproved plant material list be added to the DCNR's list of invasive plants after the adoption of this Ordinance, they shall not be permitted. Use of species known to be deer tolerant and salt tolerant should be considered where conditions warrant such.

§ 305-330. Tree protection zone.

- A. Prior to construction, the tree protection zone shall be delineated and meet the following requirements:
- (1) The tree protection zone that is delineated on the site prior to construction shall conform to the approved development plans.
 - (2) All trees scheduled to remain shall be marked. Where groups of trees exist, only the trees on the edge of the group need to be marked.
 - (3) A 48-inch-high snow fence, or other suitable fence as approved by the Township Engineer, shall be placed along the boundary of the tree protection zone.
 - (4) When the fencing has been installed, it shall be inspected and approved by the Township Engineer prior to commencing clearing and further construction. The fencing along the tree protection zone shall be maintained until all work and construction has been completed. Any damages to the protective fencing shall be replaced and repaired before further construction shall commence.
 - (5) Trees being removed shall not be felled, pushed, or pulled into a tree protection zone or into trees that are to be retained.
 - (6) Grade changes and excavations shall not encroach upon the tree protection zone.
 - (7) No toxic materials shall be stored within 100 feet of a tree protection zone, including petroleum based and/or derived products.
 - (8) The area within the tree protection zone shall not be built upon nor shall any materials be stored either temporarily or permanently. Vehicles and equipment shall not be parked in the tree protection zone.
 - (9) When tree stumps are located within 10 feet of the tree protection zone, the stumps shall be removed by means of a stump grinder to minimize the effect on surrounding root systems.
 - (10) Tree roots which must be severed shall be cut by a backhoe or similar equipment aligned radially to the tree. This method reduces the lateral movement of the roots during excavation, which if done by other methods could damage the intertwined roots of adjacent trees.

- (11) Within 4 hours of any severance of roots, all tree roots that have been exposed and/or damaged shall be trimmed cleanly and covered temporarily with moist peat moss, burlap or other biodegradable material to keep them from drying out until permanent cover can be installed.
 - (12) Any root cutting, pruning, or other tree disturbance shall be conducted or overseen by a certified ISA arborist.
- B. Protection from grade change.
- (1) When the original grade cannot be retained at the tree protection zone line, a retaining wall shall be constructed outside the tree protection zone.
 - (2) The retaining wall shall be designed to comply with the Pennsylvania Uniform Construction Code.
 - (3) To ensure the survival of trees, the following methods shall be used:
 - a. The top of the wall shall be 4 inches above the finished grade level.
 - b. The wall shall be constructed of large stones, brick, building tile, concrete blocks or treated wood beams not less than 6 inches by 6 inches. A means for drainage through the wall shall be provided so water will not accumulate on either side of the wall. Weep holes shall be required within any wall.
 - c. Any severed roots as a result of excavation shall be trimmed so that their edges are smooth and cut.
- C. Trees damaged during construction.
- (1) Tree trunks and exposed roots damaged during construction shall be protected from further damage. Damaged branches shall be pruned according to the International Society of Arboriculture standards. All cuts shall be made sufficiently close to the trunk or parent limb without cutting into the branch collar or leaving a protruding stub. All necessary pruning cuts must be made to prevent bark from being torn from the tree and to facilitate rapid healing.
 - (2) All trees which have been disturbed or have experienced damage to their roots or branches shall be fertilized. Trees shall be fertilized in early fall or midspring. Fertilizer grade shall have approximately three parts nitrogen to one-part phosphorus and potassium (ratio of 3:1:1:). Fertilizer shall be broadcast over the soil surface in an area twice the size of the tree protection zone at a rate of one pound nitrogen per 1,000 square feet.
- D. Protection from excavations. When there is no alternative but to locate an electrical or other small utility line within a tree protection zone, the Township Engineer shall determine the most desirable location for the line and the following guidelines shall be used:
- (1) Tunneling beneath the roots is preferred when possible.
 - (2) Where necessary, trenches should bypass the root area.
 - (3) Where trenches must be dug past the side of a tree, the following precautions shall be observed:
 - a. Trenches shall be no closer to the trunk than half the distance from the drip line.
 - b. Cut as few roots as possible.
 - c. If roots have to be cut, cut them as cleanly as possible.
 - d. Backfill the trench as soon as possible, avoiding soil compaction.

§ 305-331. Environmental performance standards.

A. General.

- (1) The design and development of all subdivisions and land developments shall preserve, whenever possible, natural features which will aid in improving conditions generally favorable to the health, safety, and welfare of the residents. These natural features include, but are not limited to, the natural terrain of the site, woodland area, streams, bodies of water and wetlands. More detailed standards to preserve specific natural features are set forth in the following subsections.
- (2) No change shall be made to land which is classified as an Environmentally Sensitive Area in accordance with the zoning ordinance, except as otherwise permitted and regulated in this

section and by federal and state regulations. No grading, excavating, removal or destruction of vegetation shall be approved unless there shall be a recommendation by the Planning Commission and determination by the Board of Supervisors that such activities are permissible.

- (3) Lands regulated as Resource Protection Areas in the zoning ordinance shall not be developed except by strict compliance with the zoning ordinance.
 - (4) Environmentally Sensitive Areas, other than resource protection areas, shall be preserved and protected in accordance with the standards and principles as established in this section.
 - (5) When regulated by this Ordinance or the zoning ordinance, all Environmentally Sensitive Areas shall be evaluated and documented with submission of an impact statement. The impact statement shall also evaluate and document the impact of the subdivision or land development on the environment (see Appendix E).
 - (6) In addition to the evaluation of Environmental Sensitive Areas on a subdivision or land development site, a Phase 1 Environmental Site Assessment (ESA) shall be performed to identify any potential contaminants that are present on the site that could impact the proposed use. The Phase 1 ESA shall be based upon the American Society for Testing and Materials standards for assessing and investigating a site for potential or existing environmental contamination liabilities. Based on the results of the Phase 1 ESA, and/or at the discretion of the Board of Supervisors, a Phase 2 ESA shall be performed on a proposed subdivision or land development site to further evaluate and provide recommendations for remediation of any potential contaminants identified in conjunction with the Phase 1 ESA. The Phase 2 ESA shall also be based upon the American Society for Testing and Materials standards for assessing and investigating a site for potential or existing environmental contamination liabilities.
- B. Performance standards. The following standards shall apply as minimum standards in protecting Environmentally Sensitive Areas other than resource protection areas, which are regulated by requirements set forth in the zoning ordinance:
- (1) Type II streams: shall not be disturbed except in accordance with strict compliance with state and federal regulations.
 - (2) Type II water bodies: shall not be disturbed except in accordance with strict compliance with federal and state regulations. Where alluvial soils exist, no disturbance of such soils is permitted. For every Type II water body, the area which shall be considered environmentally sensitive shall be the limit of the top of bank or the area within 5 feet of the maximum water surface elevation.
- C. Protection requirements.
- (1) An environmental impact study shall document and evaluate the limits of Environmentally Sensitive Areas. Each project shall be reviewed and considered on the basis of the impact on sensitive areas. Balancing the preservation of natural resources and development of Warrington Township in accordance with the zoning ordinance, shall be the Township's criteria for evaluating each project. Protection of resource-protected areas shall be regulated by the zoning ordinance. Other Environmentally Sensitive Areas shall be regulated to the degree presented above the general guidelines in this section.
 - (2) General guidelines for use of Environmentally Sensitive Areas are:
 - a. Land may be left as open space with ownership by the Township, homeowners' association, condominium association or other public organization acceptable to the Township.
 - b. Land may be assigned as part of each lot if properly deed restricted in perpetuity to ensure protection and preservation.
 - c. Sensitive areas may be used for stormwater management facilities and for linear development, such as roads and utility lines, which have no feasible alternative locations.
 - d. Ongoing agriculture and similar historical uses shall be permitted.
 - (3) To satisfy the alternative proposal test for preserving Environmentally Sensitive Areas, the

developer must demonstrate that disturbance of the sensitive areas cannot be avoided by redesign or reduction in project scope.

- (4) To satisfy the condition that rigorous enforcement is not necessary, the developer must demonstrate a compelling public need for the project which would not be served by other projects, mitigation measures, etc., and the fact that there will be no substantial impact on Resource Protection and Environmentally Sensitive Areas.
- (5) To satisfy the mitigating measures approach, an owner must demonstrate an equivalent area for preservation.

§ 305-332. Service loading, collection and refuse areas.

- A. Service loading and refuse areas shall take access from an internal street. Trash storage and refuse may be located in parking areas, inside or attached to the building. When attached to the building, the enclosure will be 6 feet in minimum height and constructed of materials to match the building. Outdoor collection stations shall be provided for garbage and trash removal when indoor collection is not provided.
- B. Service loading and refuse areas shall not be located on the side of a building that faces an external street.
- C. Service loading, collection stations and refuse areas shall be screened from view by enclosing with fences, walls, plant material or a combination thereof.

§305-333. Design standards for the BZ, CBD, CR, EV, IST, and WV zoning districts.

- A. Purpose.
 - (1) Provide guidance and encourage coordinated development to maintain a high standard of architectural and site development design to reflect and enhance the visual, historic, and cultural character of the Township.
 - (2) Encourage design creativity to strengthen the overall appearance of new and proposed mixed use and commercial centers along the Route 611 corridor and within mixed-use, commercial, and industrial developments.
 - (3) Provide an impetus for attracting and retaining businesses within the Township.
 - (4) Promote walkable streets, minimize the visual impacts of automobiles, establish a sense of scale in buildings, and improve the public realm within the streetscape environment.
 - (5) Encourage lively, human-scaled activity areas, and gathering places for the community through encouraging a mix of uses.
- B. Applicability.
 - (1) The standards shall apply to all properties within the following districts:
 - a. WV Warrington Village District
 - b. BZ Business Zone District
 - c. CBD Central Business District
 - d. CR Commercial Residential District
 - e. EV Eureka Village District
 - f. IST Industrial Science Technology District
 - (2) These are supplemental standards which shall apply in addition to all other applicable regulations of the zoning ordinance and this Ordinance. In the case of a conflict between this section and any other section, the section imposing the stricter requirement shall apply.
 - (3) The standards serve as a template for future development, helping potential developers understand the community's design intentions. They also highlight the importance of patterns of symmetry, form, and other important design details, while addressing elements such as site planning, pedestrian and public amenities, architectural features, and the streetscape realm.

- (4) Implementation of the standards shall produce a cohesive, aesthetically pleasing development theme that provides an attractive business and residential environment which exemplifies the traditional character of the community for both customers and residents.
- C. Design review process.
- (1) Developers are encouraged to submit a sketch or conceptual plan and meet with Township officials to evaluate the building and site development standards. Where no subdivision or land development is required or where developments are constructed in phases, such as, but not limited to, expansions or changes in use, the proposed design shall be reviewed by Township officials as part of the building permit process and, at the request of Township officials, by the Warrington Township Planning Commission. Design review consists of a systematic assessment of the three-dimensional configuration design and materials to be used to ensure that the proposed development meets the goals of these standards.
 - (2) Owners of subdivision or land developments shall submit, in addition to all other required information, the information listed below:
 - a. Description of use or uses proposed.
 - b. Detailed architectural elevations and drawings of the proposed buildings and photographs of all structures on lots adjacent to the subject site.
 - c. Photographic examples of architectural styles similar to the proposed buildings, and illustration of proposed architectural elements and details such as doors, windows, eaves, porches, trim, gables, dormers, cornices, and molding to Township officials.
 - d. Samples, images, or catalogue cuts of proposed colors and materials
- D. BZ Business Zone, CBD Central Business District, and WV Warrington Village districts design standards.
- (1) Overall design. All new development shall encompass the following design elements:
 - a. A variety of uses and building types, which include retail shops, mixed-use buildings, services, and facilities, in close proximity to each other to encourage access by residents and offer local employment opportunities.
 - b. Natural features, historic structures, and environmentally sensitive areas are to be preserved and protected.
 - c. Public space and public amenities to include streetscapes with public realm sidewalks, benches, plazas, bicycle racks, shade trees, and other plantings shall be provided to encourage non-vehicular access to local businesses.
 - d. Public buildings and other landmarks serve as focal points for community identity.
 - e. Green technologies such as photovoltaic and green rooftop systems, which promote the use of renewable energy on existing and proposed buildings, will be encouraged.
 - f. Stormwater BMPs such as rain gardens and vegetative swales are encouraged along parking lots and sidewalks within any new development.
 - g. All public utilities required to service subdivisions and land developments shall be placed underground.
 - (2) Overall standards.
 - a. All streets, alleys, sidewalks, and pathways shall connect to other streets within the development and connect to existing streets outside the development, as appropriate. Dead-end streets or cul-de-sacs are not permitted within developments in these districts.
 - b. The number of curb cuts on major roadways shall be minimized and shared or common access drives shall be maximized and encouraged to increase vehicular and pedestrian safety.
 - c. All new development is encouraged to include vehicular access that is connected to adjacent tracts through cross easements for present or future use.
 - d. Internal traffic patterns for both vehicles and pedestrians shall be delineated within the site. Pedestrian and vehicular connections between parking lots and driveways on adjoining

commercial parcels shall be provided wherever possible to minimize turning movements onto major roadways and promote foot traffic.

- e. Trash and garbage collection areas shall be fully screened and constructed of materials that are visually compatible with the structure to which it is associated.
- f. Loading areas shall be fully screened and constructed of materials that are visually compatible with the structure to which it is associated.
- g. No outside storage trailers or bins are permitted in the front yard area.

(3) Pedestrian design standards.

- a. All new sidewalks shall have a minimum width of 5 feet.
- b. Sidewalks are required along all new and existing street frontages.
- c. Sidewalks are required to connect the road frontage sidewalks to all front building entrances, parking areas, public realm amenities, and any other destination that generates pedestrian traffic.
- d. Sidewalks shall connect to existing sidewalks on abutting tracts and other pedestrian destination points and transit stops.
- e. Decorative brick, concrete pavers or pavement treatments shall be integrated into the main entrance of the building, pedestrian access areas, and public roads. The sidewalk pattern shall continue across driveways.
- f. Areas adjacent to internal walkways shall be landscaped for visual interest, shade, and scale.

(4) Building design standards.

- a. Existing historic buildings. Any building officially designated historic per state and federal requirements shall be retained and adaptively reused.
- b. Building orientation and entrance. Front facades shall be oriented towards the street with an everyday public entrance in the front façade. Where appropriate, the building may be oriented around a courtyard or respond in design to another prominent feature. All entrances shall be clearly articulated through the use of architectural detailing such as a roof overhang, a sloped roof, a porch, or a hooded front door.
- c. Walls and windows. Blank walls shall not be permitted along any exterior wall facing a street, parking area, or walking area. Exterior walls in these locations shall meet the following criteria:
 - i. Such walls shall have architectural treatments that are the same as the front façade, including consistent style, materials, colors, and details.
 - ii. Non-residential building facades and walls shall have at least a 5-foot off-set in all facades for every 40 feet of continuous façade. Such vertical off-sets may be met through the use of bay windows, porches, porticos, building extensions, towers, varying colors and materials, and other architectural treatments. Effective horizontal building articulations are encouraged in the form architectural features or elements, unique trims, materials, or colors.
 - iii. Windows. The ground floor of any wall facing a street, parking area, or walking area shall contain windows in accordance with the following requirements:
 - a) The ground floor front facades of retail commercial uses, personal service businesses, and restaurants shall consist of at least 40 percent window area, but not more than 75 percent window area, with views provided through these windows into the business.
 - b) Except for institutional uses, all other ground floor walls facing a street, parking area, or walking area shall contain at least 25 percent window area but no more than 75 percent window area, with views provided through these windows into the business.

- c) For institutional uses, ground floor walls facing a street, parking area, or walking area shall not consist of more than 75 percent window area.
 - iv. Roofs.
 - a) Buildings with a greater than 25,000 square foot footprint shall have variation in roof lines to add visual interest and reduce the overall building scale. Roof designs shall incorporate no fewer than two of the following features:
 - 1) Architecturally designed parapets screening flat roofs and rooftop equipment,
 - 2) Pitched, slope roofs,
 - 3) Three or more sloped roof planes, and
 - 4) Repeating pattern of change in color, texture, and material modules.
 - b) Roof design. Pitched roofs are required. Flat roofs are prohibited except where hidden by a combination of parapets, partial or pent roofs that extend along all sides of the building.
 - 1) Pitched roofs shall provide overhanging eaves that extend a minimum of 1 foot beyond the building wall.
 - v. Non-residential buildings shall contain materials, windows, doors, and architectural detailing that are compatible with adjoining residential buildings within the development.
 - vi. HVAC units shall not be visible from surrounding properties or any public street on the same elevation.
- (5) Public space and public amenity standards. Owners shall submit proposed location and type of public space and pedestrian amenities such as green areas, walkways, street furniture, lighting, bicycle racks, seating elements, flags, fountains, and sculpture, so as to ultimately create a unifying pedestrian/amenity system for both multifamily and commercial development uses.
- a. Minimum public space required. For each land development or subdivision or establishment of a use on lots of 10,000 gross square feet or greater, public space shall be designed as part of the development or use. A minimum of 5 percent of the gross lot area for the CBD and BZ districts and a minimum of 3 percent of the gross lot area for the WV District shall be designated and designed as public space. Standards for public space, as regulated by the zoning ordinance must be met. In addition, separate common amenities shall be provided for multifamily dwelling uses such as a fire pit, swimming pool, seating area, or water feature.
 - b. Provisions for street furniture and public amenities shall be considered as part of the land development plan. All such street furniture shall be privately owned and maintained. The type and location of the proposed street furniture shall be consistent in style and material throughout existing adjacent developments and subject to approval by the Township.
 - c. The requirement for common public space is to foster a lively and vibrant commercial district along the Route 611 corridor (including portions of Bristol and Street roads) that can be a gathering place and center for the community. Examples of public spaces are:
 - i. Plazas
 - ii. Courtyards
 - iii. Pocket parks
 - iv. Seating areas
 - v. Outdoor eating areas
 - d. As identified by the Planning Commission and Board of Supervisors during the sketch and land development review process, examples of public amenities include:
 - i. Streetscape improvements, such as landscaping, street trees, planting strips, and perimeter parking lot hedge rows.
 - ii. Bike racks, street furniture, benches, wayfinding signs, bus stops, and other site amenities
 - iii. Pedestrian-scaled lighting with banners

- iv. Gateway features at strategic locations
- (6) Lighting standards.
- a. All parking areas, walkways, stairs, walls, and passages shall be adequately illuminated with a lighting system and fixture designed to complement the existing lighting, general surrounding area, and the site of the proposed development and to prevent any off-site glare and spillover light onto the adjacent properties. Lighting plans must provide detailed numeric footcandle values with a minimum 1.0 maintained footcandle level and a maximum 3.0 minimum maintained footcandle level. The incident spillover light at property boundaries shall not exceed 0.3 footcandle, except that this maximum may be increased to 0.5 footcandle along adjacent public roadways.
 - b. Freestanding fixtures.
 - i. Freestanding fixtures shall use appropriate sharp and full cutoff fixtures with shielding of the light source.
 - ii. Various freestanding fixture types may be permitted as approved by the Township. The design lighting plan shall provide details on all proposed fixture types, poles, colors, and materials and shall be accompanied by manufacturer cut sheets at the time of plan submission.
 - iii. The maximum height of freestanding fixtures shall vary to provide scale and dimension to the project. A maximum of 25 percent of the fixtures required on the site may be up to 30 feet in height. All other fixtures shall not exceed 15 feet in height. Fixture height is measured from the ground level or grade to the bottom of the fixture.
 - iv. Select lighting fixtures and posts shall be compatible with the architectural style of the building, development, and surrounding area.
 - v. Bollard fixtures, up to 4 feet in height, are encouraged as pedestrian area lighting. Bollard fixtures shall be sturdy and affixed to a permanent base.
 - c. When practicable, use timers, photo sensors, light-emitting diode (LED) lighting and other energy-saving lighting devices.
 - d. Canopy lighting shall be installed as an integral or recessed part of the canopy, so that the light source is not visible to drivers.
 - e. Lighting for signage shall be placed evenly at the face of the storefront and along the sign. If a commercial use occupies the second story of a building, lighting for signage is allowed. It is not allowed for a residential use above street level.
- (7) Landscape design standards. Landscape planting design is an integral component for enhancing the character of mixed-use centers and developments. Landscaped areas can serve several purposes: enhance the visual, historic, and cultural character of a commercial or multifamily development; provide both aesthetic and functional planting between or adjacent to buildings, streets, parking areas, and sidewalks; and soften the impacts between certain land uses through the provision of appropriate planting schemes. General landscape provisions include:
- a. All developments shall include landscaping that shall be integrated as part of overall site improvements in order to enhance the visual appearance and mitigate noise, light, odor, and large expanses of paved surfaces.
 - b. A registered landscape architect shall be consulted to ensure the proper use and arrangements of plant materials to achieve the appropriate landscape appearance. § 305-505.E.(8).c.ii. requires the Landscape Plan be signed and sealed by a landscape architect registered by the Commonwealth of Pennsylvania.
 - c. Landscape design shall be in accordance with the standards contained within this Ordinance unless an alternative is approved by the Township as well as all provisions contained within the zoning ordinance.

- d. Street trees. Street trees shall comply with the minimum requirements contained within this Ordinance.
 - e. Foundation planting. Foundation planting helps to frame a building and anchor it to the site. These plantings are encouraged to enhance the overall development, make it more welcoming, and tie it to the surrounding landscape.
 - i. At a minimum, a combination of trees, shrubs, ground covers, or native grasses shall be provided in accordance with the applicable requirements contained within this Ordinance.
 - ii. The use of planters is encouraged in situations where transparent or opaque walls extend to the sidewalk or foundation planting is not feasible.
 - f. Parking area planting and screening. Parking area planting softens the extent of impervious surface areas, reduces heat buildup by providing shade, and enhances aesthetic appearance. Parking area planting shall be provided along the perimeter of parking lots as well as internal areas of the parking lot.
 - g. Breaks in the continuous parking lot planting shall only be provided for vehicular access drives or sidewalks/pedestrian paths.
 - h. Planted parking lot islands and peninsulas must include a combination of trees, low growing ground cover, turf, shrubs, native grasses, flowering shrubs, and/or perennials. The use of mulch as the only ground plane treatment is prohibited.
- (8) Plant strip.
- a. Along each street line where a non-residential use adjoins an existing residence or residential district, a 15-foot-wide planting strip shall be provided, which shall include a 5-foot-wide sidewalk.
- (9) Building materials and color.
- a. Building materials. The Board of Supervisors shall have the authority to approve the use of other similar building materials not listed below on a case-by-case basis consistent with the purposes of this section. Building materials shall be limited to the following:
 - i. Stone
 - ii. Clapboard (wood, vinyl, or simulated)
 - iii. Brick
 - iv. Stucco
 - v. Board and batten
 - vi. Cedar shakes or simulated shakes looking like cedar
 - vii. Slate or slate substitute
 - viii. Decorative block
 - b. Colors. All buildings and roofs shall be designed to use primary earth tones, colors of natural materials or colors of traditional building materials such as brick, stone, or wood. Appropriate augmenting trim colors shall be permitted. Cool (blue or neutral) grays are not considered earth tones as referred to herein.
- (10) Signs.
- a. All building-mounted signs shall be consistent and compatible with the style composition, materials, colors and details of the building and the purposes of this section.
 - b. Internally lit signs shall consist of a dark background and light lettering so that the characters, letters, and graphics of the sign are illuminated but the background is not.
 - c. The owner shall comply with all applicable sign regulations of the underlying zoning district.
 - d. Rotating or revolving signs, pennants, flags, banners, balloons, and objects, such as tires, automobiles, food products or other items designed to draw attention to the product or

business must be approved by the Board of Supervisors prior to installation This does not apply to registered trademarks, service marks and similar corporate logos.

E. CR Commercial Residential District design standards.

(1) Overall provisions.

- a. All public utilities required to service subdivisions and land developments shall be placed underground.
- b. Open space/recreation design guidelines – residential uses.
 - i. An effective space system should tie together a number of diverse recreational activity areas with adequate pedestrian pathways and auto-bicycle access for residents it is intended to serve. As many homes as possible should have direct access to the open space of a development. Developed open space generally should not be isolated in one corner of a project.
 - ii. Active recreation should be visibly close but shall not interfere with the privacy of adjacent residents. It should be designed to accommodate the recreation needs of the project's intended age group.
 - iii. Suggested recreational facilities could include the following:
 - a) Pathways and bikeways.
 - b) Play lots and playgrounds.
 - c) Swimming pools.
 - d) Other amenities. Provide jogging trails, exercise areas, benches and sitting areas along the pathways where appropriate and particularly where they can incorporate or provide views of significant landscape features, recreational facilities, or interesting site design of the project.

(2) Plant strip.

- a. Along each street line where a non-residential use adjoins an existing residence or residential district, a 15-foot-wide planting strip shall be provided, which shall include a 5-foot-wide sidewalk.

(3) Building materials and color.

- a. Building materials. The Board of Supervisors shall have the authority to approve the use of other similar building materials not listed below on a case-by-case basis consistent with the purposes of this section. Building materials shall be limited to the following:
 - i. Stone
 - ii. Clapboard (wood, vinyl, or simulated)
 - iii. Brick
 - iv. Stucco
 - v. Board and batten
 - vi. Cedar shakes or simulated shakes looking like cedar
 - vii. Slate or slate substitute
 - viii. Decorative block
- b. Colors. All buildings and roofs shall be designed to use primary earth tones, colors of natural materials or colors of traditional building materials such as brick, stone, or wood. Appropriate augmenting trim colors shall be permitted. Cool (blue or neutral) grays are not considered earth tones as referred to herein.
- c. Roof design. Pitched roofs are required. Flat roofs are prohibited except where there is a partial or pent roof that extends along all sides of the building. HVAC units shall not be visible from surrounding properties or any public street on the same elevation.
 - i. Pitched roofs shall provide overhanging eaves that extend a minimum of 1 foot beyond the building wall.

F. EV Eureka Village District design standards.

(1) Overall provisions.

- a. Utilities. All developments shall be served by public sewer and public water. All public utilities required to service subdivision and land developments shall be placed underground. Electric transformers and meters shall be installed underground or behind the walls of a building or structure. These facilities shall not be visible from the street line.
- b. Ownership. Any land area proposed for development shall be in one ownership or shall be subject to a joint application filed by every owner of the land area proposed for development, under single direction, using one overall plan and complying with all requirements of the Eureka Village District.
- c. Ownership and maintenance of common open space and facilities. Ownership and maintenance of common open space and other common facilities shall be provided in accordance with the regulations in § 370-506. All open space shall be permanently deed restricted from future subdivision and development.
- d. Phasing. If the site is to be developed in phases, a master plan shall be provided, and all phased development shall be consistent with the master plan. Eureka Village development shall be constructed in accordance with a single master plan. Individual portions of the EV may be owned and constructed by different entities provided there is compliance with an overall master plan. EV development is conditional use based on approval by the Board of Supervisors.

(2) Design standards. The owner shall develop and provide a design manual that includes standards for development for the proposed architectural styles, common materials and colors, signs, lights, and other amenities, and public realm areas for review and approval by the Township. All development in the EV District shall comply with the following design standards:

- a. Overall design and layout. General layout of mixed-use developments and mixed residential developments shall include:
 - i. In general, be laid out so the nonresidential buildings are located close to the required central open space as required and have frontage on the designated development main street.
 - ii. Nonresidential buildings shall be grouped together along streets, so it is a short walking distance from one building to the next and connects to open space and trails.
 - iii. Townhouses and manor homes should be located near the nonresidential uses and central open space.
 - iv. Mixed residential neighborhoods should be designed so different housing types are well integrated, similar to patterns found in traditional villages.
 - v. Nonresidential uses shall be located within 750 feet of the intersection of Lower State and County Line roads and along Limekiln Pike opposite existing nonresidential development.
- b. Streets.
 - i. Main street(s) shall be provided upon which most nonresidential uses will have frontage. Streets within EV developments shall be interconnected with each other and with streets on abutting properties in a grid or modified grid pattern. Streets may not terminate at the boundary of sites which abut nonresidential zoning districts.
 - ii. Temporary cul-de-sacs are permitted for connectivity to adjacent properties or tracts identified as having potential for development, as determined by the Township Planning Commission and Board of Supervisors. Temporary cul-de-sacs shall be minimized within the EV District. In no case shall a permanent cul-de-sac exceed a length of 100 feet.
 - iii. On tracts of 15 acres or more, new streets within an EV development shall have a street connectivity index of 1.40 or more. The street connectivity index shall be computed by

- dividing the number of new street links (defined as street segments between intersections) by the number of new street intersections/permanent cul-de-sac bulbs.
- iv. All streets shall access an adjacent arterial street or intersect with another street or terminate in an alley.
 - v. Streets shall be public. Alleys may be private.
 - vi. As an alternative to concrete curb, Belgian block curbing (11 inches minimum block size) may be used or required as authorized by the Township.
 - vii. Street pattern. The streets pattern shall be a grid where possible with a hierarchy of streets to provide equal mobility for both pedestrian and automobiles.

Figure 10. Street Connectivity Index

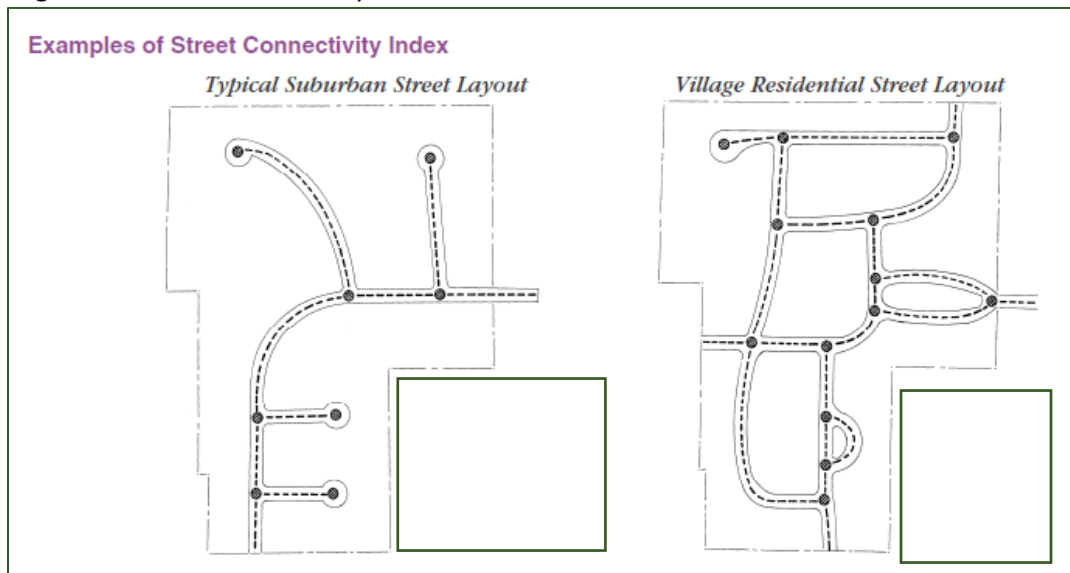


Figure 10 provides an example of how to calculate the Connectivity Index. In the typical suburban street layout diagram, there are nine links and eight nodes (circles); therefore, the Connectivity Index is 1.125 ($9/8 = 1.125$). In the village residential street layout, there are 21 links and 13 nodes; therefore, the Connectivity Index is 1.615. Cul-du-sacs count as intersections. Stub streets that dead-end at the property line for connection by other developers on the adjacent parcels later do not count as intersections. This discourages the use of cul-de-sacs at property lines and encourages developers to incorporate stub streets into the design of the subdivision.

- c. Pedestrian design standards.
 - i. Sidewalks are required along all public street frontages.
 - a) Sidewalks are required to connect the road frontage sidewalks to all front building entrances, parking areas, central open space, and any other destination that generates pedestrian traffic.
 - b) Where cul-de-sac streets are permitted by the governing body, sidewalk connections shall be required to connect the bulb of the cul-de-sac with the nearest through-road. These sidewalks shall be located in a street line or easement with a width of at least 25 feet which is fenced, physically defined as a public walkway, and/or contains softening buffers.

- c) Sidewalks shall connect to existing sidewalks on abutting tracts and other nearby pedestrian destination points and transit stops and shall be a minimum of 5 feet in width.
- d. General building design standards.
 - i. Architectural design. The owner shall submit a graphic design manual of standards for development showing the range of architectural styles and materials for review by the Township. Standards shall be at a level of detail consistent with the master plan with typical architectural styles and materials. The owner shall establish legally enforceable provisions controlling the style of architecture rooflines, porches, and general types of exterior material. Design standards should reflect the features of traditional architecture commonly found in Warrington Township and Bucks County boroughs and villages. Architecture for the EV District shall be sealed by a registered architect and approved by the Township.
 - ii. Architecture provisions shall promote use of architectural details such as shutters, porches, and decorative cornices. Architectural provisions shall promote varied rooflines overhangs and or setbacks along nonresidential and mixed-use buildings and attached dwelling units. All signs and other architectural features shall be in compliance with the standards of the established design guidelines.
 - iii. Deed restrictions. The owner shall submit a written statement of the proposed deed restrictions that would affect architectural and other matters.
 - iv. Existing historic buildings. At the discretion of the governing body, any proposed development in the EV District, shall retain and adaptively reuse any historic buildings on the property that are listed as historic by the Township. The original character of any historic principal building shall be retained.
- e. Residential building design standards.
 - i. No more than eight townhouses may be attached in a building. Townhouse structures shall have a minimum building separation of 20 feet.
 - ii. Residential buildings shall be designed to be compatible with the appearance commonly found in Warrington Township and Bucks County boroughs and villages.
 - iii. Village houses must meet all of the following criteria:
 - a) All off-street parking, including other garages or unenclosed parking spaces, must be located behind the building's front facade.
 - b) All village houses shall contain at least one of the following features:
 - 1. Either:
 - (a) A roofed but unenclosed porch running at least three quarters of the house front, being at least 7 feet in depth; or
 - (b) A portico front porch with at least two white columns and a standing seam metal roof.
 - c) A front yard raised above the sidewalk grade adjacent to the street by at least 30 inches and a retaining of at least 18 inches high within the front yard at the sidewalk line if the topography would allow such improvements.
 - d) Either a fence of permanent construction of at least 30 inches in height with one flowering shrub per each 60 inches across the width of the front of the house or a hedgerow having plant materials meeting the requirements of § 370-806. of the zoning ordinance. All shrubs and other plant materials shall be located adjacent to the street in front of the fence.
 - iv. Residential buildings must have at least a 3-foot off-set in all facades or roofs for every dwelling unit sharing a continuous facade. Such off-sets may be met through the use of

- bay windows, porches, porticos, building extensions, towers, bays, gables, dormers, steeples, and other architectural treatments.
- v. Roofs. Variations in roofline are encouraged.
 - a) All residential buildings shall have pitched roofs covering at least 80 percent of the building with a pitch of at least 6 vertical inches to every 12 horizontal inches.
 - b) Pitched roofs shall provide overhanging eaves that extend a minimum of 1 foot beyond the building wall.
 - f. Nonresidential building design standards. All non-residential buildings shall meet the following requirements:
 - i. Building orientation and entrance. Front facades of non-residential buildings shall be oriented towards commercial/main streets within the mixed-use tract, with the main public entrance facing the main street(s). When buildings are located on corners, the entrance may be located on the corner with an appropriate building articulation, such as a chamfered corner, turret, canopy, or other similar building feature. The municipal governing body may allow front facades to face existing streets rather than proposed streets, when these facades will extend an existing commercial district located along this existing street.
 - ii. Walls and windows. Blank walls shall not be permitted along any exterior wall facing a street. Exterior walls in these locations shall meet the following criteria:
 - a) Such walls shall have architectural treatments that are the same as the front facade, including consistent style, materials, colors, and details.
 - b) Windows. The ground floor of any wall facing a street shall contain windows in accordance with the following requirements:
 - 1. The ground floor front facades of retail commercial uses, personal service businesses, and restaurants shall consist of at least 35 percent window area, but not more than 75 percent window area, with views provided through these windows into the business.
 - 2. Except for institutional uses, all other ground floor walls facing a street shall contain at least 25 percent window area but not more than 75 percent window area, with views provided through these windows into the business.
 - 3. For institutional uses, ground floor walls facing a street, parking area, or walking area shall not consist of more than 75 percent window area.
 - c) Walls or portions of walls where windows are not provided shall have architectural treatments designed to break up the bulk of the wall, including at least four of the following treatments: masonry, but not flat block; concrete or masonry plinth at the base of the wall; belt courses of a different texture or color; projecting metal canopy; decorative tilework; trellis containing plantings; medallions; opaque or translucent glass; artwork, vertical visual articulation, horizontal visual articulation; lighting fixtures; or a similar architectural element not listed above, as approved by the municipal governing body.
 - d) Enclosed window displays may be used where display and windows are not feasible. The architectural provisions shall address placement of front doors which should be facing onto a street at the front of the building.
 - iii. Roofs. Variations in roofline are encouraged.
 - a) All non-residential buildings shall have pitched roofs covering at least 80 percent of the building with a pitch of at least 6 vertical inches to every 12 horizontal inches.
 - b) Pitched roofs shall provide overhanging eaves that extend a minimum of one foot beyond the building wall.

- c) A flat or shed roof may be approved with a decorative cornice.
 - iv. Non-residential buildings must have at least a 3-foot off-set in all facades or roofs for every 40 feet of continuous facade. Such off-sets may be met through the use of bay windows, porches, porticos, building extensions, towers, bays, gables, dormers, steeples, and other architectural treatments.
 - v. Non-residential buildings shall contain materials, windows, doors, architectural details, general form and shape, floor heights, and roofs that are compatible with proposed residential buildings within the development.
- (3) Plant strip.
 - a. Along each street line where a non-residential use adjoins an existing residence or residential district, a 15-foot-wide planting strip shall be provided, which shall include a 5-foot-wide sidewalk.
- (4) Building materials and color.
 - a. Building materials. The Board of Supervisors shall have the authority to approve the use of other similar building materials not listed below on a case-by-case basis consistent with the purposes of this section. Building materials shall be limited to the following:
 - i. Stone
 - ii. Clapboard (wood, vinyl, or simulated)
 - iii. Brick
 - iv. Stucco
 - v. Board and batten
 - vi. Cedar shakes or simulated shakes looking like cedar
 - vii. Slate or slate substitute
 - viii. Decorative block
 - b. Colors. All buildings and roofs shall be designed to use primary earth tones, colors of natural materials or colors of traditional building materials such as brick, stone, or wood. Appropriate augmenting trim colors shall be permitted. Cool (blue or neutral) grays are not considered earth tones as referred to herein.

G. IST Industrial Science Technology District design standards.

- (1) Overall design.
 - a. Common development requirements.
 - i. All development shall be served by public sewer and public water.
 - ii. All public utilities required to service subdivisions and land developments shall be placed underground.
 - iii. For any subdivision or land development of land within the IST District, the owner shall show the tract of land as a whole, including planned or potential uses for each piece of property. Each use must provide an entrance and egress onto an internal road that has been designed for the overall tract of land that is being subdivided or developed unless separated by a protected natural resource, such as a forest area, stream, or wetland on the same overall tract.
 - iv. Each proposed use shall be constructed in accordance with an overall plan, which shall be designed as a single architectural style.
 - v. Stormwater management facilities and the road system shall be designed for the entire tract.
 - vi. Green technologies such as photovoltaic and green rooftop systems, which promote the use of renewable energy on existing and proposed buildings, will be encouraged.
 - vii. A traffic impact analysis/study shall be required for ultimate build out.

- viii. Trash and garbage collection areas shall be fully screened and constructed of materials that are visually compatible with the structure to which it is associated.
- ix. Loading areas shall be fully screened and constructed of materials that are visually compatible with the structure to which it is associated.
- x. No outside storage trailers or bins are permitted.
- xi. Buffer yards. Along any property line abutting a zoning district boundary, a buffer yard shall be provided which shall be not less than 25 feet in width, nor greater than 50 feet, measured from such boundary line or from the street line where such street constitutes the district boundary line, and shall be in accordance with the provisions of this Ordinance. Such buffer yards may be coterminous with any required yard in this district, and, in case of conflict, the largest requirement shall apply. Planting requirements shall be in accordance with the Subdivision and Land Development Ordinance.
- b. Sidewalk design standards.
 - i. Sidewalks are required along all street frontages.
 - ii. Sidewalks are required to connect the road frontage sidewalks to all front building entrances, parking areas, amenities, and any other destination that generates pedestrian traffic.
 - iii. Sidewalks shall connect to existing sidewalks on abutting tracts and other pedestrian destination points and transit stops and shall be a minimum of 5 feet in width.
- c. General building design standards.
 - i. Front facades shall be oriented towards the street with an everyday public entrance in this front façade.
 - ii. All primary buildings must have at least a 5-foot off-set in all facades for every 40 feet of continuous façade. Such off-sets may be met through the use of windows, building extensions, towers, and other architectural treatments.
 - iii. All primary buildings shall contain materials; windows, doors, and architectural detailing that are compatible with adjoining buildings within the development. Buildings shall be uniform on all sides with common materials, colors, and architectural features and details.
 - iv. All buildings shall have variation in roof lines to add visual interest and reduce the overall building scale.
- d. Open space: common area and amenities.
 - i. A minimum of 5 percent of the lot area shall be designated and designed as common area and counted as open space and contain amenities. The goal is to provide common gathering areas with site amenities for employees and visitors on both separate tracts and within the district as a whole. These areas may be exclusive of required setbacks as determined by the Township during the land development process. Examples of common areas include:
 - a) Plazas
 - b) Courtyards
 - c) Pocket parks
 - d) Seating areas
 - e) Outdoor eating areas
 - ii. Examples of amenities include:
 - a) Bike racks
 - b) Street furniture and benches
 - c) Coordinated wayfinding signs
 - d) Streetlights

e) Sculptures

(2) Lighting standards.

- a. All proposed lighting shall comply with the requirements set forth in § 305-317. Lighting.
- b. All proposed outdoor lighting shall be shown on a lighting plan in sufficient detail to allow determination of the effects of such lighting on adjacent properties. The lighting in and around buildings and parking areas shall be of a non-glare type focused downward. No lighting shall produce glare beyond the boundaries of the site. Only diffused or reflected lights shall be visible beyond the lot line. No light shall shine directly into windows or onto streets or driveways in such a manner as to interfere with or distract a driver's vision or attention.

(3) Plant strip.

- a. Along each street line where a non-residential use adjoins an existing residence or residential district, a 15-foot-wide planting strip shall be provided, which shall include a 5-foot-wide sidewalk.

(4) Building materials and color.

- a. Building materials. The Board of Supervisors shall have the authority to approve the use of other similar building materials not listed below on a case-by-case basis consistent with the purposes of this section. Building materials shall be limited to the following:
 - i. Stone
 - ii. Clapboard (wood, vinyl, or simulated)
 - iii. Brick
 - iv. Stucco
 - v. Board and batten
 - vi. Cedar shakes or simulated shakes looking like cedar
 - vii. Slate or slate substitute
 - viii. Decorative block
- b. Colors. All buildings and roofs shall be designed to use primary earth tones, colors of natural materials or colors of traditional building materials such as brick, stone, or wood. Appropriate augmenting trim colors shall be permitted. Cool (blue or neutral) grays are not considered earth tones as referred to herein.

Article IV

Required Improvements

§ 305-401. Purpose.

- A. The purpose of this Article is to establish and define the public and/or site improvements on or off site which will be required to be constructed by the developer in conjunction with the Board of Supervisors' approval of a subdivision and/or land development.
- B. All construction shall be completed in accordance with the specific conditions of the subdivision and/or land development approval in a manner acceptable to the Township Engineer.
- C. All improvements shall be constructed in accordance with specifications in PennDOT Publication 408 and Form 409 Specifications, as amended, Roadway Construction Standards, as amended, and specifications listed in Appendix D of this Ordinance.

§ 305-402. Application.

- A. The improvements addressed in this Article are minimum requirements. However, the Board of Supervisors reserves the right in any case to increase the same if conditions so warrant.
- B. If any mandatory provisions of this Ordinance are shown by the developer to be unreasonable and cause undue hardship as they apply to the proposed subdivision and/or land development, the Board of Supervisors may grant a waiver to such developer from such mandatory provisions, provided that such variations will not have the effect of nullifying the intent of this Ordinance. The responsibility of proof of hardship shall be borne by the developer.
- C. In granting waivers and/or modifications, the Board of Supervisors may impose such conditions as will, in their judgment, secure substantially the objectives of the standards or requirements so varied or modified.

§ 305-403. Revision of plans.

When minor changes from the approved subdivision and/or land development plans become necessary during construction, the developer must obtain written approval from the Township Engineer to implement such changes. In the event that such changes are deemed to be substantial or significant by the Township Engineer, written approval of the Board of Supervisors of an amended final plan shall be secured before the execution of such changes.

§ 305-404. Acceptance for dedication.

Any (required) improvements proposed for dedication shall be accepted or refused by the Board of Supervisors within the timelines established under the PaMPC.

§ 305-405. Maintenance period.

A written agreement and associated financial security is required for the satisfactory maintenance of all streets and other improvements proposed for dedication for a period of 18 months after dedication acceptance in accordance with the provisions of the PaMPC.

§ 305-406. Monuments.

- A. Monuments shall be placed at each change in direction of boundary; street lines shall be monumented at each change in direction and at the beginning and end of curves; utility easements shall be monumented at their beginning and at their end and areas to be conveyed for public use shall be fully monumented at their external boundaries.
- B. Monuments shall be placed in the ground after final grading is completed, at the time specified by the Township Engineer. The monuments shall be concrete, minimum 4 inches square in width and 2 feet

in length.

- C. All monuments shall be certified for accuracy by the developer's professional registered land surveyor. Accuracy of monument shall be within three hundredths of a foot.

§ 305-407. Streets and parking areas.

- A. The construction of streets, roads, lanes, alleys, driveways, and parking areas, as shown on the approved subdivision and/or land development plans and as addressed within the Land Development Agreements, shall in every respect conform to the requirements as specified in Article III of this Ordinance or as the Board of Supervisors may require.
- B. Specifications. The minimum requirements for materials shall be those contained in the PennDOT Publication 408 Specifications, as amended, and Roadway Construction Standards, as amended.
- C. All streets shall be graded to the grades shown on the street profiles and cross-section plans included with the approved subdivision and/or land development plans.

§ 305-408. Sidewalks.

- A. Sidewalks shall be constructed along all existing abutting streets and on both sides of all other streets proposed, including temporary and permanent cul-de-sacs, within a subdivision and/or land development for all districts.
- B. Sidewalks, on-site walks, and ADA ramps shall be installed in conjunction with all proposed subdivisions and/or land developments for convenience and access to all living units from streets, driveways, parking areas, or garages, as well as convenient circulation and access to all project facilities.
- C. All sidewalks shall be constructed in accordance with PennDOT Publication 408 Specifications, as amended, or § 305-313 of this Ordinance, whichever is more restrictive.
- D. Bituminous walkways, constructed in accordance with Township Specifications, may be permitted as an alternative to concrete sidewalks at the discretion of the Board of Supervisors.

§ 305-409. Curbs.

- A. Curbs shall be provided along both sides of all streets as specified in PennDOT Publication 408 Specifications, as amended, or as specified in Appendix D of this Ordinance.
- B. Along the existing street on which a subdivision and/or land development abuts (hereinafter called "boundary streets"), curbs shall be constructed and the existing paved cartway shall be widened in accordance with the specifications contained within § 305-304 of this Ordinance along the entire frontage of the site.

§ 305-410. Street signs.

- A. The developer shall install at every intersection of a private or dedicated street a street sign or street signs having thereon the names of the intersecting streets. The developer shall be fully responsible for the erection of street signs on dedicated, private or nondedicated streets in all residential, commercial, and industrial developments.
- B. Street signs shall be installed prior to the issuance of the first Use and Occupancy Permit within a subdivision and/or land development. Materials, color, and lettering shall be in accordance with specifications acceptable to the Board of Supervisors based on the recommendations of the Director of Public Works. Temporary street signs may be installed with the approval of the Township Engineer but shall be made permanent before the close-out of the Land Development Agreement.

§ 305-411. Streetlights.

All proposed streets, whether dedicated or privately owned, intersections with existing streets and existing street improvements, shall be illuminated as specified in § 305-317 of this Ordinance. Lighting layout and design shall be subject to final approval by the Township based on input provided by the Township Lighting Consultant.

§ 305-412. Storm drainage system.

In conjunction with any subdivision and/or land development, the developer shall construct stormwater drainage facilities, including curbs, catch basins and inlets, storm sewers, swales and stabilized channels, and retention/detention basins in order to prevent flooding, erosion, sedimentation, and other hazards to life and property. All such facilities are to be of a size and gradient to adequately accommodate maximum potential volumes and velocities as indicated in the required stormwater management plan (see § 305-322 of this Ordinance and Chapter 288, Stormwater Management). Facilities size, type, and general construction shall follow those standards and specifications of PennDOT Publication 408 Specifications, as amended; the Natural Resources Conservation Service Engineering Field Manual, as amended; and, PennDOT Roadway Construction Standards, as amended.

§ 305-413. Public water supply.

- A. The developer shall construct water mains in such a manner as to make adequate water service available to each lot or dwelling unit within the subdivisions and/or land development. The entire system shall be designed in accordance with the requirements and standards of the public or private agency having jurisdiction and shall be subject to their approval.
- B. The system shall also be designed with adequate capacity and appropriately spaced fire hydrants for firefighting purposes. Review and approval by the Fire Marshal shall be required in order to ensure that fire protection is provided.
- C. All additions described in this section will be dedicated to the public or private agency having jurisdiction upon satisfactory completion as determined by the applicable agency.

§ 305-414. Private water supply.

Where no public water is accessible, as determined by the Warrington Township Engineer, water shall be furnished by private groundwater wells constructed by the developer in accordance with Chapter 353, Water, Article III, Well Rules and Regulations, of the Code of the Township of Warrington. Copies of all applicable documentation concerning well construction shall be submitted to the Township.

§ 305-415. Public sanitary sewers.

- A. Whenever practicable, public sanitary sewer service shall be provided to all proposed subdivisions and/or land developments. If, at the time of final approval, public sanitary sewer facilities are not available to the subdivision and/or land development but will become available within a period of five years or a period determined by the Board of Supervisors from the date of recording of the subdivision and/or land development plans, the developer shall be required to install at their expense a sanitary sewer collection system consisting of sewer mains and service laterals to the street line in accordance with the requirements and standards of the applicable public or private agency having jurisdiction. Review and approval by the public or private agency having jurisdiction shall be required and the sanitary sewer collection system shall be dedicated to the aforementioned public or private agency having jurisdiction. The sanitary sewer collection system installation shall include the construction within street lines or easements to connect the system to the existing sanitary sewer system that is owned/operated by public or private agency having jurisdiction.
 - (1) A sanitary sewer collection system shall be considered to be planned for extension to a given area

any time after preliminary engineering and related studies have been completed, Sewage Facilities Planning Approval has been issued by the PaDEP, and the construction of facilities adequate to serve the area containing the subdivision and/or land development has been programmed for completion within five years.

- (2) When capped sewers are provided, on-lot sewage disposal systems shall also be provided to service the proposed subdivision and/or land development on an interim basis.
- B. Size and grade. Sanitary sewers, both public and private, shall conform to the construction specifications of the public or private agency having jurisdiction.
- C. Manholes. Manholes shall be located at maximum intervals of 400 feet, and at each change of line or grade. Manhole appurtenances shall conform to the construction specifications of the public or private agency having jurisdiction.
- D. Laterals. Lateral connections to each lot shown on the approved subdivision and/or land development plans shall be installed to the edge of easements or street line of the street prior to paving. Each building shall have separate connection to the sanitary sewer collection system.
- E. Construction and inspection. All sanitary sewers shall be designed and constructed in accordance with the specifications of the public or private agency having jurisdiction. All construction shall be inspected and approved by a representative of the public or private agency having jurisdiction prior to backfilling. As-built plans of the sanitary sewer collection system showing horizontal and vertical dimensions and locations of all components of the system shall be submitted to the Township, as well as the public or private agency having jurisdiction upon completion of the construction.
- F. No public sanitary sewer system or treatment plant shall be constructed until plans and specifications have been submitted to the PaDEP for review and approval and all applicable permits are issued and approved in accordance with existing regulations.
- G. All public sanitary sewer lines and treatment plants shall conform to the construction specifications of the public or private agency having jurisdiction and shall be dedicated to the aforementioned public or private agency having jurisdiction upon satisfactory completion of construction.
- H. Low-pressure sewer systems shall not be permitted in residential developments.

§ 305-416. Private sewage disposal systems.

If public sewer facilities are not available as determined by the Township Engineer, the developer shall provide for sewage disposal on an individual on lot basis in accordance with the applicable regulations of the PaDEP and the Bucks County Health Department, and any amendments thereto made.

§ 305-417. On-lot sewage disposal system and private well locations.

The dimensioned location of the on-lot sewage disposal system and the private well must be shown on the subdivision and/or land development plans and must be constructed and functioning prior to the issuance of a building permit by the Township.

§ 305-418. Electric, telephone, cable television and communication facilities.

- A. All electric, telephone, cable television, broadband and communication service facilities, both main and service lines, shall be provided by underground cables, installed in accordance with the prevailing standards and practices of the utility and other companies providing such services, except where it is demonstrated to the satisfaction of the Township Engineer that the underground installation herein required is not feasible because of the physical condition of the lands involved.
- B. All wireless communication facilities shall be installed in accordance with Article IX of the zoning ordinance.
- C. Where practicable, all utilities shall be located within the street line. Otherwise, easements, as specified in § 305-320 of this Ordinance, for installation and maintenance of utilities shall be provided.

- D. The subdivision and/or land development plans shall illustrate locations of all utilities and any associated easements or street lines and shall be coordinated with required street tree planting and other utilities servicing the subdivision and/or land development.
- E. Cable television service and broadband cables shall be installed underground along with other utilities in the street lines or utility easements similar to the method provided for the installation of electric or telephone service and connections. Installation of cable television and broadband wires, cables or other means of service shall be by the enfranchised cable operator (operators, if more than one) authorized by the Township to provide television cable or broadband signals to the residents where the subdivision and/or land development is to be constructed. Cable television and broadband service shall be made available to all new construction in the Township. Each residence constructed within the Township shall be prewired to provide distribution of cable television and broadband within the residence at a minimum of one location. Such prewiring shall be performed either by the enfranchised cable operator if it chooses to do so or, in the event it does not choose to prewire the residence, then by a competent contractor or other communications provider who shall prewire the residential unit in accordance with specifications and standards established by the Federal Communications Commission (FCC) and the National Electrical Code (NEC).

§ 305-419. Grading.

Grading shall conform in all respects to the approved subdivision and/or land development plans and the requirements and standards specified in § 305-321 of this Ordinance.

§ 305-420. Planting.

- A. Street trees and other required plantings shall be in accordance with § 305-329 of this Ordinance.
- B. Street trees and other required plant material shall not be planted until the finished grading of the subdivision and/or land development has been completed.
- C. The Township Planning Commission and the Environmental Advisory Council (EAC) shall review plans of proposed street tree plantings or buffer zone plantings and make recommendations to the Board of Supervisors for consideration of approval or disapproval.

Article V**Procedure for Subdivision and Land Development****§ 305-501. General.**

- A. There are two stages in the procedure for approval of subdivision and land development plans. These stages are required to enable the Township Planning Commission and the Board of Supervisors and their professional consultants to have an adequate opportunity to review the subdivision and/or land development plan submission and to ensure that their formal recommendations are reflected in the approved plans.
- B. The separate stages of approval require the submission of preliminary and final plans. These plans differ in their purpose and required level of detail. The table below indicates the required plans for the different types of submission and the section in which those plans are defined:

Table 12. Plan Requirements.

Type of Subdivision	Type of Plan Requirements (and section number)	
	Preliminary	Final
Feasibility Sketch Plan	Not required but highly recommended	Not required
Minor	Not required	Required (§ 305-504)
Major	Required (§ 305-505)	Required (§ 305-506)
Land Development	Required (§ 305-505)	Required (§ 305-506)

- C. The review process required by the Township Planning Commission and Board of Supervisors shall include no more than 90 days each for any preliminary and final plans, following the date of the regular meeting of the governing body or the planning commission (whichever first reviews the application) next following the date the complete application is filed or after a final order of court remanding an application, provided that should the said next regular meeting occur more than 30 days following the filing of the complete application or the final order of the court, the said 90-day period shall be measured from the 30th day following the day the complete application has been filed. The Township shall make a determination as to whether the application and plans are complete, as required by this Ordinance. The developer shall be notified as to the completeness of the application. The 90-day period shall begin only after the determination of completeness has been made. Said 90-day period may be extended where the developer agrees in writing to an extension of time. The presentation of a revised preliminary or final plan shall each be considered a separate submission. A complete application shall include the required plans as set forth herein, the traffic impact study, as required herein, and other studies as required by this Ordinance.
- D. The Township Zoning Officer shall stamp each plan submission and resubmission "Date Received" and shall date and initial the plan above the title block. Plans should be distributed to the Township Planning Commission as soon as practicable.
- E. The Township Engineer shall review preliminary and final plan applications and provide recommendations to the Planning Commission and Board of Supervisors as required by the provisions in this Ordinance. The Township Engineer shall make recommendations indicating approval or disapproval of the proposed subdivision or land development based upon the various engineering considerations identified as they are reflected in the submitted plans. For the purpose of clearly identifying the extent of the Township Engineer's responsibilities in the review of subdivision and land developments, the following engineering considerations are provided:

- (1) Relative layout and design of lots and parcels.
- (2) Dimensions and areas of lots and parcels.
- (3) Soil conditions.
- (4) Surface and subsurface drainage conditions and plans.
- (5) Lighting plans.
- (6) Utility plans.
- (7) Landscape and buffer plans.
- (8) Location and design of entrance and exit accessways.
- (9) Road specifications, cross-sections and profiles.
- (10) Traffic impact.
- (11) Water service.
- (12) Stormwater management.
- (13) Land profiles.
- (14) Sewage disposal.
- (15) Compliance of the plans in all respects to the zoning ordinance in consultation, as necessary, with the zoning officer.
- (16) Improvements required – materials, construction methods and workmanship.

§ 305-502. Application.

- A. Application for subdivision and land development shall be made on forms provided by the Township and shall contain all the information required therein. Failure to provide all the required information shall result in the application being deemed incomplete.
- B. Except for publicly traded corporations, applicant identity shall include, in the case of a corporation, all officers, directors, and stockholders holding more than 10 percent; and in the case of a partnership, it shall include all partners, except for limited partners.
- C. The applicant shall submit documentation verifying that all real estate taxes due on the property are paid and current.
- D. The applicant shall certify that there are no unresolved Notices of Violation pertaining to the property that is the subject of the application, whether issued by the Township or any county or state agency having jurisdiction.

§ 305-503. Feasibility sketch plan; major subdivision or land development.

- A. Purpose. The purpose of the feasibility sketch plan is to afford the developer the opportunity to consult early and informally with the Township Planning Commission and Bucks County Planning Commission before the preparation of the preliminary plan and formal application for approval.
- B. General.
 - (1) During the feasibility sketch plan procedure, the developer can advantageously make use of the services of both Township and county planning commissions to help analyze the subdivision and/or land development and plan more adequately for its sound coordination with the community. The feasibility sketch plan procedure also affords both planning commissions the opportunity to give informal guidance to the developer at a stage when potential points of difference can be more easily resolved. It can also simplify official actions and save unnecessary expense and delay.
 - (2) Feasibility sketch plans may be submitted, but shall not be required, for informal discussion for any major subdivision or land development.
- C. Submission requirements. Information furnished in conjunction with the feasibility sketch plan shall include the following information. If a feasibility sketch plan is not submitted, subsections C.(8) and C.(9) shall be submitted with the preliminary plan.

- (1) Name of the subdivision or land development.
- (2) Name and address of the owner/developer.
- (3) Name and address of the engineer, landscape architect, or surveyor responsible for the plan in accordance with § 503.(1). of the PaMPC.
- (4) Tract boundaries.
- (5) Date, North point, and scale.
- (6) Location map.
- (7) Existing streets on and adjacent to the tract.
- (8) Significant topographic and physical features, including, but not limited to, USGS contours, existing vegetation, ~~and~~ natural drainage, trees over 10 inches diameter, forest or wooded areas, wetlands, streams, vernal pools, and prime agricultural land.
- (9) Proposed general street and lot or building layout prepared as an overlay to existing features.
- (10) Existing tract and adjacent property zoning.
- (11) Limits of resource protection areas.
- (12) Limits of environmentally sensitive area.
- (13) Name of the current zoning ordinance with the latest revision date and the current subdivision and land development ordinance with the latest revision date.
- (14) An aerial photograph of the site with the site boundary identified.
- (15) Classifications of all existing and proposed streets on and adjacent to the site based on the standards in § 305-304 of this Ordinance.
- (16) A detailed narrative describing proposed activity to be conducted as part of the proposed use.

§ 305-504. Minor subdivision.

- A. Purpose. It is the purpose of this section to provide a simplified procedure by which the plans for minor subdivisions (as defined in § 305-202 of this Ordinance) may be submitted and approved.
- B. General. In the event that the proposed subdivision shall involve construction of or a change in the location of streets, sanitary or storm sewers, water mains, culverts, and other municipal improvements, then the provision of this section on minor subdivisions shall not be applicable and the developer shall be required to comply with the requirements of § 305-505.
 - (1) At the discretion of the Board of Supervisors, curbs and sidewalks may be required to be installed in connection with a minor subdivision if they are lacking at the time of application.
 - (2) Minor subdivisions shall meet the requirements of this Ordinance for drainage, stormwater management, street trees, public water and sewer connections, driveways and driveway aprons. If additional improvements, beyond these, are required, then the application shall be deemed to be a major subdivision.
- C. Fee. See the Township Fee Schedule.
- D. Procedure.
 - (1) Developer prepares minor subdivision plan and application.
 - (2) The developer shall submit the required copies of the plan set, application and associated documentation to the Zoning Officer and other entities as required herein. The email address and/or contact information of the developer and the developer's engineer must be included with the application. The required copies to be submitted to the Zoning Officer and the acceptable format of said copies shall be submitted in accordance with the following:
 - a. Two paper copies and one digital copy of the subdivision/land development application.
 - b. Two paper copies and one digital copy of the full plan set.
 - c. 18 paper copies and one digital copy of the partial plan set. Partial plan sets shall consist of a cover page, record plans, existing conditions plan, construction improvements plan, landscaping and lighting plans and associated details, utility plans, stormwater management

- plans, and any other plans deemed to be necessary by the Zoning Officer.
- d. 16 paper copies and one digital copy of the conditional use application, if applicable.
 - e. Two paper copies and one digital copy of the traffic impact study, if applicable.
 - f. Two paper copies and one digital copy of the environmental site assessment, if applicable.
 - g. Two paper copies and one digital copy of any other document as required by this Ordinance.
- (3) Developer must obtain and submit one copy of the PennDOT Highway Occupancy Permit for each encroachment within the legal street line of state roads and must submit an application for the approval of the Township Engineer for all encroachments within Township road street lines, in consultation with the Township Engineer.
- (4) Township Zoning Officer, in consultation with the Township Engineer, checks submission against checklist for completeness and:
- a. If a submission is incomplete, immediately returns submission to developer, indicates the deficiencies and the 90-day review period shall begin only after a completed application is submitted; or
 - b. If submission is complete, accepts minor subdivision plan, application, and fee.
- (5) The Township Zoning Officer shall submit one copy of the plan and application to the appropriate boards, committees, and commissions. The developer shall follow the submittal procedures established by the various external entities that require plan submissions, such as PennDot, the Bucks County Health Department, the Bucks County Conservation District, or the Bucks County Planning Commission.
- (6) At a regular or special Township Planning Commission meeting following receipt of reports from agencies listed above, the Planning Commission shall hold a public meeting, and:
- a. Review the developer's submission.
 - b. Review all reports received.
 - c. Discuss submission with the developer.
 - d. Evaluate the plan, reports, and discussion.
 - e. Give interested members of the public the opportunity to discuss and inquire about the plan.
 - f. Determine whether the preliminary plan submission meets the objectives and requirements of this Ordinance and other ordinances of the Township.
 - g. Make recommendations to the Board of Supervisors for approval, conditional approval, or disapproval of the preliminary plan. When the application is not recommended for approval, the decision shall specify the defects found in the application, describe the requirements which have not been met, and, in each case, cite the specific provisions of the applicable ordinance which have not been satisfied.
- (7) The Board of Supervisors, within the time period prescribed in the latest version of the Municipalities Planning Code, shall:
- a. Evaluate the developer's submission and reports of the Township Engineer, the County Planning Commission, and the Township Planning Commission.
 - b. Discuss the submission with the developer.
 - c. Determine whether the minor subdivision plan meets the objectives and requirements of this Ordinance and other ordinances of the Township.
 - d. Give interested members of the public the opportunity to discuss and inquire about the plan.
 - e. Either approve, conditionally approve, or disapprove the submitted plans.
 - f. Inform the developer of the decision personally or in writing, mailed to them at their last known address not later than 15 days following the decision. When the application is not approved, the decision shall specify the defects found in the application, describe the requirements which have not been met, and in each case cite the specific provisions of the applicable ordinance which have not been satisfied.

- (8) Failure of the Board of Supervisors to render a decision and communicate it to the developer within the time and in the manner required herein shall be deemed an approval of the minor subdivision plan in terms as presented, unless the developer has agreed, in writing, to an extension of time or a change in the prescribed manner of communication of the decision, in which case failure to meet the extended time or change in manner of communication shall have like effect.
 - (9) After all signatures, as required by § 305-507.B.(3)c., have been obtained on Record Plans of the minor subdivision, the Board of Supervisors shall sign the aforementioned plans.
 - (10) Before acting on any minor subdivision plan, the Board of Supervisors may hold a public hearing in the manner prescribed in the PaMPC.
- E. Submission requirements. The minor subdivision plan shall meet the following standards and include or be accompanied by the following information:
- (1) Drafting standards.
 - a. The plan shall be drawn at a scale of one-inch equals 40 feet, 50 feet, or 100 feet.
 - b. Dimensions shall be in feet and decimal parts thereof, and bearings shall be in degrees, minutes and seconds.
 - c. The plan shall be a clear, legible white paper print.
 - (2) General information to be shown.
 - a. Name of the subdivision.
 - b. Name and address of the owner/developer.
 - c. Name and address of the engineer, landscape architect, or surveyor responsible for preparation of the plan in accordance with § 503.(1). of the PaMPC.
 - d. Present zoning classification on the subject tract and adjacent properties, and requirements pertaining to the subject tract.
 - e. Date, North point and scale.
 - f. A location map for the purpose of locating the site at a scale of not less than one-inch equals 800 feet.
 - g. All monumentation, both existing and proposed, noting material.
 - h. A note shall be included on the plan stating: "Any additional subdivision of a lot created by this minor subdivision submitted within 10 years of the date of approval of this plan shall be deemed to be a major subdivision and shall follow the procedures contained within the Warrington Township Subdivision and Land Development Ordinance applying thereto."
 - i. Name of the current zoning ordinance with the latest revision date and the current subdivision and land development ordinance with the latest revision date.
 - j. All conditions of applicable zoning approval and granted variances.
 - (3) Existing features to be shown.
 - a. Complete outline survey of the property to be subdivided or developed, showing all courses, distances, areas, property corners (existing monumentation, markers, pins, etc.), and tie-ins to all adjacent street intersections. The outline survey shall be determined by a field boundary survey performed and/or verified within one year of the minor subdivision plan submission.
 - b. All existing or previously imposed property encumbrances, including deed restrictions, easements, encroachments, etc., of record which may affect the title to the land being subdivided or developed.
 - c. The location, names, classifications and widths of streets, the location of property and governmental boundary lines and names of adjacent owners, the location of watercourses, sanitary sewers, water distribution lines, storm drains, easements or street lines, and similar features.
 - d. Resource protection areas.

- e. Environmentally sensitive areas.
 - f. Significant topographic and physical features, including, but not limited to, USGS contours, existing vegetation, natural drainage, trees over 10 inches diameter, forest or wooded areas, wetlands, streams, vernal pools, and prime agricultural land.
 - g. An aerial photograph of the site with the site boundary identified.
- (4) Proposed layout.
- a. Proposed layout of lots.
 - b. Lot numbers.
 - c. Building setback lines.
 - d. Gross and net lot areas.
 - e. Resource conservation site analysis plan. The resource conservation site analysis plan should overlay the proposed development with the existing conditions of the site and all other existing features of the site required in § 504.E.(3).
 - f. Classifications of proposed streets based on the standards in § 305-304 of this Ordinance.
- (5) For state roads, a Highway Occupancy Permit shall be obtained from PennDOT documenting that the plan has been reviewed and approved in concept and that traffic considerations, driveways, and the discharge of water on the street are acceptable. For Township roads, a Roadway Occupancy Permit shall be obtained from the Township Engineer approving all highway encroachments within street lines of Township roads.
- (6) Recording of plan, see § 305-507.
- (7) Impact studies. Impact studies may be required for environmental issues at the discretion of the Township.
- (8) Water and sanitary sewer service. A will-serve letter shall be submitted from the public or private water and/or sewer agency with jurisdiction.
- F. Conversion to major subdivision.
- (1) A minor subdivision application filed after May 9, 2017, shall be subject to the requirement that any additional subdivision of a lot created by that minor subdivision within 10 years of the date of approval of the minor subdivision plan shall be deemed to be a major subdivision for the purposes of this Ordinance and shall follow the procedure applying to major subdivisions.
 - (2) The developer for such additional subdivision shall be required to install all public improvements that would have been required had the subdivision originally been classified as a major subdivision.

§ 305-505. Preliminary plan; major subdivision or land development.

- A. Purpose. The purpose of the preliminary plan is to obtain formal conditional approval to minimize changes and revisions before final plans are submitted.
- B. General. A preliminary plan and application shall be submitted conforming in all respects with the provisions of this Ordinance.
- C. Deposit and fee. See the Township Fee Schedule.
- D. Procedure.
 - (1) Developer prepares preliminary plan and application.
 - (2) The developer shall submit the required copies of the plan set, application and associated documentation to the Zoning Officer and other entities as required herein. The email address and/or contact information of the developer and the developer's engineer must be included with the application. The required copies to be submitted to the Zoning Officer and the acceptable format of said copies shall be submitted in accordance with the following:
 - a. Two paper copies and one digital copy of the subdivision/land development application.
 - b. Two paper copies and one digital copy of the full plan set.

- c. 18 paper copies and one digital copy of the partial plan set. Partial plan sets shall consist of a cover page, record plans, existing conditions plan, construction improvements plan, landscaping and lighting plans and associated details, utility plans, stormwater management plans, and any other plans deemed to be necessary by the Zoning Officer.
 - d. 16 paper copies and one digital copy of the conditional use application, if applicable.
 - e. Two paper copies and one digital copy of the traffic impact study, if applicable.
 - f. Two paper copies and one digital copy of the environmental site assessment, if applicable.
 - g. Two paper copies and one digital copy of any other document as required by this Ordinance.
- (3) Township Zoning Officer, in consultation with the Township Engineer, checks submission against checklist for completeness and:
- a. If a submission is incomplete, immediately returns submission to developer, indicates the deficiencies and the 90-day review period shall begin only after a completed application is submitted; or
 - b. If submission appears to be complete, accepts preliminary plan submission and fees, and dates and initials the plan.
- (4) The Township Zoning Officer shall submit one copy of the plan and application to the appropriate boards, committees, and commissions. The developer shall follow the submittal procedures established by the various external entities that require plan submissions, such as PennDot, the Bucks County Health Department, the Bucks County Conservation District, or the Bucks County Planning Commission.
- (5) At a regular or special Township Planning Commission meeting following receipt of reports from agencies listed above, the Planning Commission shall hold a public meeting, and:
- a. Review the developer's submission.
 - b. Review all reports received.
 - c. Discuss submission with the developer.
 - d. Evaluate the plan, reports, and discussion.
 - e. Give interested members of the public the opportunity to discuss and inquire about the plan.
 - f. Determine whether the preliminary plan submission meets the objectives and requirements of this Ordinance and other ordinances of the Township.
 - g. Make recommendations to the Board of Supervisors for approval, conditional approval, or disapproval of the preliminary plan. When the application is not recommended for approval, the recommendation shall specify the defects found in the application, describe the requirements which have not been met, and, in each case, site the specific provisions of the applicable ordinance which have not been satisfied.
- (6) At any public meeting on an application held pursuant to § 305-505.D.(5) of this subsection, the following shall apply:
- a. All witnesses presented as experts in a particular matter within the purview of any profession shall be licensed in the Commonwealth of Pennsylvania. Witnesses to any other matter or fact shall not be considered to be expert unless accepted as such by the chair of the Planning Commission based upon a resume. The limits of such expertise shall be established before the presentation begins.
 - b. Questions and/or comments from members of the public shall be accepted and may be directed to each witness at the conclusion of their presentation. Public comment, including additional questions, shall be accepted after the developer has concluded their presentation and before the Planning Commission deliberates.
- (7) The Board of Supervisors, within the time prescribed in the latest version of the Municipalities Planning Code, shall:
- a. Evaluate the developer's submission and the reports of the Township Engineer, the Township

- Planning Commission, and any other applicable reviewing agency.
- b. Determine whether the preliminary plan meets the objectives and requirements of this Ordinance, the zoning ordinance, and other ordinances of the Township.
 - c. Give interested members of the public the opportunity to discuss and inquire about the plan.
 - d. Either approve, conditionally approve, or disapprove the preliminary plan.
 - e. Inform the developer of the decision in writing by mail at their last known address not later than 15 days following the decision. When the application is not approved, the decision shall specify the defects found in the application, describe the requirements which have not been met, and in each case, site the provisions of the applicable ordinance which have not been satisfied.
- (8) Failure of the Board of Supervisors to render a decision and communicate it to the developer within the time and in the manner required herein shall be deemed an approval of the preliminary plan, unless the developer has agreed, in writing, to an extension of time or a change in the prescribed manner of communication of the decision, in which case, failure to meet the extended time or change in manner of communication shall have like effect.
- (9) Approval of the preliminary plan shall constitute conditional approval of the subdivision or development as to the character and intensity, but shall not constitute approval of the final plan or authorize the sale of lots or construction of buildings.
- (10) Before acting on any preliminary plan, the Board of Supervisors may hold a public hearing in the manner prescribed in the PaMPC.
- E. Submission requirements. The preliminary plan shall show or be accompanied by the following information:
- (1) Drafting standards.
 - a. The plan shall be drawn at a scale of one-inch equals 40 feet, 50 feet or 100 feet.
 - b. Dimensions shall be in feet and decimal parts thereof, and bearings shall be in degrees, minutes, and seconds.
 - c. Each sheet shall be numbered and shall show its relationship to the total number of sheets.
 - d. Where any revision is made, or when the plan is a revision of a previously approved plan, dotted lines shall be used to show features or locations to be abandoned and solid lines to show the presently proposed features.
 - e. The plan shall be so prepared and bear an adequate legend to indicate clearly which features are existing and which are proposed.
 - f. The boundary line of the subdivision or land development shall be shown as a solid heavy line.
 - g. The plan shall be a clear, legible white paper print.
 - h. Plans shall be prepared on sheets no larger than 24 inches by 36 inches, and all lettering shall be so drawn as to be legible if the plan should be reduced to half the size.
 - (2) General information to be shown.
 - a. Name of the subdivision or land development.
 - b. Name and address of the owner/developer.
 - c. Name and address of the engineer, landscape architect, or surveyor responsible for preparation of the plan in accordance with § 503.(1). of the PaMPC.
 - d. Present zoning classification on the subject tract and adjacent properties, and requirements on the subject tract.
 - e. Date, North point, and scale.
 - f. A location map for the purpose of locating the site to be subdivided or developed at a scale of not less than 1 inch equals 800 feet, showing the relation of the tract to adjoining properties and to all streets, roads, and municipal boundaries existing within 1,000 feet of any part of the property proposed to be subdivided or developed.

- g. Name of the current zoning ordinance with the latest revision date and the current subdivision and land development ordinance with the latest revision date.
 - h. All conditions of applicable zoning approval and granted variances.
- (3) Existing features to be shown.
- a. Complete outline survey of the property to be subdivided or developed, showing all courses, distances, areas, property corners (existing monumentation, markers, pins, etc.), and tie-ins to all adjacent street intersections. The outline survey shall be determined by a field boundary survey performed and/or verified within one year of the preliminary plan submission.
 - b. The location, names, classifications and widths of streets, the location of property lines and names of owners, the location of watercourses, sanitary sewers, storm drains, and similar features within 400 feet of any part of the land to be subdivided or developed.
 - c. Location of all existing monuments with references noting material.
 - d. Location, size and ownership of all underground utilities, and any street lines or easements within the property.
 - e. Appropriate contours at 2-foot (minimum) intervals with sufficient details to show the course, structure, and capacity of all drainage facilities, and the method of drainage of the adjacent or contiguous properties. All ground contours shall be taken from USGS benchmarks and run direct to the degree of the actual and exact elevations of the spot points or contours.
 - f. The location and character of existing buildings, the location, size, and species of all large trees standing alone, and the location and general condition of all significant topographic and physical features, including, but not limited to, USGS contours, existing vegetation, natural drainage, trees over 10 inches diameter, forest or wooded areas, wetlands, streams, vernal pools, and prime agricultural land.
 - g. Floodplain restriction overlay areas, in compliance with § 370-503 of the zoning ordinance.
 - h. Limits and types of resource protection areas.
 - i. Limits and types of environmentally sensitive areas.
 - j. An aerial photograph of the site with the site boundary identified.
- (4) Proposed layout.
- a. The layout of streets, including name, classification and width of streets and crosswalks.
 - b. The layout and dimensions of lots.
 - c. The arrangement of buildings and parking areas in proposed industrial, commercial, and multifamily developments.
 - d. Applicable zoning requirements and the location of zoning district boundary lines affecting the subdivision and/or land development.
 - e. A reference to any land dedicated for public use, or offered for dedication for parks, recreation areas, open space, schools, widening of streets, or other public uses.
 - f. For multifamily developments, the total area, total dwelling units, number of buildings, proposed density, total parking spaces, building coverage, impervious coverage and bedroom ratio shall be noted on the plan.
 - g. For subdivisions, the total area, number of lots, average and minimum lot size, and proposed length of new streets shall be noted on the plan.
 - h. Location and size of storm drains, sanitary sewers, culverts, watercourses, and all appurtenances thereof, on-lot sewage disposal systems (if applicable), gas mains, water mains, fire hydrants, streetlights, plantings, structures, and other underground cable, internet, conduits, or structures.
 - i. Building setback lines, established by zoning, other ordinances, or deed restrictions with distances from the street line.
 - j. An indication of any lots in which other than a residential use is intended.

- k. Street lines and/or easements proposed to be created for all drainage purposes, utilities, or other pertinent reasons. Preliminary and final plans must be reviewed by PennDOT for all subdivision and/or land development plans which abut state roads.
- l. Tentative typical cross sections and center-line profiles for each proposed street shown on the preliminary plan. These plans shall be submitted as separate sheets.
- m. A plan of proposed plantings showing street tree location, landscape treatment, reverse frontage lots, required buffer strips and refuse collection screening.
- n. The developer must obtain a highway occupancy permit for all street line encroachments on state or Township roads.
- o. Where the preliminary plan covers only a portion of the subdivision and/or land development site, a sketch shall be submitted illustrating the prospective street layout for the remainder of the site.
- p. The words "preliminary plan, not to be recorded" shall be shown on the plan.
- q. A Transportation Impact Study (TIS) shall be required for all major subdivisions and/or land developments for all commercial or industrial applications, for all residential applications that generate more than 200 new ADT or greater than 20 peak hour trips, zoning changes, special exceptions, or conditional uses. The TIS will enable the Township to assess the impact of a proposed development, zoning change, special exception, or conditional use on the transportation system, both highways and public transportation in the Township. The developer shall provide a TIS of proposed development streets, existing streets and intersections providing access to the site, collector streets and intersections providing access to the general area in which the proposed development is located, and any additional streets the Planning Commission or Board of Supervisors feels may be adversely affected by the proposed development. The Transportation Impact Study shall be consistent with the requirements in Appendix G. In addition to the requirements stated herein, a traffic impact study shall be required when any of the following conditions are met:
 - i. A TIS shall be required when Use E33 Parking Structure is proposed as a principal use.
 - ii. If a TIS is required for Use H6 Drive-Thru, the TIS shall examine and make recommendations to determine if the minimum stacking distance of 160 linear feet is sufficient or if a greater stacking distance is required.
 - iii. A TIS is required for Use H9 Accessory Outdoor Eating Area. The TIS shall provide information which will be used to determine the necessary parking needs for the outdoor eating area and the impacts of the proposal upon local traffic circulation.
 - iv. A TIS is required for Use H11 Financial Self-Service Kiosk. The TIS shall examine and make recommendations to determine if the minimum stacking distance of 50 linear feet is sufficient or if a greater stacking distance is required. In addition, the TIS shall address the following issues:
 - a) Time required to service typical customer.
 - b) Arrival rate for patrons.
 - c) Peak demand hour.
 - d) Anticipated vehicular stacking required.
 - e) Anticipated traffic generation.
- r. Environmental impact study identifying all resource protection areas and environmentally sensitive areas, as well as Environmental Site Assessment Reports (as applicable). Compliance with applicable zoning ordinances and § 305-329 of these regulations shall be required. Refer to Appendix E for impact assessment report requirements. An environmental impact study shall be submitted together with the preliminary plan application for any of the following:
 - i. A subdivision of land which results in five or more dwelling units, lots, or leaseholds,

- any one of which is less than 10 acres in size. A subdivision of lots all of which are greater than 10 acres in area shall be exempt from the requirement of an environmental impact study only if all of the lots are deed restricted from further subdivision.
- ii. Any development of land for commercial or industrial use on a lot which is larger than one acre.
 - iii. Any development of land which proposes to use performance standards for protecting environmentally sensitive areas different than those listed in § 305-329 of this Ordinance. A development which will comply with the requirements of § 305-329 and, specifically, the general performance standards is not required to prepare an environmental impact study, unless existing conditions or uses conducted on the subdivision and/or land development site warrant as determined at the discretion of the Board of Supervisors.
 - iv. In addition to an environmental impact study, the Planning Commission and/or Board of Supervisors may require the submission of a Phase 1 or Phase 2 Environmental Site Assessment of any subdivision and/or land development site where potential site contamination issues may exist.
 - s. A proposed lighting plan containing:
 - i. Location of driveways, structures, curb, and sidewalk.
 - ii. Layout of all proposed utilities (including storm sewer).
 - iii. Proposed tree planting locations coordinated with proposed grading and underground utilities maintaining required horizontal separation distances.
 - iv. Location of parking area lighting and streetlight fixtures with radial extent of illumination in the form of numeric footcandle values in units of footcandles (fc); numeric footcandle values shall be in increments of 0.50 fc.
 - v. The spacing of light poles/pole foundations along streets shall be indicated for all lighting; pole, foundation, and luminaire types shall be noted.
 - vi. Photometry detail indicating coverage area of proposed luminaire and lumens shall be indicated, including a candela numeric lumen output.
 - vii. Details and appropriate manufacturer's information of all lighting and accessory equipment to be used, including fixtures, wattage, fixture height, poles, foundations, and conduit.
 - t. Resource conservation site analysis plan. The resource conservation site analysis plan should overlay the proposed development with the existing conditions of the site and all other existing features of the site required in Section 505.E.(3).
 - u. An economic impact study, if required by § 370-818 of the zoning ordinance.
 - v. The location of any electric vehicle parking spaces and electric vehicle charging stations.
- (5) Plan for stormwater management and/or erosion and sedimentation control. In the event that any developer shall intend to make changes in the contour of any land proposed to be subdivided, developed, or changed in use by grading, excavating, removing or destroying the natural topsoil, trees or other vegetative covering thereon under a subdivision and/or land development application, such subdivision or land development shall be approved only after the developer has obtained approval of a plan for stormwater management and/or erosion and sedimentation control, or there has been a determination by the Township Engineer during review of the feasibility sketch plan that such a plan is not necessary. These plans shall, as a minimum, meet the requirements of this Ordinance (see §§ 305-322 and 305-323), Chapter 288- Stormwater Management, as well as the requirements of the Bucks County Conservation District. Any plan for stormwater management and/or erosion and sedimentation control shall be submitted by the developer to the Bucks County Conservation District for review and comment. A Stormwater

Management and Best Management Practice Operation and Maintenance Agreement, when required, shall be provided by the developer to ensure that emergency measures could be taken by the Township at the developer's expense if the stormwater management and erosion and sedimentation control plans are not implemented.

(6) Public water and sewer.

- a. Where public water and sewer connection is proposed, the developer shall submit a ready to serve letter from the utility company having jurisdiction.
- b. If public water and sewer systems are not readily available to service the subdivision and/or land development, as confirmed with the Township Engineer, a feasibility report shall be submitted. The following material shall be included in the feasibility report:
 - i. A review of topography, soil conditions shown on USDA Natural Resources Conservation Service maps and subsurface geology charts and reports and local hydrogeologic conditions to the extent that such conditions will affect the costs and feasibility of various alternate types of water and sewage systems for the subdivision and/or land development.
 - ii. The results of soil percolation tests, in the event that on-lot sewage disposal systems is a viable alternative. Soil percolation tests shall be performed pursuant to the current rules and regulations of the PaDEP and Bucks County Health Department for all subdivisions and/or land developments where buildings at time of construction will not be connected to any active public sewage disposal system, and where the net density of proposed dwelling units will exceed one dwelling unit per acre.
 - iii. Recommendations stating the engineer's professional opinion as to the means of sewage disposal and water supply that will be preferable in the short- and long-term interest of the community in which the subdivision and/or land development is located.

(7) Tree protection zone.

- a. The tree protection zone shall be included on the plan.
- b. The location of all trees to be retained including trunk and dripline locations. Driplines should be plotted accurately and to scale. When groups of trees are to be retained, only the locations of the trees on the perimeter need to be shown.
- c. The location of proposed retaining walls around trees shall be shown.
- d. Construction details of all retaining walls shall be shown including special soil and fill media where applicable.
- e. Any grade changes which would alter surface and/or subsurface water movement either to or from the tree protection zone must be shown.

(8) Landscape plan submission requirements.

- a. Existing landscape features. Included at the time of preliminary plan submittal on either a separate Tree Survey plan or on the "existing features plan," the location of existing live trees with a trunk diameter (DBH) of 6 inches or more shall be filed with the Township at an appropriate and legible scale of not less than one inch to 50 feet. DBH is the "diameter of a tree at breast height," outside the bark, measured 4 1/2 feet from the ground surface. This requirement may be satisfied by the use of annotated aerial photographs at a scale as listed above, to include sufficient detail to allow the quantification of trees. This requirement may also be satisfied by the use of multiple sample areas of no less than 100 feet by 100 feet (10,000 square feet), each to be used to estimate the total forest/woodland tree count, when, in the opinion of the Township Zoning Officer or Township Engineer, the makeup of the forest/woodland is sufficiently consistent to merit the use of such samples. Information to be provided shall include the following:
 - i. Plan scale, north arrow, property lines and location map, with zoning district

- designations for the site and adjacent properties.
 - ii. Existing contours per submission requirements.
 - iii. Individual freestanding trees with trunk diameters (DBH) of 6 inches or more shall be shown indicating the location, species, and diameter of each tree.
 - iv. Trees in hedge rows or lines with trunk diameters (DBH) of 6 inches or more indicating the outer canopy or dripline of the tree grouping as well as the location and species of individual trees.
 - v. Trees in forest/woodlands or groves with trunk diameters (DBH) of six inches or more indicating the species and outer canopy or dripline of the tree grouping.
 - vi. Within the plan set, existing trees to remain and existing trees to be removed shall be designated either by indicating individual trunk diameters with an "X" for removal or by cross hatching or similar method to indicate woodlands to be removed.
 - vii. Any subdivision or land development proposal which will result in the destruction of greater than 25 percent of the existing viable non-invasive trees six inches in diameter (DBH) or greater, as determined by a registered landscape architect, shall replace the removed viable non-invasive trees in excess of the 25 percent, as determined by a registered landscape architect; but in no case shall removal of forests exceed those allowed under § 370-503 of the zoning ordinance.
 - viii. The plan shall contain a schedule listing the total number of existing viable non-invasive trees (DBH) over 6 inches in trunk diameter, as determined by a registered landscape architect. When forests are present, the schedule shall differentiate "forest trees" and "non-forest trees". The schedule shall list the maximum number of trees permitted to be removed in compliance with the provisions herein, § 370-503 of the zoning ordinance, the actual number of trees proposed for removal, the number of excess trees being removed, and the number of required replacement trees.
- b. Preliminary landscape plan. The preliminary landscaping plan shall be drawn at a scale of not less than one inch to 50 feet and shall contain the following:
- i. Plan scale, date, North arrow, and location map with zoning district designations for the site and adjacent properties.
 - ii. Location of all existing and proposed buildings.
 - iii. Location of all existing and proposed roads, parking, service areas and other paved areas.
 - iv. Location of all outside storage and trash receptacle areas.
 - v. Sidewalks, berms, fences, walls, freestanding signs and site lighting.
 - vi. Locations, common names, quantity and sizes of all proposed trees, shrubs and areas for lawns or other ground cover (see § 305-329.F.).
 - vii. Locations of existing freestanding trees and woodlands to remain.
 - viii. Sight triangles and sight distance lines.
- c. Submission procedure.
- i. The preliminary landscape plan and existing conditions or features plan shall be submitted at the time the preliminary plan is filed.
 - ii. The landscape plan shall be signed and sealed by a landscape architect registered by the Commonwealth of Pennsylvania.
- F. Public notification.
- (1) The filing of a preliminary plan for a major subdivision or land development within Warrington Township, as determined by requirements of this Ordinance, shall require the owner to notify surrounding property owners by mail of the action and place a sign of notice on the subject premises. The owner shall notify the surrounding property owners of a meeting date and any

other required information at least 14 days prior to the meeting. The Township shall require the owner to notify surrounding property owners of subsequent meetings or hearings following the initial meeting.

- (2) The mailed notice to nearby property owners shall occur at least 14 consecutive calendar days before the public meeting of the Planning Commission when the plan will be first reviewed. Notice shall be by first-class mail, and the owner shall provide the Township with documentation of the mailings prior to the public meeting. Mailed notices shall be required for the following plan types and relevant properties:
 - a. Major subdivision or land development plan. All properties within 500 feet of the application site.
 - b. Nonresidential development plan. All properties within 1,000 feet of the application site.
- (3) The mailed notice shall contain a narrative statement describing the proposed development and include, at a minimum, the name and address of the owner, the parcel number(s) and description of the application site, the number and type of residences and/or buildings being proposed, and a copy of the plan on paper measuring at least 11 inches by 17 inches that shows the proposed improvements and environmentally sensitive areas in different colors and graphic indicators with appropriate legends to clearly illustrate the distinctions between the same.
- (4) For purposes of the mailing notice requirement, distances shall be measured from the nearest part of the application site to any portion of an affected parcel to be notified.
- (5) The sign(s) of notice shall be placed on the application site providing notice of a public meeting for the preliminary plan application. The sign(s) shall be located so as to be in clear view of passers-by and adjacent to the street line(s). If the application site is bordered by more than one public street, a public notice sign shall be placed adjacent to each street line, but in no case shall more than two signs be required. The sign(s) shall be erected within 10 calendar days of the filing of a preliminary plan application with the Township. The owner shall be required to apply for a sign permit from the Township for all signs and the Township Zoning Officer shall determine the sign location requirements for the public notice sign(s) shall be as follows:
 - a. Location. The posted sign(s) shall be placed in a conspicuous location, as close to, but outside, the street line as practical, parallel to the street, and clearly visible to the public. The Township may allow the posting of only one sign on corner lots of less than 4 acres. In no case shall a sign be placed so as to interfere with driver visibility or vehicular safety.
 - b. Size. The posted sign(s) shall be single-faced and shall measure 4 feet by 8 feet with a yellow background with two-inch black lettering in sans serif typeface and shall be weather protected. The top of sign when installed shall be no more than seven feet from the ground under it.
 - c. Sign information. The sign(s) shall include, in bold face type, a narrative statement describing the proposed development including the type of residences and/or building proposed. The owner's name and phone number, the name of the plan, address of development site, the application number and the tax parcel number(s) shall be prominently displayed. A statement that additional information, including an illustrated plan depicting the proposed development, can be obtained from the Township's website. The owner shall be responsible for cleaning or replacing, within 10 days of notification, any sign that has been defaced, becomes illegible, or is removed. The sign will remain in place until final action on the final plan application is taken by the Township. Removal of the sign will be in accordance with § 305-505.F.(5)e..
 - d. Proof of posting. The owner shall provide the Township with photographic proof of posting and a signed affidavit prior to the public meeting. Failure of any such posted notice to remain in place after the notice has been posted shall not be deemed a failure to comply with these

standards or be grounds to challenge the validity of any decision made on the application unless the notice was removed by the owner at their direction.

- e. Removal of posted sign. The owner shall remove the posted sign(s) not later than 10 calendar days after final action on the final plan application is taken by the Township.

§ 305-506. Final plan; major subdivision or land development.

- A. Purpose. The purpose of the final plan is to obtain formal approval from the Board of Supervisors before plans for all subdivisions and land developments are recorded as required by § 305-701 of this Ordinance.
- B. General.
 - (1) The final plan shall be submitted conforming to the conditions of the preliminary plan approval. The final plan and all information and procedures relating thereto shall in all respects be in compliance with the provisions of this Ordinance, except where variation therefrom may be specified, in writing, by the Board of Supervisors.
 - (2) Prior to the recording of any final plan, a Development Agreement, in a form provided by the Township Solicitor, including the posting of financial security to guarantee the completion of all required public and/or site improvements, as defined in Appendix A, shall be executed by the developer.
- C. Deposit and fee. See the Township Fee Schedule.
- D. Procedure. Procedure for approval of final plans shall be identical to the procedure as outlined for preliminary plans in § 305-505, except as noted below:
 - (1) Developer prepares final plan and application.
 - (2) The developer shall submit the required copies of the plan set, application and associated documentation to the Zoning Officer and other entities as required herein. The email address and/or contact information of the developer and the developer's engineer must be included with the application. The required copies to be submitted to the Zoning Officer and the acceptable format of said copies shall be submitted in accordance with the following:
 - a. Two paper copies and one digital copy of the subdivision/land development application.
 - b. Two paper copies and one digital copy of the full plan set.
 - c. 18 paper copies and one digital copy of the partial plan set. Partial plan sets shall consist of a cover page, record plans, existing conditions plan, construction improvements plan, landscaping and lighting plans and associated details, utility plans, stormwater management plans, and any other plans deemed to be necessary by the Zoning Officer.
 - d. 16 paper copies and one digital copy of the conditional use application, if applicable.
 - e. Two paper copies and one digital copy of the traffic impact study, if applicable.
 - f. Two paper copies and one digital copy of the environmental site assessment, if applicable.
 - g. Two paper copies and one digital copy of any other document as required by this Ordinance.
 - (3) Township Zoning Officer, in consultation with the Township Engineer, checks submission against checklist for completeness and;
 - a. If a submission is incomplete, immediately returns submission to developer, indicates the deficiencies and the 90-day review period shall begin only after a completed application is submitted; or
 - b. If submission is complete, accepts final plan submission and fees, and dates and initials the plan.
 - (4) The Township Zoning Officer shall submit one copy of the final plan submission and application with a request for review and comment to the appropriate boards, committees, and commissions. The developer shall follow the submittal procedures established by the various external entities that require plan submissions, such as PennDot, the Bucks County Health Department, the Bucks

- County Conservation District, or the Bucks County Planning Commission.
- (5) At a regular or special Township Planning Commission meeting following receipt of reports from agencies listed above, the Planning Commission shall:
- Review the developer's submission.
 - Review all reports received.
 - Discuss submission with the developer.
 - Evaluate the plan, reports, and discussion.
 - Give interested members of the public the opportunity to discuss and inquire about the plan.
 - Determine whether the final plan submission meets the objectives and requirements of this Ordinance and other ordinances of the Township.
 - Make recommendations to the Board of Supervisors for approval, conditional approval, or disapproval of the final plan.
 - Submit a report to the Board of Supervisors. When the application is not recommended, the recommendation shall specify the defects found in the application, describe the requirements which have not been met, and, in each case, site the specific provisions of the applicable ordinance which have not been satisfied.
- (6) The Board of Supervisors, within the time prescribed in the latest version of the Municipalities Planning Code, shall:
- Reevaluate the developer's submission, presentation, report of the Township Planning Commission and any other applicable reviewing agency.
 - Determine whether the final plans meet the objectives and requirements of this Ordinance and other ordinances of the Township.
 - Give interested members of the public the opportunity to discuss and inquire about the plan.
 - Either approve, conditionally approve, or disapprove the final plan by resolution.
 - Inform the developer of the decision in writing by mail mailed at their last known address not greater than 15 days following the decision. When the application is not approved the decision shall specify the defects found in the application, describe the requirements which have not been met, and in each case cite the specific provisions of the applicable ordinances which have not been satisfied.
- (7) Failure of the Board of Supervisors to render a decision and communicate it to the developer within the time and in the manner required herein shall be deemed an approval of the final plan, unless the developer has agreed in writing to an extension of time or a change in the prescribed manner of communication of the decision, in which case failure to meet the extended time or change in manner of communication shall have like effect.
- (8) If approved:
- The Board of Supervisors shall adopt a resolution approving the final plan.
 - Approval will be conditioned upon the developer entering into a Development Agreement with the Township, prepared by the Township Solicitor, that includes the posting of financial security to guarantee the completion of the public/site improvements that are proposed in conjunction with the subdivision and/or land development, as set forth in Appendix A.
 - Two exact copies of the approved final plan with signatures of the required agencies as specified in Article V, § 305-507.B.(3)c., of this Ordinance shall be submitted as Record Plans to the Board of Supervisors for review and signature.
- E. Submission requirements. The final plan shall be accompanied by the following information, which shall be considered in addition to that required for the preliminary plan submission under § 305-505.
- (1) Drafting standards.
- The plan shall be drawn at a scale of one-inch equals 40 feet, 50 feet, or 100 feet.
 - The plan shall be a clear, legible white paper print.

- c. Dimensions shall be in feet and decimals to the nearest hundredths of a foot, and bearings shall be in degrees, minutes, and seconds.
 - d. Each sheet shall be numbered and shall show its relationship to the total number of sheets.
 - e. The boundary line of the subdivision or land development shall be shown as a solid heavy line.
 - f. Final plans shall be prepared on sheets no larger than 24 inches by 36 inches, and all lettering shall be so drawn as to be legible if the plan should be reduced to half the size.
- (2) General information to be shown.
- a. Name of the subdivision or land development.
 - b. Name and address of the owner/developer.
 - c. Name and address of the engineer, landscape architect, or surveyor responsible for preparation of the plan in accordance with § 503.(1). of the PaMPC.
 - d. Date, North point, and scale.
 - e. A location map for the purpose of locating the site to be subdivided or developed at a scale of not less than one-inch equals 800 feet showing the relation of the tract to the adjoining property and to all streets, roads, and municipal boundaries existing within 1,000 feet of any part of the property proposed to be subdivided or developed.
 - f. Present zoning classification on the subject tract and adjacent properties, and requirements pertaining to the subject tract.
 - g. Name of the current zoning ordinance with the latest revision date and the current subdivision and land development ordinance with the latest revision date.
 - h. All conditions of applicable zoning approval and granted variances.
 - i. All granted waivers.
- (3) Existing features to be shown.
- a. Complete outline survey of the property to be subdivided or developed, showing all courses, distances, areas, property corners (existing monumentation, markers, pins, etc.), and tie-ins to all adjacent street intersections. The outline survey shall be determined by a field boundary survey performed and/or verified within one year of the final plan submission. Complete outline survey of the property to be subdivided or developed showing all courses, distances, and areas and tie-ins to all adjacent street intersections.
 - b. The location, names, classifications and widths of streets, the location of property lines and names of owners, the location of watercourses, sanitary sewers, storm drains and similar features within 400 feet of any part of the land to be subdivided or developed.
 - c. Location, size and ownership of all underground utilities, easements and street lines within the property.
 - d. The location and character of existing buildings, the location, size and species of all large trees standing alone, and the location and general condition of all significant topographic and physical features, including, but not limited to, USGS contours, existing vegetation, natural drainage, trees over 10 inches diameter, forest or wooded areas, wetlands, streams, vernal pools, and prime agricultural land.
 - e. Floodplain restriction overlay area, in compliance with § 370-503 of the zoning ordinance.
 - f. Limits of resource protection areas.
 - g. Limits of environmentally sensitive areas.
 - h. Limits of applicable conservation development and/or open space.
 - i. An aerial photograph of the site with the site boundary identified.
- (4) Proposed layout.
- a. Lot layout, including dimensions and bearings, and consecutive numbering of lots.
 - b. The proposed names, classifications, cartway width and street line width of all proposed streets.

- c. The arrangement of buildings and parking areas in proposed industrial, commercial and multifamily developments with all necessary dimensions noted on the plan.
 - d. Sufficient data to determine readily the location, bearing and length of every street, lot and boundary line.
 - e. The proposed building setback for each lot, or the proposed location of each building.
 - f. Accurate locations of all concrete monuments
 - g. The location, width and purpose of all easements or street lines and boundaries by bearings and dimensions.
 - h. For multifamily dwellings, the total area, total dwelling units, number of buildings, proposed density, total parking spaces, building coverage, and bedroom ratio shall be noted on the plan.
 - i. For projects proposing a development in more than one phase, a phasing plan delineating each phase of development with the above required information noted on the plans for each phase shall be required.
 - j. The location of all existing and proposed fire hydrants and utilities.
 - k. Resource conservation site analysis plan. The resource conservation site analysis plan should overlay the proposed development with the existing conditions of the site and all other existing features of the site required in § 506.E.(3).
- (5) Improvement construction plan requirements;
- a. All horizontal drainage and utility construction plans shall be accompanied by a grading plan with existing contours delineated by a dashed line and proposed contours by a solid line of not less than a 2-foot interval with spot elevations at sufficient locations to review the proposed grade modifications.
 - b. The improvement construction plans shall be at any of the following scales:

Table 13. Improvement Construction Plan Scales.

Improvement Construction Plan Scales	
Horizontal	Vertical
50 feet/inch	5 feet/inch
100 feet/inch	10 feet/inch

- c. The horizontal plan for streets shall show details of the horizontal layout including:
 - i. Center line with bearings, distances, curve data, and stations corresponding to the profile views.
 - ii. Street lines and curblines with radii at intersections.
 - iii. Beginning and end of proposed construction.
 - iv. Tie-ins by courses and distances to intersections with all public roads, with street names and widths.
 - v. Location of all concrete monuments with reference to them.
 - vi. Property lines and ownership of abutting properties.
 - vii. Location and size of all drainage structures, public utilities, and street name signs.
 - viii. Location of sidewalks.
- d. Profile views for streets shall include:
 - i. Profile of existing ground surface along center line of street.
 - ii. Proposed center line grade noting percent on tangents, elevations at fifty-foot station intervals, street center line intersections, and both ends of curb radii.
 - iii. Vertical curve data including length and elevations at 25-foot station intervals.

- e. Cross sections shall include:
 - i. Street line width and location and width of paving.
 - ii. Type, thickness, and crown of paving.
 - iii. Type and size of curb.
 - iv. Grading of street line area, outside of paving.
 - v. Location, width, type, and thickness of sidewalks.
 - vi. Typical location of sewers and other utilities with sizes noted.
 - f. Horizontal plans for storm sewers, water mains and sanitary sewers shall include:
 - i. Location and size of line with stations corresponding to the profile view.
 - ii. Location of manholes or inlets with invert and grate or rim elevations at top of each manhole or inlet.
 - iii. Property lines and ownership, with details of easements where required.
 - iv. Beginning and end of proposed construction.
 - v. Location of water and sewer service laterals.
 - vi. Location of all other drainage facilities and public utilities.
 - g. Profiles for storm drains and sanitary sewers shall include invert elevations and the profile of existing ground surface with elevations at top of manholes or inlets.
 - h. A proposed lighting plan containing:
 - i. Location of driveways, structures, curb and sidewalk.
 - ii. Layout of all proposed utilities (including storm sewer).
 - iii. Proposed tree planting locations coordinated with proposed grading and underground utilities, maintaining required horizontal separation distances.
 - iv. Location of parking area lighting, and streetlight fixtures, with radial extent of illumination in the form of numeric footcandle values in units of footcandles (fc); numeric footcandle values shall be in increments of 0.50 fc.
 - v. The spacing of light poles/pole foundations along streets shall be indicated for all lighting; pole, foundation, and luminaire types shall be noted.
 - vi. Photometry detail indicating coverage area of proposed luminaire and lumens shall be indicated, including a candela numeric lumen output.
 - vii. Details and appropriate manufacturer's information of all lighting and accessory equipment to be used, including fixtures, wattage, fixture height, poles, foundations, and conduit.
- (6) Landscape plan submission requirements.
- a. Final landscape plan. The final landscape plan shall contain a final version of all the plan requirements stated in § 305-505.E.(8).a. and shall further contain the following:
 - i. A plant schedule indicating the botanical and common names, height, spread, caliper, quantity and any special remarks for all plant material proposed.
 - ii. If not provided on a separate plan, a list of existing trees to be removed, existing and proposed water bodies and significant natural features.
 - iii. Details for the planting and staking of trees, the planting of shrubs and any other details which depict other related installation.
 - iv. Existing and proposed underground and aboveground utilities, such as site lighting, transformers, hydrants, manholes, valve boxes, storm, sanitary and water lines, etc.
 - v. All existing and proposed contours at 2-foot intervals; and in order to determine the relationship of planting and grading, areas with slopes in excess of three horizontal to one vertical (33.3 percent) will be indicated on the plan and seeded, sodded or planted with ground cover.
 - vi. Information in the form of notes or specifications concerning planting areas to be

- devoted to lawns. Such information shall convey the proposals for seeding, sodding, ground cover, mulching, and the like.
- vii. A detailed cost estimate shall be attached to the final landscape plan submission, showing the value of all proposed landscaping, and to include all labor, materials, and guarantee.
- b. Submission procedure.
 - i. The final landscape plan shall be submitted at the time the final plan is filed.
 - ii. The landscape plan shall be signed and sealed by a landscape architect registered by the Commonwealth of Pennsylvania.
- (7) Submission of final plans in AutoCAD format. An exact copy of the final subdivision or land development plans shall be submitted in an electronic format, in AutoCAD DWG or DXF format, designated by the Township, as a condition of final plan approval.
- F. Appeal. Appeals shall be in accordance with the provisions of the PaMPC.

§ 305-507. Recording of final plans.

- A. Recording plans. The action of the Board of Supervisors in approving any subdivision or land development plan, together with an approved duplicate copy of such plan shall, within 90 days of the date of approval or 90 days after delivery of an approved plan signed by the Board of Supervisors that complies with the conditions imposed for such approval, whichever is later, be recorded by the Township in the Office of Recorder of Deeds of Bucks County. The developer shall reimburse the Township with the cost of recording plus 10 percent, in accordance with the Township Fee Schedule. The Board of Supervisors may extend the 90-day period upon receipt of a written request submitted by the developer.
- B. Record plan requirements.
 - (1) The record plan shall be clear, legible blue or black line print on white opaque linen or mylar, and shall be an exact copy of the approved final plan on a sheet of the size required for final plans. Two copies of the record plan shall be submitted for Township signatures.
 - (2) The final plans as approved and recorded shall be interpreted to include all information required and approved under § 305-506 of this Ordinance, unless otherwise waived by the Board of Supervisors. All plans, reports, and studies submitted for final approval under § 305-506 of this Ordinance shall be stamped and dated and retained as part of the record set of approved final plans. Changes made at the time of final approval must be dated and recorded with the Township Zoning Officer and noted as revised sheets before building permits are issued.
 - (3) The following information shall appear on the record plan in addition to the information required for a final plan or minor subdivision plan:
 - a. Seals.
 - i. The impressed seal of the licensed engineer, landscape architect or surveyor responsible for the plan in accordance with § 503.(1). of the PaMPC.
 - ii. The impressed corporation seal if the developer is a corporation.
 - iii. The impressed seal of a notary public or other qualified officer acknowledging owner's statement of intent.
 - b. Acknowledgements.
 - i. A statement to the effect that the developer is the owner of the land proposed to be developed and that the subdivision or land development shown on the final plan is made with his/her or their consent and that it is desire to record the same.
 - ii. Acknowledgement of said statement before an officer authorized to take acknowledgements.
 - c. The following signatures shall be placed directly on the plan in black or blue ink.

- i. The signatures of the owner or owners of the land. If the owner of the land is a corporation, the signatures of the president and secretary of the corporation shall appear.
 - ii. The signatures of the notary public or other qualified offices acknowledging the owner's intent.
 - iii. The signature of the licensed engineer, landscape architect or surveyor who prepared the plan in accordance with § 503.(1). of the PaMPC.
 - iv. The review number assigned by the County Planning Commission.
 - v. The signature of the Township Engineer.
 - vi. The signature of the Chairperson and Secretary of the Township Board of Supervisors.
- C. Effect of recording.
 - (1) After a subdivision or land development plan has been duly recorded, the streets, parks and other public improvements shown thereon shall be considered to be a part of the Official Map, when adopted, of the Township.
 - (2) Streets, parks and other public improvements shown on a subdivision or land development plan to be recorded may be offered for dedication to the Township by formal notation thereof on the plan, or the owner may note on the plan that such improvements have not been offered for dedication to the Township.
 - (3) Every street, park or other improvement shown on a subdivision or land development plan that is recorded, as provided herein, shall be deemed to be a private street, park, or improvement until such time as the same has been offered for dedication to the Township and accepted, by resolution, or until it has been condemned for use as a public street, park, or other improvement.

§ 305-508. Applications involving modifications or additions to already recorded plans.

- A. Any such plan shall be submitted as an amended final plan or subdivision plat.
- B. The area where modifications or additions are proposed shall be delineated as the “project area” on a copy of the recorded plan or subdivision. The project area shall include all proposed work and shall be subject to the approval of the Township.
- C. The application shall meet all of the requirements of this Ordinance for all work proposed within the project area. Full detail shall not be required for existing work outside the project area.
- D. Zoning and subdivision and land development requirements, in effect at the time of application, shall apply within the project area but not otherwise.
- E. The application shall be accepted, reviewed, approved, and recorded fully in accordance with the requirements of this Ordinance, but only as to the project area.

§ 305-509. Acceptance of streets and improvements by Township.

- A. Inspection.
 - (1) The developer shall notify the Board of Supervisors in writing by certified or registered mail of the completion of the required improvements and shall send a copy to the Township Engineer.
 - (2) The Board of Supervisors shall, within 10 days after receipt of such notice, direct and authorize the Township Engineer to inspect all of the aforesaid improvements.
 - (3) The Township Engineer shall:
 - a. Inspect the completed required improvements.
 - b. File a report, in writing, with the Board of Supervisors, and mail a copy of the same to the developer by certified or registered mail, within 30 days after receipt by the Township Engineer of the aforesaid authorization from the Board of Supervisors. Said reports shall be detailed and shall indicate approval or rejection of said improvements, either in whole or in part, and if said improvements or any part thereof shall not be approved or shall be rejected

by the Township Engineer, said report shall contain a statement of the reasons for such nonapproval or rejection.

- (4) If the Board of Supervisors or Township Engineer fails to comply with the time limitations 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. The developer shall proceed to complete said improvements to Township requirements and, upon completion, the same procedure of notification as outlined herein shall be followed.
- (5) In the event that any improvements which may be required have not been installed as provided in this Ordinance or in accordance with the approved final plan, the Board of Supervisors is hereby granted the power to enforce any corporate bond or other security by appropriate legal and equitable remedies. If proceeds of such bond or other security are insufficient to pay the cost of installing or making repair or corrections to all the improvements covered by said security, the Board of Supervisors may, at its option, install part of such improvements in all or part of the subdivision or land development and may institute appropriate legal or equitable action to recover the monies necessary to complete the remainder of the improvements, including court costs and attorney fees. All of the proceeds, whether resulting from the security or from any legal or equitable action brought against the developer, or both, shall be used solely for the installation of the improvements covered by such security, and not for any other municipal purpose.

B. Acceptance.

- (1) The Board of Supervisors shall notify the developer of acceptance of the required improvements if satisfied that the developer has complied with all specifications and ordinances of the Township.
- (2) The developer shall:
 - a. Furnish the Township with one electronic copy of the plans clearly showing the improvements.
 - b. Pay all costs for the Recorder of Deeds and/or Clerk of Court for the recording and/or registration of the approval and acceptance of the required improvements.

§ 305-510. Disclosure requirements.

- A. Applicability. This section shall apply to the seller (the "seller") of a vacant subdivided residential lot or a newly constructed home located within Warrington Township ("dwelling unit not previously occupied") to a member of the general public (the "buyer").
- B. Intent. These requirements are intended to inform the buyer of important facts pertaining to the new residential property including, but not limited to, the general nature of the subdivision and/or land development project (the "project") in which the new residential property is located.
- C. Disclosure requirements.
 - (1) Prior to the seller conveying to the buyer title to any dwelling units not previously occupied, the buyer shall sign a residential disclosure statement in a form provided by the Township ("disclosure statement") which verifies that the seller has complied with this section and has provided, shown and/or reviewed with the buyer all of the information that is required by this section. The developer shall provide the completed disclosure statement, found in § 305-510.D., to the seller and a copy of the completed disclosure statement to the Township. The disclosure statement shall be reviewed for accuracy and completeness by the Township Solicitor and Township Engineer prior to being provided to any prospective buyer.
 - (2) The approved subdivision and/or land development plan for all phases of the project ("approved plan") shall be made available for inspection by the buyer in the location where property sales are transacted by the seller. The approved plan shall include the record plan and all other accompanying plans approved with the record plan by Warrington Township.

- (3) A copy of the most recent approved plan shall be made available to the buyer for inspection and a full-size copy of the record plan, plot plan, and as-built plan shall be provided to the buyer. The approved plan and text narrative shall contain the following information:
- a. Common areas, such as parklands, streets and open spaces which are part of the project.
 - b. All lot lines.
 - c. Membership in a common ownership regime such as a homeowners' or condominium association, if applicable. Copies of the declaration documents and bylaws shall be provided to the buyer prior to the buyer's signing an agreement of sale.
 - d. All current dimensional requirements for the primary uses of each dwelling unit not previously occupied, such as lot size and required setbacks, building coverage, impervious coverage, area available for future impervious coverage, height limitations and deed restricted areas.
 - e. All current dimensional requirements for the accessory uses permitted on each lot, such as lot size, required setbacks, height limitations and deed restricted areas.
 - f. The location of all easements encumbering each dwelling unit not previously occupied, describing the uses of the easements, including any underground pipe within such easement (including, but not limited to, sanitary sewer, storm sewer, water, gas, cable television and electric lines), a description as to which dwelling units not previously occupied are affected by these easements and the limitations imposed by such easements.
 - g. The location of all areas which are classified as wetlands by current governmental law, rule, regulation or ordinance, with a notation that such federal, state and local laws and regulations govern the use of property within wetlands, which may limit the use and development of such areas.
 - h. The location of all areas classified as floodplain or other resource conservation areas by current governmental law, rule, regulation or ordinance, with a notation that such federal, state and local laws and regulations govern the use of property within such areas, which may limit the use and development of such areas.
 - i. The location of stormwater management facilities, including detention/retention basins, stormwater management easements and the ownership and maintenance responsibilities for such facilities and easements.
 - j. The date of the zoning and/or subdivision and land development ordinances which govern the approved plan shall be made available to the buyer. If the approved plan is governed by a court order or stipulation, such documentation, including all amendments, shall be made available to the buyer.
 - k. The present zoning classification of the project and property which abuts the project.
- (4) The buyer of a dwelling unit not previously occupied which is located within 100 yards of a natural gas transmission line must be informed, in writing, of the existence, location and owner of the natural gas transmission line.
- (5) The buyer of a lot that was the subject of a minor subdivision must be informed that pursuant to § 305-504.F. of this Ordinance, any additional subdivision of a tract that is the subject of a minor subdivision plan within 10 years of the date of approval of the minor subdivision plan shall be deemed to be a major subdivision for the purposes of this Ordinance and shall follow the procedure applying thereto.
- D. Buyer responsibility. The buyer shall be responsible to review the subdivision and/or land development plan, the developer agreement, and the building permit plan. The buyer shall be responsible to become informed about existing conditions within the neighborhood of the lot and the vicinity of the subdivision or land development that may affect the buyer's unique lifestyle requirements.

Sample**Warrington Township Residential Disclosure Statement**

Buyer's Name: _____

Address: _____

Lot No.: _____ Development Name: _____

Please initial next to each of the following categories to verify that the required information was made available for your review by the developer.

Initial below:

- | | | |
|-------|----|---|
| _____ | 1. | I have been advised that site plans, permit history and inspections for my property are available from Warrington Township. |
| _____ | 2. | I have been provided a copy of the most recent approved plan, a full-size copy of the record plan, plot plan, and as-built plan with corresponding text narrative containing all required information, as stated in Section 305-510.C. of the subdivision and land development ordinance. |
| _____ | 3. | I have been advised that a copy of the record plan, and all recorded revisions are available for review at the Office of the Bucks County Recorder of Deeds, Doylestown, PA. |
| _____ | 4. | I have been informed that an agreement exists between the Township and the developer that governs development of the property. This document can be reviewed at the Warrington Township Building. |
| _____ | 5. | I have received a copy of the Warrington Township General Location/Information Map. |
| _____ | 6. | I have been informed of all zoning relief and waivers granted. |

Buyer _____

Seller or Authorized Agent _____

Buyer _____

Date _____

Date _____

**Article VI
Administration****§ 305-601. Waivers.**

- A. The Board of Supervisors may grant a waiver of the requirements of one or more of the provisions of this Ordinance if the literal enforcement will exact undue hardship because of peculiar conditions pertaining to the land in question, provided that such waiver or waivers will not be contrary to the public interest, Comprehensive Plan or the purpose and intent of this Ordinance. The burden of responsibility of proof of hardship shall be on the developer and/or landowner. Financial hardship alone shall not be sufficient proof of undue hardship.
- B. All requests for waivers shall be in writing and shall accompany and be a part of the application for subdivision and/or land development. The request shall state in full the grounds and facts of unreasonableness or hardship on which the request is based, the provision or provisions of this Ordinance involved and the minimum modification necessary. The Township shall keep a written record of all actions taken on requested waivers. The list of approved waivers must be included on the record plans.
- C. In granting waivers, the Board of Supervisors, with the advice from the Township Planning Commission and Township Engineer, may require such conditions as will, in its judgement, secure substantially the objectives of the requirements so waived.

§ 305-602. Fees and deposits.

- A. Dollar amount of fees specified in this section can be found on the latest Township Fee Schedule approved by resolution by the Board of Supervisors.
- B. The owner shall pay to the Township reasonable fees for the Township's professional consultants incurred by the Township, including review fees for the services of the Township Engineer incidental to the examination and other work incidental to the approval of each subdivision or land development application or section thereof. In addition, the fees for professional consultants shall also include reasonable legal fees incurred by the Township for legal services incidental to the preliminary and final approvals of such applications or sections thereof and the drafting of the contracts and bonds required in Appendix A of this Ordinance. The owner shall also pay for legal services required by the Township which may arise by reason of the approval of such applications of each subdivision or land development, or section thereof, inclusive of the cost of legal services, incidental to the final acceptance by the Township of the streets laid out on the subdivision and/or land development.
- C. The fees for professional consultants required to be paid by this Ordinance shall be promptly paid to the Township by the owner upon the submission of invoices thereof by the Township to the owner, unless the fees are challenged in accordance with the provisions in §§ 503.(1)(ii) and 510.(g) of the PaMPC.
- D. The fees for professional consultants required to be paid to the Township, shall include a percentage (according to the Township Fee Schedule) for administrative cost, which the owner shall pay to the Township as reimbursement for the costs incurred by the Township for administration and disbursement of such fees to the professional consultants.
- E. A deposit in accordance with the Township Fee Schedule shall be required at the time of submission of the preliminary and final applications in order to address the fees for professional consultants incurred during review and approval of subdivision or land development plan applications.
- F. The owner shall pay all fees incurred by the Township related to the recording of the approved subdivision or land development plans.

§ 305-603. Inspection by Township Engineer.

- A. 14 days prior to the commencement of any operation in the construction or installation of streets, curbs, sidewalks, drainage of streets, curbs, or sidewalks, drainage facilities, water and sewer facilities, street signs, monuments, or capped sewers, the owner shall notify the Township Engineer, who shall inspect the work, materials, construction, and installation as to Township requirements.
- B. The Township Engineer shall be authorized to have such tests of materials made as are specified in this Ordinance and the PennDOT Publication 408 Specifications, as amended, in order to have proper control of materials. The owner shall pay to the Township the cost of such tests plus an administrative percentage according to the Township Fee Schedule to reimburse the Township for the collection of such fees and disbursement of same to the Township Engineer.

Article VII

Jurisdiction and Penalties

§ 305-701. Jurisdiction.

A. Subdivision and land development control.

- (1) It shall be unlawful for the owner of any parcel of land in the Township or any other person, firm or corporation, to subdivide any lot, tract, or parcel of land or to lay out, construct, open, or dedicate for public use or travel or for the common use of occupants of buildings within a subdivision or land development, any street, sanitary sewer, storm sewer, drainage facilities, or other facilities in connection therewith, unless and until final plans of such subdivision or land development shall have been prepared by a licensed land surveyor, engineer, or landscape architect, in accordance with § 503.(1). of the PaMPC, submitted to and approved in writing thereon by the Board of Supervisors, and recorded in the Bucks County Recorder of Deeds Office in Doylestown, Pennsylvania.

B. Sale of lots; issuance of building permits; erection of buildings.

- (1) No lot in a subdivision may be sold, and no permit to erect, alter, or repair any building upon land in a subdivision or land development may be issued unless and until the public improvements required by the Board of Supervisors in connection therewith have either been constructed or guaranteed as specified in this Ordinance.
- (2) No building in a subdivision or land development shall be permitted to be occupied before improvements are sufficiently completed to the satisfaction of the Township Engineer, such as improving existing paved streets to and across the frontage of the parcel or lot on which the building is located, and/or to a sufficient depth along the side of the lot to service any driveway, driveways, or parking spaces.
- (3) No building requiring public water and sewer service shall be permitted to be occupied before any associated public water and sewer facilities are fully provided and operational.

§ 305-702. Penalties.

A. Preventive remedies.

- (1) In addition to other remedies, the Township may institute and maintain appropriate actions by law or in equity to restrain, correct or abate violations, to prevent unlawful construction, to recover damages and to prevent illegal occupancy of a building, structure, or premises. 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.
- (2) The Township 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 or development of real property in violation of this Ordinance. This authority to deny such a permit or approval shall apply to any of the following developers:
 - a. The owner of record at the time of such violation.
 - b. 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.
 - c. 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.
 - d. 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.

- (3) As an additional condition for issuance of a permit or the granting of an approval to any such owner, current owner, vendee, or lessee for the development of any such real property, the Township may require compliance with the conditions that would have been applicable to the property at the time the developer acquired an interest in such real property.
- B. Enforcement remedies.
- (1) Any person, partnership, corporation, or other entity who or which has violated the provisions of this Ordinance shall, upon being found liable in Magisterial District Court therefor in a civil enforcement proceeding commenced by the Township, pay a judgment of not more than \$500 for each such violation per day plus all court costs, including reasonable attorneys' fees incurred by the Township as a result thereof. No judgment shall commence or be imposed, levied or payable until the date of the determination of a violation by the Magisterial District Judge. If the defendant neither pays nor timely appeals the judgment, the Township may enforce the judgment pursuant to the applicable rules of civil procedure. Each day that a violation continues shall constitute a separate violation, unless the Magisterial District Judge determining that there has been a violation further determines that there was a good-faith basis for the person, partnership, or corporation violating this Ordinance to have believed that there was no such violation, in which event there shall be deemed to have been only one such violation until the fifth day following the date of the determination of a violation by the Magisterial District Judge, and thereafter each day that a violation continues shall constitute a separate violation.
 - (2) The Court of Common Pleas, upon petition, may grant an order of stay, upon cause shown, tolling the per diem judgment pending a final adjudication of the violation and judgment.
 - (3) Nothing contained in this section shall be construed or interpreted to grant to any person or entity other than the Township the right to commence any action for enforcement pursuant to this section.
 - (4) Magisterial District Judges shall have initial jurisdiction in proceedings brought under this section.
- C. Approval. Upon approval by the Board of Supervisors of the subdivision and/or land development plans, and the completion of all applicable public and/or site improvements to the extent determined necessary at the sole discretion of the Township, the developer shall thereupon apply for a building permit. Payment to the Township for the building permit shall accompany the application. If said documents are in proper form and the applicable fees submitted by the developer is approved by the Township, the building permit will then be issued by the Township.
- D. Time limit for construction. All construction improvements must be completed within the timeframe established within the Development Agreement pertaining to the subdivision and/or land development.
- E. Completion certificate. After satisfactory completion of the work, the financial security posted in conjunction with the Development Agreement for any subdivision and/or land development will be released by the Board of Supervisors based upon recommendations provided by the Township Engineer.

Appendix A

Required Contracts

- A. Contracts. Before the Board of Supervisors shall approve the final plans of any subdivision or land development (except in the case of minor subdivision wherein the supervisors impose no condition or conditions for the approval of the plan), and as a requirement for the approval thereof, the developer shall enter into a written agreement with the Township in the manner and form set forth by the Township solicitor where they shall agree:
- (1) To construct, or cause to be constructed, at the developer's expense, all streets, curbs, sidewalk, fire hydrants, streetlights, drainage facilities, water and sewer facilities, street signs, monuments, capped sewers, parks, and other improvements shown on said final plan, when required to do so by the board of supervisors, in accordance with the final plans, as finally approved, and in strict accordance with the standards and specifications of the Township.
 - (2) To maintain, at the developer's cost, the said streets, curbs, sidewalks, drainage facilities, water and sewer facilities, street signs, parks, monuments, fire hydrants, streetlighting, capped sewers and other improvements, until the same are accepted or condemned by the Township for public use; and for a period of 18 months thereafter to repair and reconstruct the same or any part or one of them, when such repair or reconstruction shall be specified by the Township Engineer as necessary by reason of faulty construction, workmanship, or materials, and at, or before, acceptance of such improvements by the Township.
 - (3) To install, or cause to be installed, at the developer's expense, without any cost to the Township, for any part of such installation, streetlighting facilities on all streets within and abutting the subdivision and/or land development.
 - (4) To pay all costs, charges, or rates of the utility furnishing electric service for the lighting of the streets on or abutting said subdivision, from the lights installed by the developer, until such time as the streets shown on the subdivision and/or land development plans shall be accepted as public streets of the Township by resolution filed with the clerk of court or condemnation proceedings, and to indemnify and save harmless the Township from and against all suits, actions, claims, and demands for electric service to the streets shown on said plans, or any part thereof, to the time that the said streets shall be accepted as public streets of the Township in the manner hereinabove set forth.
 - (5) To pay for the inspection fees required by § 305-602 of this Ordinance.
 - (6) To obtain the easements and releases required, at their own cost, when any street, drainage facility, or other improvement in a subdivision abuts or traverses lands of persons other than the person holding legal title to the lands of the subdivision and/or land development; and to obtain from the owner of the lands so abutted or traversed full releases from all damages which may result from the construction of or other changes in the street, drainage facility, or other improvements. Such releases shall inure to the benefit not only of the developer of the subdivision and/or land development but of the Township as well.
 - (7) To promptly remove, or cause to be removed, snow from the streets as may be required for safe traverse of the streets prior to dedication.
 - (8) To promptly reimburse to the Township professional consultant fees as specified in § 305-602 of this ordinance.
- B. Improvement guaranty.
- (1) In order to assure the Township that the streets, drainage facilities, water and sewer facilities, curbs, sidewalks, street signs, fire hydrants, streetlighting facilities, monuments, parks, capped sewers and other improvements shown on the final plans will be constructed and installed in strict accordance with the plans, as finally approved, and with the standards, regulations and

specifications of the Township, and will be maintained until accepted or condemned by the Township, the developer shall furnish to the Township a letter of credit, a bond with such surety or cash as the board of supervisors shall approve; and they shall deposit with the Township an amount sufficient to cover the cost of all improvements until the same shall be accepted by the Township, as estimated by the Township Engineer, plus 10 percent thereof. In addition, the developer will pay all legal expenses and engineering fees incurred by the Township related to the subdivision and/or land development and shall pay a percentage thereof, established by the Township fee schedule, to the Township for administration costs.

- (2) In lieu of posting bond or depositing securities as above provided, the developer may elect to deposit with the Township funds in an equivalent amount to be held in escrow in accordance with the terms of a written escrow agreement prepared by the Township Solicitor which shall be entered into by the developer, the Township, and the escrow agent, if any. Such escrow agreement shall provide that, as the work of constructing the required public improvements progresses, the Township or escrow agent holding said funds will release and refund to the order of the developer from the funds deposited sums equivalent to the estimated value of work completed less a 10 percent retainer. These monies will be released upon delivery of a certificate of completion signed by the developer, the Township Engineer, and the Township Manager. Otherwise, the funds shall be held by the Township in the event the developer fails or neglects to perform the terms provided for under Subsection B.(1) hereof.
- (3) After the developer has completed all of the improvements required by said escrow agreement and has received the final payment provided under the agreement and, under the aforementioned procedure, after the Board of Supervisors has accepted the streets, facilities and other improvements as public streets, facilities and improvements in the manner provided in § 305-509 of this ordinance, the 10 percent remaining in the fund shall be released to the developer and an alternate form of financial security in the amount of 15 percent of the public improvements costs serve to guaranty the maintenance, repair or reconstruction of these improvements by the developer for a period of 18 months thereafter, as required under the provisions of Subsections A.(2) and B.(2) herein shall be posted with the Township. Upon faithful compliance with those provisions, the remaining fund will be released and refunded to the developer upon adoption of a resolution by the Board of Supervisors.
- (4) The improvement guarantee, whether in the form of letter of credit, bond, or deposit agreement, shall be conditioned upon:
 - a. The developer constructing and installing, or causing to be installed, in accordance with the final plans, as finally approved, and with the Township standards and specifications, the streets, drainage facilities, water and sewer facilities, curbs, sidewalks, street signs, lighting facilities, monuments and parks, capped sewers and other such improvements, shown on the approved final plans, as the board of supervisors may require the developer to construct or install.
 - b. The developer maintaining at his own cost, the said streets, curbs, drainage facilities, water and sewer facilities, sidewalks, street signs, parks, monuments, capped sewers and other improvements until the same are accepted or condemned by the Township for public use and for a period of 18 months thereafter, repairing and reconstructing the same or any part of one of them when such repair or reconstruction shall be specified as necessary, by reason of faulty construction, by the Township Engineer.
 - c. The payment, by the developer, of the cost of lighting the streets in the subdivision and/or land development until they are accepted as Township streets by resolution of the board or by condemnation proceedings.

- d. The payment of the inspection fees and all other fees and expenses incurred by the Township as required by this ordinance.
- e. The faithful performance by the owner of the contract provided for in this ordinance.

Appendix B

Street Name and Classification

A. General.

- (1) Street names. Developers planning to install new streets should check with the Township Manager to ascertain the names of any new streets accepted by the Township after January 1970 to avoid a duplication of street names.
- (2) Dedication of street line. For all new construction along existing Township-owned roads, the land between the present and the future street line should be dedicated to the township.
- (3) Future street line.

Table 14. Existing and Future Street Lines

Street Classification	Existing and Future Street Lines (feet)
Arterial streets	
Easton Road	120
All other arterial streets	100
Collector streets	60
Primary streets	60
Secondary streets	50
Residential streets	50
Cul-de-sac streets	50
Alleys	20

- (4) Building setbacks. See the Zoning Ordinance for specific district and use setbacks.

- (5) The hierarchy classification of all existing streets within the township shall be as illustrated on the Township Street Classification Map.

- B. Township Street Classification Map. The Township Street Classification Map is intended as supporting material and shall be used as a reference in determining the line from which all future property setbacks are measured. The existing and future street lines shown on the map shall be in accordance with the existing and future street lines shown on Table 14 herein. If a discrepancy were to occur between the provisions on Table 14 and the Township Street Classification Map, then the provisions of Table 14 shall govern.

Appendix C**Certifications Required for Subdivision or Land Development Plans****General**

In most instances, all final subdivision or land development plan approvals will require each of the following certifications (unless the conditions or circumstances of the final plan dictate an alternative form of certification):

1. Professional engineer's or land surveyor's certification
2. Owner's certification of intent or corporation's certification of intent
3. Approval of the Board of Supervisors of Warrington Township
4. Approval of the Township Engineer
5. Review by the Bucks County Planning Commission
6. Certification of recordation by the Recorder of Deeds, Bucks County, Pennsylvania
7. Certification of mortgage status or consent for recordation by mortgagee
8. Certification of true ownership of land involved
9. Township waiver of responsibility

These certifications shall appear on all final plans to be recorded and shall be presented in the following descriptive wording (or alternative wording acceptable to the Township Solicitor).

1. Professional engineer's or land surveyor's certification.

I, _____, a Registered Professional Engineer (or Registered Professional Land Surveyor) of the Commonwealth of Pennsylvania, do hereby certify that this plan correctly represents a survey made and/or verified by me; that the monuments shown hereon exist as located; and the metes and bounds, as shown, and plotted by me for the owners or agents.

I further certify that this plan meets the requirements of all ordinances affecting this subdivision or land development plan, including the zoning ordinance of the Township of Warrington, as amended, in which this subdivision or land development is located.

(Registered Professional Engineer)

(Registered Surveyor)

(Registration Number)

2. Owner's certification of intent.

Know all persons by these presents, that (I, we) _____ being residents of _____, Commonwealth of Pennsylvania, for (myself, ourselves), (my, our) successors and assigns, do hereby adopt this as (my, our) plan of lots (or land development plan) of (my, our) property, situate in the Township of Warrington, County of Bucks, Commonwealth of Pennsylvania and for diverse advantages accruing to (me, us), do hereby dedicate forever (or offer to dedicate forever), for public use for highway purposes, all drives, roads, streets, lanes and ways and other public highways shown upon the plan, with the same force and effect as if the same had been opened through legal proceedings and in consideration of the approval of said plan by the Township of

Warrington and any future acceptance of said public highways by Township of Warrington. (I, we) hereby covenant and agree to and by these presents do hereby release and forever discharge the Township of Warrington, their successors, and assigns, from any liability for damages arising and to arise from the appropriation of said ground for public highways and the physical grading thereof to any grades that may be established, and any slopes required for the support and maintenance thereof according to such established grades. The dedication and release shall be binding upon (name), (my, our) heirs, executors, administrators, successors, and assigns and purchases of lots in this plan.

IN WITNESS WHEREOF, the said individual(s) have executed this certificate, this day of _____, A.D. 20____.

Property Owner

COMMONWEALTH OF PENNSYLVANIA: COUNTY OF _____:

ON THE _____ DAY OF _____, 20____, BEFORE ME THE SUBSCRIBER, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, PERSONALLY APPEARED _____, WHO ACKNOWLEDGED THIS PLAN TO BE THE OFFICIAL PLAN OF LOTS AND PROPERTY SHOWN THERETO SITUATED IN THE TOWNSHIP OF WARRINGTON, COUNTY OF BUCKS, COMMONWEALTH OF PENNSYLVANIA, AND DESIRED THAT THIS PLAN BE RECORDED ACCORDING TO LAW.

WITNESS MY HAND AND NOTARIAL SEAL THIS _____ DAY OF _____, 20____.

NOTARY PUBLIC
(SEAL)

MY COMMISSION EXPIRES: _____

Know all persons by these presents, that I _____ as the President of _____ (Corporation, partnership, limited partnership, limited liability company), for and on behalf of the Company, its successors and assigns, do hereby adopt this as the plan of lots (or land development plan) of its property, situate in the Township of Warrington, County of Bucks, Commonwealth of Pennsylvania and for diverse advantages accruing to (me, us), do hereby dedicate forever (or offer to dedicate forever), for public use for highway purposes, all drives, roads, streets, lanes and ways and other public highways shown upon the plan, with the same force and effect as if the same had been opened through legal proceedings and in consideration of the approval of said plan by the Township of Warrington and any future acceptance of said public highways by Township of Warrington. I, on behalf of _____ hereby covenant and agree to and by these presents do hereby release and forever discharge the Township of Warrington, their successors, and assigns, from any liability for damages arising and to arise from the appropriation of said ground for public highways and the physical grading thereof to any grades that may be established and any slopes required for the support and maintenance thereof according to such established grades. The dedication and release shall be binding upon _____ its heirs, executors, administrators and assigns and purchases of lots in this plan.

IN WITNESS WHEREOF, the said corporation has caused its corporate seal to be affixed by the hand of its president and same to be attested by its secretary, this _____ day of _____, A.D. 20_____.

(Name of Corporation)

(President)

ATTEST:

Secretary

COMMONWEALTH OF PENNSYLVANIA: COUNTY OF _____:

ON THE _____ DAY OF _____, 20_____, BEFORE ME THE SUBSCRIBER, A NOTARY PUBLIC OF THE COMMONWEALTH OF PENNSYLVANIA, PERSONALLY APPEARED _____, WHO ACKNOWLEDGED HIMSELF/HERSELF TO BE THE PRESIDENT OF _____ AND THIS PLAN TO BE THE OFFICIAL PLAN OF LOTS AND PROPERTY SHOWN THERETO SITUATED IN THE TOWNSHIP OF WARRINGTON, COUNTY OF BUCKS, COMMONWEALTH OF PENNSYLVANIA, AND DESIRED THAT THIS PLAN BE RECORDED ACCORDING TO LAW.

WITNESS MY HAND AND NOTARIAL SEAL THIS _____ DAY OF _____, 20_____.

NOTARY PUBLIC
(SEAL)

MY COMMISSION EXPIRES: _____

3. Approval of the Board of Supervisors of Warrington Township.

This subdivision (land development) plan was approved by resolution of the Board of Supervisors of Warrington Township this _____ day of _____, 20_____.

Chairperson

ATTEST:

Township Secretary

4. Approval of the Township Engineer, Warrington Township.

This subdivision (land development) plan was approved by _____, P.E., the appointed Township Engineer for Warrington Township on this _____ day of _____, 20__.

Township Engineer

5. Review by the Bucks County Planning Commission.

This subdivision (land development) plan was reviewed by the Bucks County Planning Commission on the _____ day of _____, 20__.

Bucks County Planning Commission Review Number _____

Chairperson

Director

6. Certification for recording.

This subdivision (land development) plan was recorded in the office of Recorder of Deeds for Bucks County, at Doylestown, Pennsylvania, this _____ day of _____, 20__.

By: _____
Recorder of Deeds

7. Certification of mortgage status.

(I, We), _____ (owner, owners) of the (name of subdivision or land development) shown hereon, do hereby certify there is no mortgage, lien, or encumbrance against this property.

Owner

or

(I, We) _____ mortgagee of the property embraced in this subdivision (land development) plan, (name of plan) do hereby consent to the recording of said plan in the Recorder's Office of Bucks County, Pennsylvania, and to the dedications and covenants appearing thereon.

(Mortgagee)

Witness

(Date)

8. Certification of true ownership.

(I, We), _____ (owner, owners) of the (name of subdivision or land development plan) do hereby certify that the title of the property is in the name of _____, as recorded in Deed Book Vol. _____, Page _____, Recorder of Deeds Office.

(Owner)

Witness

9. Township waiver of responsibility.

The Township of Warrington hereby gives public notice that in approving this plan for recording purposes only, the Township assumes no obligations, legal or otherwise, express or implied, either to accept said streets as Township streets or roads or grade, pave and curb the streets in said plan, or to construct sewers therein or to install any other such service ordinarily installed in Township streets or roads.

Chairperson, Board of Supervisors

Appendix D

Construction Specifications

The following design and construction specifications shall be used where applicable in addition to those specified in PennDOT's Publication 408, Form 409, and Road Construction (RC) Standards, as amended. All references to PennDOT's standards shall include Publication 408, Form 409 and Road Construction Standards, as amended, where applicable.

A. Materials.

- (1) Unless otherwise approved or specified by the Township Engineer, only new materials shall be incorporated in the work. Materials shall conform, when applicable, to those specified by the PennDOT Standards and shall be obtained from suppliers who are listed within the current certified and approved list of suppliers from PennDOT.
- (2) All materials furnished by the developer's contractor to be incorporated in the work shall be subject to the inspection and approval of the Township Engineer. No material shall be processed or fabricated for or delivered to the site of the work without prior approval of the Township Engineer. Prior to the start of construction, the contractor shall submit to the Township Engineer data relating to materials proposed to be used in the public improvements construction for review and approval. Such data shall be in sufficient detail to enable the Township Engineer to identify the particular product in question and to form an opinion as to its conformity to Township specifications. Defective materials shall be immediately removed from the site of the work at the developer's expense. If the Township Engineer so requires, either prior to beginning, or during the progress of the work, the contractor shall submit samples of the materials or shall perform such special tests as may be necessary to demonstrate that they conform to the Township specifications. The developer's contractor shall place their orders sufficiently early to permit consideration, inspection, testing, and approval before the materials are necessary for incorporation in the work.

- B. Handling and distribution of materials. The developer's contractor shall, at their own expense, handle, haul and distribute all materials and all surplus materials on the different portions of the work as required. The developer's contractor shall provide suitable and adequate storage room for materials during the progress of the work and shall be responsible for any loss of or damage to materials furnished or accepted by them until the final acceptance of the work.
- C. Lines, grades, measurements. The developer's contractor shall make all measurements and check all dimensions necessary for the proper construction of the work called for by the approved final plans, and during the prosecution of the work they shall make all necessary measurements to prevent misfitting in said work, and they shall be responsible therefor and for the accurate construction of the public improvements.
- D. Precautions during adverse weather. During adverse weather, the developer's contractor shall take all necessary precautions so that the work may be done properly and satisfactorily in all respects. When required, protection shall be provided by use of tarpaulins or other approved protective materials. During cold weather, materials shall be preheated, if required, and the materials and adjacent structure in which they are to be incorporated shall be made and kept sufficiently warm so that a proper bond will take place and proper curing, aging, or drying will result.
- E. Temporary heat. If temporary heat is required for the protection of the work, the developer's contractor shall provide and install approved heating apparatus and shall provide adequate and proper fuel to maintain climate as required. Temporary heating apparatus shall be installed and operated in such manner that the finished work will not be damaged thereby in accordance with the Fire Code.

- F. Water supply for construction. All water used for concrete work, curing of concrete, and all other construction purposes shall be clean and free from alkali, iron, sugar, oil, vegetable matter, and other substances injurious to the final product. Untreated raw water will not be permitted for these purposes.
- G. Use of explosives. In the event blasting or the use of explosives is required during construction, approval and all necessary permits shall be obtained from the Township and all applicable regulatory agencies prior to its use. The location, extent, purpose, time, and quantity of explosives to be used shall be subject to said approval and/or applicable sections of PennDOT standards.
- H. Plain cement concrete aprons.
 - (1) Driveway aprons shall be constructed at all private driveways within residential areas. Such driveway aprons shall be constructed within the limits which extend between the sidewalk edge nearest to the street pavement and the back edge of the curb nearest to the adjacent sidewalk. The minimum width of the apron shall be 10 feet, and the maximum width shall be 20 feet, with 3 feet transitions on each side of the depression. The depth of plain cement concrete apron pavements shall be 6 inches and shall include reinforcing mesh.
 - (2) The concrete shall be Class A concrete obtained from approved suppliers conforming to that specified in PennDOT specifications.
 - (3) The subgrade shall be excavated to the depth, width, and length hereinabove specified and the bottom of the excavated subgrade shaped uniformly and compacted to the required limits.
 - (4) Forms for the concrete drive aprons shall be set true, free from warps and bends, securely braced, and sufficiently watertight to prevent loss of water contained within the concrete.
 - (5) Concrete shall be placed, spread, and finished as specified in PennDOT specifications.
 - (6) Curing of concrete, removal of forms, backfilling and restrictions stipulated due to inclement weather shall be as specified in PennDOT specifications.
- I. Driveway entrances. All driveway entrances shall be newly poured-in-place depressed curb sections in accordance with Subsection J.(1) below. Removing the top edge of existing curbing is prohibited. Minimum length of replaced driveway depressed curb shall be the driveway width plus 3 feet on each side of the driveway.
- J. Cement concrete curbs. This item shall consist of Portland cement concrete curbs, depressed concrete curbs, and curb gutters constructed on a prepared subgrade to the following dimensions:
 - (1) Depressed curb. Transition of depression 36 inches, reveal through the depression one-and-one-half inches, fifteen-and-one-half-inch depth with a battered front face and a top from radius of three quarters of an inch, conforming to the line, grade, and typical cross sections of the approved drawings.

Appendix E

Environmental Impact Study

- A. General. The impact on the environment generated by subdivision, land development and other projects necessitates a comprehensive analysis of the variety of problems that may result and the actions that can be taken to minimize these problems. In order to effectively evaluate the environmental consequences or effects of certain projects in the Township, an Environmental Impact Study (EIS) shall be submitted in accordance with the provisions herein and in § 305-505.E.(4)(r) of this Ordinance.
- B. Definitions. For the purpose of an EIS, the following definitions shall apply:

ADVERSE ENVIRONMENTAL IMPACTS — An impact which contributes to a harmful or degraded condition and/or procedures and an environmental harm or degradation. Adverse environmental impacts may include: a negative impact on surrounding land uses; negative impacts which are contrary to the zoning ordinance, and the intent of these regulations; negative impacts which may create a threat to the public health, safety, and general welfare; and negative impacts on physical and biological resources.

ALTERNATIVES — Choices between or among two or more plans, layouts, approaches, solutions and/or results.

BENEFICIAL EFFECTS — Results contributing to an improvement in condition and/or producing a favorable result such as making a use more compatible with the intent and goals of the SALDO, and promoting the public health, safety, and general welfare.

BIOLOGICAL RESOURCES — Characteristics of the natural environment manifest in its flora and fauna. The disposition of these characteristics is typically expressed in vegetation and/or wildlife units such as: field and meadow; tree, woodland or forest stand and related understory and ground cover growth; and aquatic and terrestrial wildlife and/or their habitats.

DEVELOPMENT — Any man-made change to improved or unimproved real estate, including, but not limited to, the construction or alteration to buildings or other structures, the placement of mobile homes, streets or other paving, utilities, filling, grading, regrading, excavation, mining, dredging or drilling operations; provided, however, the following shall not be considered as development: routine maintenance; incidental grading related to gardening, cultivation, and the like; and minor structure alterations to a building.

ENVIRONMENTAL IMPACT STUDY — An assessment which objectively describes, analyzes, and documents both the beneficial and adverse environmental effects of a proposed project and the measures to be undertaken to mitigate adverse effects in accordance with the provisions set forth in the SALDO and these regulations.

IMPACT — The power of an event or condition to procure changes in other conditions. In the context of impact exerted on the environment, changes which effect existing conditions and/or quality are of greatest concern.

LONG-TERM EFFECTS — Results which are manifest for or extending over a period of greater than two years.

MITIGATION — The act of precluding a potentially adverse effect and/or making a potentially adverse effect less severe through measures which will improve a condition and/ or lessen the impact.

NATURAL ENVIRONMENT — A composition of land, water and/or air represented by its inherent physical and biological resources.

PHYSICAL RESOURCES — Characteristics of the natural environment manifest in its: landforms, soils, geological structures of surface and/or subsurface rock, minerals, natural bodies of water and/or man-made impoundments, watercourses, groundwater, and the like. The disposition of these characteristics is typically expressed in physiographic, topographic and/or hydrologic units such as: rock formations, slopes, elevations, soil types, watersheds, surface water types, wetlands, floodplains, aquifers or aquifer recharge areas, and the like.

PRIMARY EFFECTS — Results of a direct nature which have a principal influence on a particular condition.

PROJECT — A subdivision; a land development; or any development involving the construction or alteration of a building or other structure or the grading of land to accommodate a building, structure, or use.

SECONDARY EFFECTS — Results of an indirect nature which have an influence on a particular condition or state derived from a primary effect.

SHORT-TERM EFFECTS — Results which are manifest for or extending over a period of less than two years.

VISUAL RESOURCES — Characteristics of the natural environment which are visible. The visual resources of a particular area are typically expressed in terms of their visibility, character and/or attractiveness relative to their amenity value and/or quality.

- C. Procedure. Two paper copies and one electronic copy of the EIS shall be submitted with the preliminary plan application. The EIS shall be prepared by a registered professional engineer licensed in the Commonwealth of Pennsylvania, versed in area of such environmental studies. The registered professional engineer's qualifications shall be submitted with the study. Within the EIS, specific emphasis shall be directed toward the proposed project's effects on and relationship to applicable site, neighborhood (including areas in adjacent municipalities where applicable) and Township-wide resources, conditions, or characteristics. The EIS shall include text, tables, maps and analyses for the purpose of describing the project site, proposed uses(s), environmental characteristics and the environmental effect of the proposal as follows:
- (1) Overview. Indicate the purpose and scope of the proposed project. Enumerate the benefits to the public which will result from the proposed project and describe the suitability of the site for the intended use. A description of the proposed project shall be presented to indicate the extent to which the site must be altered, the kinds of facilities to be constructed, how they are to be constructed and the uses intended.
 - (2) Location. An identification of the site location and area through the use of a location map drawn at a scale of not more than 2,000 feet to the inch. The location map shall depict all streets, adjoining properties, zoning district boundaries and municipal boundaries within 500 feet of any

part of the tract. In the case of development of only a portion of the entire tract, the location map shall also show the relationship of the section to the entire tract.

- (3) Description of the project. An identification of the nature of the proposals through the presentation of the following:
 - a. A site development plan, including notes pertaining to the number and type of lots or units, the square footage and/or acreage of the tract and a depiction of the features which are proposed, such as streets, driveways, parking areas, buildings and other structures, and all impervious surfaces. The plan shall be drawn at a scale not smaller than 100 feet to the inch, i.e., 50 feet to the inch is permitted but 200 feet to the inch is not, and may be submitted as an attachment to the study.
 - b. A statement indicating the existing and proposed ownership of the tract and, where applicable, the type of ownership, operation and maintenance proposed for areas devoted to open space or otherwise not under the control of a single lot owner.
 - c. A statement indicating the proposed staging or phasing of the project and a map depicting the boundaries of each stage or phase of the project. Such boundaries shall be superimposed on a version of the site development plan.
- (4) Physical resources inventory. An identification of physical resources associated with the natural environment of the tract, including such features as geology, topography, soils, hydrology, and the like. The identification of physical resources shall include a narrative description of the qualitative aspects of each of the resources mentioned above. In addition, these resources shall be mapped at a scale of not smaller than 100 feet to the inch as specified below and may be either incorporated into the EIS or submitted as attachments to the study.
 - a. A map depicting the topographical characteristics of the tract. Such map shall contain contours with at least 2-foot intervals and shall depict slopes ranging from 0 percent to 8 percent, 8 percent to 15 percent, 15 percent to 25 percent, and greater than 25 percent.
 - b. A map depicting the hydrological characteristics of the tract. Such map shall depict: surface water resources, their drainage characteristics, watersheds and floodplains, and groundwater resources, surface water resources, include features such as creeks, runs and other streams, ponds, lakes and other natural bodies of water, springs, wetlands, and any man-made impoundments. Groundwater resources include features such as aquifers and aquifer recharge areas.
 - c. A map depicting the soil characteristics of the tract. Such map shall depict all soil types and shall include a table identifying soil characteristics pertinent to the proposed project such as prime agricultural soils, depth of bedrock, depth of water table, flood hazard potential, and limitations for septic tank filter fields. List and describe each soil type located on the site. If applicable, provide percolation data. Where the proposed area of land disturbance will involve soils with moderate or severe limitations (as per the Soil Survey of Bucks County, Soil Conservation Service), relative to the type of project proposed, a complete mapping of all soil types on the site shall be required indicating where those moderate and severe limitations exist.
- (5) Biological resources inventory. An identification of biological resources associated with the natural environment of the tract, including such features as vegetation and wildlife. The identification of biological resources shall include a narrative description of each of the resources mentioned above. In addition, these resources shall be mapped at a scale of not smaller than 100 feet to the inch, as provided below, and may be either incorporated into the EIS or submitted as attachments to the study:
 - a. A map depicting the vegetation characteristics of the tract. Survey map shall define the locations and boundaries of the woodland and forest areas of the tract and shall note the

- types of vegetation associations which exist in terms of their species, types, and sizes. In addition, all trees 10 inches in caliper or greater shall be accurately located and identified on the map, whether they are freestanding trees or tree masses.
- b. A map depicting characteristics associated with wildlife habitats. Such map may draw upon vegetation, hydrology, and soil maps to express habitat characteristics associated with terrestrial and aquatic wildlife on the tract and the relationship of overall habitat(s).
- (6) Land use inventory. An identification of the land use conditions and characteristics associated with the tract such as: current and past use, land cover and encumbrances, and the relationship of these two adjacent tracts. The identification of land use conditions and characteristics shall include a narrative description of the above. In addition, the following maps, drawn at a scale of not smaller than 100 feet to the inch, shall be incorporated into the EIS or submitted as attachments to it:
- a. A map depicting the land cover characteristics of the tract. Such map shall define existing features, including: paved or other impervious surfaces, woodland and forest areas, cultivated areas, pasture, old fields, lawns and landscaped areas, and the like.
 - b. A map depicting any encumbrances to the tract. Such map shall define easements and other areas where certain use privileges exist.
 - c. A map depicting the land uses within 500 feet of the proposed tract. Such map may be at the same scale as the location map.
- (7) Surface water inventory. Describe existing watercourses and bodies that are partially or totally on the site and their relationship to the area of land disturbance. Calculate existing runoff from the site and the associated watershed, including the potential development of the remainder of the watershed. When the natural drainage pattern will be significantly altered, an analysis shall be conducted which will investigate flow, depth, capacity, and water quality of the receiving waters. When required, floodplain areas will be mapped in consultation with the Federal Emergency Management Agency, U.S. Army Corps of Engineers and/or PaDEP or shall be based upon historical records of flooding and any other area known to flood, with the most stringent limits of floodplain delineation applying. Existing drainage structures shall be mapped, and the capacity of the drainage network shall be determined. Additionally, wetland areas as defined by the PaDEP and the U.S. Army Corps of Engineers shall be delineated.
- (8) Existing features inventory. Describe any existing features on the site that are not considered to be part of the natural environment. This may include, but not necessarily be limited to, roads, housing units, accessory structures, utility lines, etc.
- (9) Visual resource inventory. An identification of the visual resources associated with the tract, such as areas which have a practical amenity value and areas which offer interest in viewing the tract. The identification of visual resources shall include a narrative description of the above. In addition, a map drawn at scale of not smaller than 100 feet to the inch depicting visual resources shall be incorporated into the EIS or submitted as an attachment to the study.
- (10) Impact inventory. The implications of the proposed project in terms of the type of beneficial or adverse effects which may result from it and the duration of these effects in terms of their short-term nature. To indicate such effects, there shall be a discussion of the implications of the proposed project to the resources, conditions and characteristics described above. In addition, the developer shall display where the project adversely affects the tract's resources, conditions, or characteristics, through the use of a map drawn at a scale of not smaller than 100 feet to the inch, wherein the areas adversely affected from proposed development are highlighted. Such map may be either incorporated into the EIS or submitted as an attachment to the study. Further, the developer must demonstrate and specify in the EIS how and where the findings in the EIS and its attachments are reflected in the project.

- (11) Alternative analysis. Alternatives within the project site which would preclude, reduce, or lessen potential adverse impact or produce beneficial effects. To indicate such alternatives, the developer shall submit exhibits or diagrams which will depict the type of alternatives described in narrative form. The developer shall comment on alternatives such as: revised location, redesign, layout or siting of buildings, roads and other structures and the reduction in size of proposed structures or number of structures.
- (12) Adverse impacts. Probable adverse effects which cannot be precluded, including:
- Water quality and quantity.
 - Damage or destruction of significant plant or wildlife systems.
 - Destruction of natural resources.
 - Destruction of man-made resources.
 - Disruption of desirable community and regional growth.
 - Health, safety, and well-being of the public.
- In indicating such effects, a discussion shall be presented regarding whether they will have primary or secondary implications, that is, whether the adverse effects will have direct or indirect influence on a particular resource, condition, or characteristic.
- (13) Mitigation measures. Measures to mitigate adverse effects. To indicate such measures, the developer shall submit exhibits or diagrams which will depict the type of remedial, protective and mitigative measures described in narrative form. These measures shall include those required through existing procedures and standards, and those unique to a specific project, as follows:
- Mitigation measures which pertain in existing procedures and standards are those related to current requirements of the state, county and/or Township for remedial or protective action such as: sedimentation and erosion control, stormwater runoff control, water quality control, and air quality control.
 - Mitigating measures related to impacts which may be unique to a specific project are those related to efforts such as: revegetation, screening, fencing, emission control, traffic control, noise control, relocation of people and/or businesses and land acquisition.
- (14) Irreversible impacts. Any irreversible environmental changes which would occur due to the proposed project should it be implemented. To indicate such changes, the use of nonrenewable resources during the initial and continued phases of the project shall be discussed. Further, the loss of environmental resources shall be indicated through a presentation of the quantity of loss and related qualitative effects.

D. General.

- (1) In making its evaluation, the Board of Supervisors, and/or the Township Planning Commission, may request any additional information it deems necessary to adequately assess potential environmental impacts. Whenever any information is assumed not directly applicable to the proposed project, the developer shall indicate such assumed inapplicability in the narrative of the EIS and state why such information is considered to be inapplicable in the case of the particular project in question.
- (2) The EIS shall be prepared by a planner certified by the American Institute of Certified Planners, registered professional engineer, or equivalent in collaboration with other licensed professionals. All persons who participate in preparing the study shall be identified and their qualifications stated. All sources of information shall be identified when presented, and a bibliography shall be attached to the study. All work in the study shall be in conformity with recognized engineering, architectural, and planning practices and principals. The Township may retain its own expert to evaluate the EIS. The cost of the expert shall be the cost for the review of the environmental impact study and plans.

- (3) The Board shall not approve a project unless it determines and finds that the proposed development:
- a. Will not result in appreciable harmful effects.
 - b. Has been designed and conceived with a view toward the protection of resources.
 - c. Will not, individually or collectively, place a disproportionate or excessive demand upon the total resources available for such proposal and for any future proposals.

Appendix F

Preapproved Plant Material List

- A. This list of preapproved plant material is intended to offer a broad selection of available plant material suitable for the various required landscapes described in this Ordinance. Native plant species are required in accordance with § 305-329.F.(5).
- B. Street trees and parking lot, buffer, perimeter, and screening plants.
- (1) Shade/Canopy Trees – suitable for street trees or parking lots as well as for buffer and screens. Minimum mature height – 30 feet or more.

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
Acer sacharum	Sugar Maple (Pennsylvania native)
Cladrastris lutea	Yellowwood (Pennsylvania native)
Gleditsia triacanthos v. 'inermis'	Thornless Honeylocust (Pennsylvania native)
Liquidambar styraciflua	Sweet Gum (Pennsylvania native)
Var. 'Rotundiloba'	Var. 'Rotundiloba'
Nyssa sylvatica	Black Gum or Sour Gum (Pennsylvania native)
Ostrya virginiana	American Hophornbeam (Pennsylvania native)
Platanus x acerifolia 'Bloodgood'	London Planetree 'Bloodgood'
Quercus bicolor	Swamp White Oak (Pennsylvania native)
Quercus coccinea	Scarlet Oak (Pennsylvania native)
Quercus imbricaria	Shingle Oak (Eastern US native)
Quercus macrocarpa	Bur Oak (Oak Pennsylvania native)
Quercus montana	Chestnut Oak (Pennsylvania native)
Quercus phellos	Willow Oak (Pennsylvania native)
Quercus rubra	Northern Red Oak (Pennsylvania native)
Tilia Americana	Basswood or American Linden (Pennsylvania native)
Tilia cordata	Little Leaf Linden
Tilia tomentosa	Silver Linden
Ulmus Americana 'Princeton'	American Elm 'Princeton' (Pennsylvania native)
Zelkova serrata	Japanese Zelkova

- (2) Shade/canopy trees – suitable for property line buffers, perimeter plantings and other non-vehicular use areas. Minimum mature height – 30 feet or more.

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
Acer rubrum	Red Maple (Pennsylvania native)
Acer saccharinum	Silver Maple (Pennsylvania native)
Acer saccharum	Sugar Maple (Pennsylvania native)
Betula alleghaniensis	Yellow Birch (Pennsylvania native)
Betula lenta	Sweet Birch (Pennsylvania native)
Betula nigra	River Birch (Pennsylvania native)
Betula populifolia	Grey Birch (Pennsylvania native)
Carya cordiformis	Bitternut Hickory (Pennsylvania native)
Carpinus caroliniana	American Hornbeam (Pennsylvania native)
Carya glabra	Pignut Hickory (Pennsylvania native)
Carya ovata	Shagbark Hickory (Pennsylvania native)
Catalpa speciosa	Northern Catalpa
Celtis occidentalis	Common Hackberry (Pennsylvania native)
Diospyros virginiana	Common Persimmon (Pennsylvania native)

<i>Fagus grandifolia</i>	American Beech (Pennsylvania native)
<i>Fagus sylvatica</i>	European Beech
<i>Gymnocladus dioicus</i>	Kentucky Coffeetree (Pennsylvania native)
<i>Larix Laricina</i>	American Larch (Pennsylvania native)
<i>Liquidambar styraciflua</i>	Sweet Gum (Pennsylvania native)
<i>Liriodendron tulipifera</i>	Tuliptree (Pennsylvania native)
<i>Nyssa sylvatica</i>	Black Gum or Sour gum (Pennsylvania native)
<i>Ostrya virginiana</i>	American Hophornbeam (Pennsylvania native)
<i>Oxydendrum Arboreum</i>	Sourwood (Pennsylvania Native)
<i>Metasequoia glyptostroboides</i>	Dawn Redwood
<i>Ostrya virginiana</i>	American Hophornbeam (Pennsylvania native)
<i>Platanus x acerifolia</i>	London Planetree
<i>Platanus occidentalis</i>	Sycamore (Pennsylvania native)
<i>Populus deltoides</i>	Eastern Cottonwood (Pennsylvania native)
<i>Populus tremuloides</i>	Quaking Aspen (Pennsylvania native)
<i>Prunus Americana</i>	American Plum (Pennsylvania native)
<i>Ptelea trifoliata</i>	Hoptree (Pennsylvania native)
<i>Quercus alba</i>	White Oak (Pennsylvania native)
<i>Quercus bicolor</i>	Swamp White Oak (Pennsylvania native)
<i>Quercus coccinea</i>	Scarlet Oak (Pennsylvania native)
<i>Quercus macrocarpa</i>	Bur Oak (Pennsylvania native)
<i>Quercus montana</i>	Chestnut Oak (Pennsylvania native)
<i>Quercus palustris</i>	Pin Oak (Pennsylvania native)
<i>Quercus phellos</i>	Willow Oak (Pennsylvania native)
<i>Quercus rubra</i>	Northern Red Oak (Pennsylvania native)
<i>Quercus velutina</i>	Black Oak (Pennsylvania native)
<i>Sassafras albidum</i>	Sassafras (Pennsylvania native)
<i>Sorbus Americana</i>	Mountain Ash (Pennsylvania native)
<i>Tilia americana</i>	Basswood or American Linden (Pennsylvania native)
<i>Ulmus americana Princeton</i>	American Elm Princeton (Pennsylvania native)

- (3) Evergreen trees – suitable for property line buffers, perimeter plantings or site element screens.
Minimum mature height – 20 feet.

SCIENTIFIC NAME

Abies concolor
Chamaecyparis obtusa
Chamaecyparis pisifera
Chamaecyparis thyoides
Ilex opaca
Juniperus virginiana
Picea abies
Picea glauca
Picea omorika
Picea pungens
Pinus strobus
Pinus virginiana
Pseudotsuga menziesii

COMMON NAME

White Fir
 Hinoki Falsecypress
 Japanese Falsecypress
 Atlantic White Cedar (Pennsylvania native)
 American Holly (Pennsylvania native)
 Eastern Red Cedar (Pennsylvania native)
 Norway Spruce
 White Spruce
 Serbian Spruce
 Colorado Blue Spruce
 White Pine (Pennsylvania native)
 Virginia Pine (Pennsylvania native)
 Douglas Fir

Thuja sp. occidentalis	American Arborvitae (native)
Thuja sp.	Arborvitae (native)

- (4) Ornamental trees – suitable, in some cases, as street trees beneath overhead utility lines and all other landscape situation. Mature height – 15 to 35 feet.

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
Amelanchier canadensis	Shadbush or Shadblow Serviceberry (Pennsylvania native)
Amelanchier laevis	Allegheny Serviceberry (Pennsylvania native)
Asimina triloba	American pawpaw (Pennsylvania native)
Carpinus caroliniana	Hornbeam or Ironwood (Pennsylvania native)
Cercis canadensis	Eastern Redbud (Pennsylvania native)
Chionanthus virginicus	Fringetree (Pennsylvania native)
Cornus alternifolia	Pagoda dogwood (Pennsylvania native)
Cornus florida	Flowering Dogwood (Pennsylvania native)
Cornus mas	Corneliancherry Dogwood
Crataegus phaenopyrum	Washington Hawthorn –
Crataegus viridis 'Winter King'	Winter King Hawthorn
Halesia tetraptera	Carolina Silverbell (Pennsylvania native)
Magnolia x soulangiana	Saucer Magnolia
Magnolia virginiana	Sweetbay Magnolia (Pennsylvania native)
Malus (cultivars)	Crabapple
Malus angustifolia	Southern Crabapple
Prunus sargentii	Sargent Cherry
Prunus serrulata 'Kwanzan'	Kwanzan Cherry (Japanese Cherry)
Prunus x yedoensis	Yoshino Cherry
Prunus serotina	Black Cherry (Pennsylvania native)
Prunus virginiana	Chokecherry (Pennsylvania native)

- (5) Large deciduous/evergreen shrubs – suitable for use in property line buffers, perimeter plantings or site element screening and landscaping site locations. Average minimum mature height – 7 feet or more.

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
Alnus Serrulata	Smooth Alder (Pennsylvania native)
Aronia arbutifolia (Photinia pyrifolia)	Red Chokeberry (Pennsylvania native)
Baccharis halmifolia	Groundsel Bush (Pennsylvania native)
Callicarpa americana	Beauty Bush
Cephalanthus occidentalis	Button bush (Pennsylvania native)
Cornus amomum	Silky Dogwood (Pennsylvania native)
Cornus racemosa	Grey Dogwood (Pennsylvania native)
Cornus sericea	Redosier Dogwood (Pennsylvania native)
Corylus americana	Hazelnut (Pennsylvania native)
Hamamelis virginiana	Witchhazel (Pennsylvania native)
Ilex verticillata	Winterberry (Pennsylvania native)
Kalmia latifolia	Mountain Laurel (Pennsylvania native)
Lindera benzoin	Spicebush (Pennsylvania native)
Myrica pennsylvanica	Bayberry (Pennsylvania native)
Morella pensylvanica	Northern Bayberry

<i>Physocarpus opulifolius</i>	Common Ninebark (Pennsylvania native)
<i>Pieris floribunda</i>	Mountain andromeda
<i>Rhododendron maximum</i>	Rosebay Rhododendron (Pennsylvania native)
<i>Rhus copallinum</i>	Winged Sumac (Pennsylvania native)
<i>Rhus glabra</i>	Smooth Sumac (Pennsylvania native)
<i>Rhus typhina</i>	Staghorn Sumac (Pennsylvania native)
<i>Salix discolor</i>	Pussy willow (Pennsylvania native)
<i>Sambucus canadensis</i>	Elderberry (Pennsylvania native)
<i>Thuja occidentalis</i>	American Arborvitae (native)
<i>Vaccinium corymbosum</i>	Highbush Blueberry (Pennsylvania native)
<i>Viburnum dentatum</i>	Arrowwood Viburnum (Pennsylvania native)
<i>Viburnum lentago</i>	Nannyberry Viburnum (Pennsylvania native)
<i>Viburnum nudum</i>	Possumhaw (Pennsylvania native)
<i>Viburnum prunifolium</i>	Blackhaw Viburnum (Pennsylvania native)
<i>Viburnum trilobum</i>	American Cranberrybush Viburnum (Pennsylvania native)

- (6) Deciduous/evergreen shrubs – suitable for clipped hedges in property line buffers, perimeter plantings or site element screens. Average height – under 10 feet.

SCIENTIFIC NAME**COMMON NAME**

<i>Aronia melanocarpa</i> (Photinia melanocarpa)	Black Chokeberry (Pennsylvania native)
Azalea - evergreen varieties:	Azalea
<i>Calycanthus floridus</i>	Eastern Sweetshrub (Pennsylvania native)
<i>Cephalanthus occidentalis</i>	Button bush (Pennsylvania native)
<i>Ceanothus americanus</i>	New Jersey Tea (Pennsylvania native)
<i>Clethra alnifolia</i>	Sweet pepperbush (Pennsylvania native)
<i>Cotoneaster salicifolius</i>	Willowleaf Cotoneaster
<i>Fothergilla major</i>	Large Fothergilla
<i>Fothergilla gardenia</i>	Blue Shadow Fothergilla
<i>Hydrangea arborescens</i>	Smooth Hydrangea (Pennsylvania native)
<i>Hydrangea quercifolia</i>	Oakleaf Hydrangea
<i>Ilex glabra</i>	Inkberry (Pennsylvania native)
<i>Ilex verticillata</i>	Winterberry (Pennsylvania native)
<i>Itea virginica</i>	Virginia Sweetspire (Pennsylvania native)
<i>Juniperus chinensis</i> cv. 'Hetzii Glauca'	Hetz Blue Juniper (Chinese Juniper)
<i>Juniperus chinensis</i> cv. 'Pfitzeriana compacta'	Compact Pfitzer Juniper (Chinese Juniper)
<i>Juniperus horizontalis</i>	Creeping juniper
<i>Kalmia latifolia</i>	Mountain Laurel (Pennsylvania native)
<i>Pieris floribunda</i>	Mountain Pieris (Pennsylvania native)
<i>Pieris japonica</i>	Japanese Pieris
<i>Rhododendron</i> sp.	Rhododendrons
<i>Rhododendron atlanticum</i>	Coastal Azalea (Pennsylvania native)
<i>Rhododendron periclymenoides</i>	Pinxterbloom Azalea (Pennsylvania native)
<i>Rhododendron viscosum</i>	Swamp Azalea (Pennsylvania native)

<i>Rhus aromatica</i>	Fragrant Sumac
<i>Rhus aromatica</i>	Low Gro Sumac
<i>Rosa palustris</i>	Swamp Rose (Pennsylvania native)
<i>Rosa virginiana</i>	Virginia Rose (Pennsylvania native)
<i>Spiraea alba</i>	Meadowsweet (Pennsylvania native)
<i>Spiraea latifolia</i>	Meadowsweet (Pennsylvania native)
<i>Vaccinium angustifolium</i>	Lowbush Blueberry (Pennsylvania native)

C. Stormwater retention/detention basin plants.

- (1) Canopy/shade trees (including deciduous/evergreen ornamental trees) – suitable for stormwater retention/detention basin areas.

SCIENTIFIC NAME

Acer negundo
 + *Acer rubrum*
 * *Acer saccharinum*
Amelanchier arborea
 * *Amelanchier canadensis*
Betula alleghaniensis
 * *Betula nigra*
Betula populifolia
Carpinus caroliniana
 * *Carpinus caroliniana*
Carya cordiformis
Carya glabra
Carya ovata
Celtis occidentalis
Cercis canadensis
Chamaecyparis thyoides
 * *Chionanthus virginicus*
Cornus florida
Crataegus crus-galli
Diospyros virginiana
Hamamelis virginiana
Juniperus virginiana
 + *Liquidambar styraciflua*
Liriodendron tulipifera
Magnolia acuminata
 * *Magnolia virginiana*
 * *Nyssa sylvatica*
Ostrya virginiana
Oxydendrum arboreum
Platanus occidentalis
Populus deltoides
Prunus maritima
Quercus macrocarpa
 * *Quercus bicolor*
 * *Quercus phellos*
Quercus rubra

COMMON NAME

Boxelder (Pennsylvania native)
 Red Maple (Pennsylvania native)
 Silver Maple (Pennsylvania native)
 Serviceberry (Pennsylvania native)
 Shadblow Serviceberry (Pennsylvania native)
 Yellow Birch (Pennsylvania native)
 River Birch (Pennsylvania native)
 Gray Birch (Pennsylvania native)
 American Hornbeam, Ironwood (Pennsylvania native)
 American hornbeam, Ironwood (Pennsylvania native)
 Bitternut Hickory (Pennsylvania native)
 Pignut Hickory (Pennsylvania native)
 Shagbark Hickory (Pennsylvania native)
 Common Hackberry (Pennsylvania native)
 Eastern Redbud (Pennsylvania native)
 Atlantic White Cedar (Pennsylvania native)
 Fringe tree (Pennsylvania native)
 Flowering Dogwood (Pennsylvania native)
 Cockspur hawthorn (Pennsylvania native)
 Common Persimmon (Pennsylvania native)
 Witchhazel (Pennsylvania native)
 Eastern Red Cedar (Pennsylvania native)
 Sweet Gum (Pennsylvania native)
 Tulip Poplar (Pennsylvania native)
 Cucumber Tree Magnolia (Pennsylvania native)
 Sweetbay Magnolia (Pennsylvania native)
 Black Gum (Pennsylvania native)
 Hop-hornbeam (Pennsylvania native)
 Sourwood (Pennsylvania native)
 Sycamore (Pennsylvania native)
 Eastern Cottonwood (Pennsylvania native)
 Beach Plum (Pennsylvania native)
 Bur Oak (Pennsylvania native)
 Swamp White Oak (Pennsylvania native)
 Willow Oak (Pennsylvania native)
 Northern Red Oak (Pennsylvania native)

+Salix caprea	Willow
+Salix discolor	Pussy Willow (Pennsylvania native)
Salix nigra	Black willow (Pennsylvania native)
Salix sericea	Silky willow (Pennsylvania native)
*Thuja occidentalis	Eastern Arborvitae (native)
Tilia Americana	American Basswood (Pennsylvania native)

+ Generally suitable for sustained wet areas

*Suitable for usually well-drained areas that may be subject to occasional flooding

(2) Deciduous/evergreen shrubs – suitable for stormwater retention/detention basin areas.

<u>SCIENTIFIC NAME</u>	<u>COMMON NAME</u>
Alnus rugosa	Speckled Alder (Pennsylvania native)
Alnus serrulata	Smooth Alder (Pennsylvania native)
+ Aronia arbutifolia (Photinia pyrifolia)	Red Chokeberry (Pennsylvania native)
Aronia melanocarpa (Photinia melanocarpa)	Black Chokeberry (Pennsylvania native)
* Calycanthus floridus	Sweetshrub (Pennsylvania native)
Cephalanthus occidentalis	Common Buttonbush (Pennsylvania native)
+ Clethra alnifolia	Summersweet (Pennsylvania native)
+ Cornus amomum	Silky Dogwood (Pennsylvania native)
Cornus racemosa	Gray Dogwood (Pennsylvania native)
+ Cornus sericea	Redosier Dogwood (Pennsylvania native)
Corylus americana	American Hazelnut (Pennsylvania native)
Hydrangea arborescens	Smooth Hydrangea (Pennsylvania native)
Hypericum densiflorum	Dense St. Johnswort (Pennsylvania native)
Hypericum prolificum	Shrubby St. Johnswort (Pennsylvania native)
+ Ilex glabra	Inkberry (Pennsylvania native)
+ Ilex verticillata	Winterberry (Pennsylvania native)
Itea virginica	Virginia Sweetspire (Pennsylvania native)
* Linderia benzoin	Spicebush (Pennsylvania native)
+ Myrica pennsylvanica	Northern Bayberry (Pennsylvania native)
Potentilla fruticosa	Cinquefoil (Pennsylvania native)
+ Rhododendron periclymenoides	Pinxterbloom Azalea (Pennsylvania native)
+ Rhododendron viscosum	Swamp Azalea (Pennsylvania native)
Rhus aromatica	Fragrant Sumac
Rhus glabra	Smooth Sumac (Pennsylvania native)
Rubus odoratus	Flowering Raspberry (Pennsylvania native)
Rosa palustris	Swamp Rose (Pennsylvania native)
Rubus allegheniensis	Common Blackberry (Pennsylvania native)
* Sambucus canadensis	American Elder, Elderberry (Pennsylvania native)
Sambucus racemosa	Red Elder (Pennsylvania native)
Spiraea latifolia	Broad Leaved Meadowsweet
Symphoricarpos obiculatus	Coralberry (Pennsylvania native)
Viburnum Acerfolium	Mapleleaf Viburnum (Pennsylvania native)
* Viburnum cassinoides	Witherod Viburnum (Pennsylvania native)

* <i>Viburnum dentatum</i>	Arrowwood Viburnum (Pennsylvania native)
* <i>Viburnum lentago</i>	Nannyberry Viburnum (Pennsylvania native)
<i>Viburnum nudum</i>	Smooth Witherrod Viburnum; Possumhaw (Pennsylvania native)
<i>Viburnum prunifolium</i>	Blackhaw Viburnum (Pennsylvania native)
<i>Viburnum trilobum</i>	American Cranberrybush (Pennsylvania native)

+ Generally suitable for sustained wet areas

*Suitable for usually well-drained areas that may be subject to occasional flooding

- (3) Herbaceous perennials – suitable for stormwater retention/detention basin areas as well as other landscape situation.

SCIENTIFIC NAME

COMMON NAME

<i>Achillea millefolium</i>	Yarrow
<i>Acorus americanus</i>	Sweetflag (Pennsylvania native)
<i>Actaea pachypoda</i>	Doll's Eyes (Pennsylvania native)
<i>Agastache foeniculum</i>	Anise Hyssop (native)
<i>Agastache nepetoides</i>	Yellow Great Hyssop (Pennsylvania native)
<i>Agastache scrophulariifolia</i>	Giant Purple Hyssop (Pennsylvania native)
<i>Alisma plantago-aquatica</i> (subcordatum)	Water Plantain (Pennsylvania native)
<i>Allium cernuum</i>	Nodding onion (Pennsylvania native)
<i>Amsonia hubrichtii</i>	Hubricht's Bluestar (native)
<i>Andropogon virginicus</i>	Broomsedge (Pennsylvania native grass)
<i>Aquilegia canadensis</i>	Wild Columbine (Pennsylvania native)
<i>Arisaema triphyllum</i>	Jack-in-the-Pulpit (Pennsylvania native)
<i>Asarum canadense</i>	Wild Ginger (Pennsylvania native)
<i>Asclepias incarnata</i>	Swamp Milkweed (Pennsylvania native)
<i>Asclepias purpurascens</i>	Purple Milkweed
<i>Asclepias syriaca</i>	Common Milkweed (Pennsylvania native)
<i>Asclepias tuberosa</i>	Butterflyweed (Pennsylvania native)
<i>Asclepias verticillata</i>	Whorled Milkweed (Pennsylvania native)
* <i>Aster novae-angliae</i> (symphotricum)	New England Aster (Pennsylvania native)
<i>Aster novi-belgii</i> (symphotricum)	New York Aster (Pennsylvania native)
<i>Baptisia minor</i>	Dwarf Blue Indigo
<i>Baptisia australis</i>	Wild Blue Indigo (Pennsylvania native)
+ <i>Caltha palustris</i>	Marsh Marigold (Pennsylvania native)
+ <i>Chelone glabra</i>	White Turtlehead (Pennsylvania native)
<i>Chelone lyonii</i>	Pink Turtlehead (native)
* <i>Chrysanthemum leucanthemum</i>	Ox-Eye Daisy
<i>Chrysogonum virginianum</i>	Green-and-Gold (Pennsylvania native)
<i>Coreopsis grandiflora</i>	Golden Star
<i>Coreopsis lanceolata</i>	Lanceleaf Coreopsis, tickseed
<i>Coreopsis verticillata</i>	Threadleaf Coreopsis
<i>Dianthus</i> sp.	Pinks
<i>Dicentra eximia</i>	Bleeding Heart (Pennsylvania native)
+* <i>Eupatorium dubium</i>	Joe Pye Weed (native)
+* <i>Eupatorium fistulosum</i>	Hollow Joe Pye Weed (Pennsylvania native)

<i>Eupatorium maculatum</i>	Spotted Joe-Pye Weed (Pennsylvania native)
<i>Eupatorium Hyssopifolium</i>	Hyssopleaf Thoroughwort (Pennsylvania native)
<i>Eupatorium perfoliatum</i>	Common Boneset (Pennsylvania native)
* <i>Echinacea purpureum</i>	Purple Cornflower (native)
<i>Filipendula rubra</i>	Queen of the Prairie (Pennsylvania native)
<i>Gaillardia aristata</i>	Blanket Flower
<i>Geranium maculatum</i>	Wild Geranium (Pennsylvania native)
<i>Helenium autumnale</i>	Sneezeweed (Pennsylvania native)
* <i>Hemerocallis</i> sp.	Day Lily
<i>Heuchera americana</i>	Alumroot (Pennsylvania native)
+ <i>Hibiscus moscheutos</i>	Rose Mallow (Pennsylvania native)
+ <i>Iris versicolor</i>	Blue Flag (Pennsylvania native)
<i>Leucanthemum maximum</i>	Shasta Daisy, Ox Eye Daisy
<i>Lilium superbum</i>	Turk's Cap Lily (Pennsylvania native)
<i>Liatris microcephala</i>	Appalachian Blazing Star
<i>Liatris scariosa</i>	Northern Blazing Star (Pennsylvania native)
<i>Liatris spicata</i>	Blazing Star (Pennsylvania native)
+* <i>Lobelia cardinalis</i>	Cardinal Flower (Pennsylvania native)
+* <i>Lobelia siphilitica</i>	Blue Lobelia (Pennsylvania native)
<i>Mertensia virginica</i>	Virginia Bluebells (Pennsylvania native)
<i>Mimulus ringens</i>	Monkeyflower (Pennsylvania native)
* <i>Monarda didyma</i>	Scarlet Bee Balm (Pennsylvania native)
<i>Monarda fistulosa</i>	Wild Bergamot (Pennsylvania native)
<i>Monarda punctata</i>	Spotted Bee Balm (Pennsylvania native)
<i>Oenothera fruticosa</i>	Narrow-Leaved Sundrops (Pennsylvania native)
<i>Oenothera perennis</i>	Sundrops (Pennsylvania native)
+* <i>Panicum virgatum</i>	Switchgrass (Pennsylvania native)
<i>Penstemon digitalis</i>	Beard-tongue (Pennsylvania native)
<i>Phlox divaricata</i>	Woodland Blue Phlox (Pennsylvania native)
<i>Phlox maculata</i>	Phlox (Pennsylvania native)
<i>Phlox paniculata</i>	Summer Phlox (Pennsylvania native)
<i>Physostegia virginiana</i>	Obedient Plant (Pennsylvania native)
<i>Podophyllum peltatum</i>	Mayapple (Pennsylvania native)
<i>Polemonium reptans</i>	Jacob's Ladder (Pennsylvania native)
<i>Pycnanthemum flexuosum</i>	Appalachian Mountain Mint
<i>Pycnanthemum muticum</i>	Big Leaf Mountain Mint (Pennsylvania native)
* <i>Rudbeckia</i> sp.	Black-Eyed Susan/Brown-Eyed Susan (native)
<i>Rudbeckia</i> sp. <i>Hirta</i>	Black-Eyed Susan (Pennsylvania native)
<i>Rudbeckia</i> sp. <i>laciniata</i>	Black-Eyed Susan (Pennsylvania native)
<i>Rudbeckia</i> sp. <i>Triloba</i>	Three Lobed Coneflower (Pennsylvania native)
<i>Salvia</i> sp.	Sage Species
<i>Sanguinaria Canadensis</i>	Bloodroot (Pennsylvania native)
+ <i>Scirpus</i> sp.	Bulrush Species (Pennsylvania native)
<i>Sedum</i> sp.	Stonecrop Species
<i>Sedum</i> sp. <i>ternatum</i>	Stonecrop species (Pennsylvania native)
<i>Silene regia</i>	Fire Pink, Royal Catchfly
<i>Silene virginica</i>	Fire Pink (Pennsylvania native)

Solidago sp.	Goldenrod Species
Solidago rigida	Stiff goldenrod (Pennsylvania native)
Solidago rugosa	Wrinkle-Leaf Goldenrod (Pennsylvania native)
+ Spartina alterniflora	Cordgrass (Pennsylvania native)
Spiranthes cernua	Nodding Ladies' Tresses (Pennsylvania native)
Symphoricarum species	Asters
Tiarella cordifolia	Foamflower (Pennsylvania native)
Tradescantia ohimensis	Spiderwort (Pennsylvania native)
Trillium species	Trillium (native)
+ Typha latifolia	Common Cat tail (Pennsylvania native)
Verbena species	Vervain
Vernonia gigantea	Ironweed (Pennsylvania native)
Vernonia lettermannii	Threadleaf Ironweed (native)
+* Vernonia noveboracensis	New York Ironweed (Pennsylvania native)
Viola species	Violets
Zizia aurea	Golden Alexanders (Pennsylvania native)

*Suitable for usually well-drained areas that may be subject to occasional flooding

+ Generally suitable for sustained wet areas

- (4) Herbaceous emergent – suitable for stormwater retention/detention basin areas and other wet, natural areas.

SCIENTIFIC NAME

COMMON NAME

Distichlis spicata	Saltgrass (Pennsylvania native)
Dulichium arundinaceum	Three-Sided Sedge (Pennsylvania native)
Iris versicolor	Blue Flag (Pennsylvania native)
Iris prismatica	Slender Blueflag (native)
Iris virginica	Virginia Blue Flag (Pennsylvania native)
Juncus canadensis	Canada Rush (Pennsylvania native)
Juncus effusus	Soft Rush (Pennsylvania native)
Juncus tenuis	Path Rush (Pennsylvania native)
Justicia americana	American Water-Willow (Pennsylvania native)
Nuphar advena	Spatterdock (Pennsylvania native)
Nuphar lutea	American pond lily (Pennsylvania native)
Nuphar microphylla	Yellow Pond lily (Pennsylvania native)
Pontederia cordata	Pickernelweed (Pennsylvania native)
Sagittaria latifolia	Arrowhead (Pennsylvania native)
Saururus cernuus	Lizard's Tail (Pennsylvania native)
Sparganium americanum	American Bur-Reed (Pennsylvania native)

E. General. Suitable for all applicable landscape situations.

(1) Ferns.

SCIENTIFIC NAME

Adiantum pedatum
 Athyrium filix-femina
 Comptonia peregrina
 Dennstaedtia punctilobula
 Dryopteridaceae erythrosora
 Dryopteris marginalis
 Onoclea sensibilis
 Osmunda cinnamomea
 Osmunda claytoniana
 Osmunda regalis
 Polystichum achrostichoides
 Thelypteris noveboracensis

COMMON NAME

Maidenhair Fern (Pennsylvania native)
 Lady Fern (Pennsylvania native)
 Sweet Fern (Pennsylvania native)
 Hay-Scented Fern (Pennsylvania native)
 Wood Fern
 Marginal Wood Fern (Pennsylvania native)
 Sensitive Fern (Pennsylvania native)
 Cinnamon Fern (Pennsylvania native)
 Interrupted Fern (Pennsylvania native)
 Royal Fern (Pennsylvania native)
 Christmas Fern (Pennsylvania native)
 New York Fern (Pennsylvania native)

(2) Grasses.

SCIENTIFIC NAME

Andropogon gerardii
 Andropogon virginicus
 Calamagrostis canadensis
 Carex species
 Carex appalachia
 Carex crinita
 Carex laxiculmis
 Carex lurida
 Carex pensylvanica
 Carex plantaginea
 Carex scoparia
 Carex stricta
 Carex vulpinoidea
 Chasmanthium latifolium
 Danthonia spicata
 Deschampsia flexuosa
 Elymus hystrix
 Elymus riparius
 Elymus virginicus
 Eragrostis species
 Eragrostis spectabilis
 Glyceria striata
 Leersia oryzoides
 Schizachyrium scoparium
 Sisyrinchium angustifolium
 Sorghastrum nutans
 Sporobolus heterolepis

COMMON NAME

Big Bluestem (Pennsylvania native)
 Broomsedge (Pennsylvania native)
 Bluejoint Reedgrass (Pennsylvania native)
 Sedges
 Appalachian Sedge (Pennsylvania native)
 Long Hair Sedge (Pennsylvania native)
 Creeping Sedge (Pennsylvania native)
 Sallow Sedge (Pennsylvania native)
 Pennsylvania Sedge, Oak Sedge (Pennsylvania native)
 Seersucker Sedge (Pennsylvania native)
 Blunt broom sedge (Pennsylvania native)
 Tussock Sedge (Pennsylvania native)
 Fox Sedge (Pennsylvania native)
 Northern Sea Oats (Pennsylvania native)
 Poverty Oatgrass (Pennsylvania native)
 Tufted Hairgrass (Pennsylvania native)
 Bottlebrush Grass (Pennsylvania native)
 Riverbank Wild Rye (Pennsylvania native)
 Virginia Wild Rye (Pennsylvania native)
 Species (Lovegrass)
 Purple Love Grass (Pennsylvania native)
 Fowl mannagrass (Pennsylvania native)
 Rice Cutgrass (Pennsylvania native)
 Little Bluestem (Pennsylvania native)
 Blue Eyed grass (Pennsylvania native)
 Indiangrass (Pennsylvania native)
 Prairie Drop Seed (Pennsylvania native)

Groundcover.

SCIENTIFIC NAME

Gaultheria procumbens
 Mitchella repens
 Pachysandra procumbens
 Rhus aromatica 'Gro Low'
 Vaccinium macrocarpon

COMMON NAME

Wintergreen, Eastern Teaberry (Pennsylvania native)
 Partridgeberry (Pennsylvania native)
 Allegheny Spurge (Pennsylvania native)
 Gro Low Sumac
 Cranberry (Pennsylvania native)

(3) Vines.

SCIENTIFIC NAME

Aristolochia macrophylla
 Bignonia capreolata
 Campsis radicans
 Celastrus scandens
 Clematis virginiana
 Lonicera sempervirens
 Parthenocissus quinquefolia
 Passiflora incarnata
 Passiflora lutea
 Wisteria frutescens

COMMON NAME

Dutchman's Pipe (Pennsylvania native)
 Crossvine
 Trumpet Vine
 American Bittersweet (Pennsylvania native)
 Virgin's Bower (Pennsylvania native)
 Trumpet Honeysuckle (Pennsylvania native)
 Virginia Creeper (Pennsylvania native)
 Passionflower
 Passionflower (Pennsylvania native)
 American Wisteria (Pennsylvania native)

F. Notes.

- (1) Cultivars are acceptable upon approval of the Township's Plant Expert (registered landscape architect, certified plant horticulturist).
- (2) USDA Plant Hardiness Zone Map locates Warrington Township, PA in Zone 6b.
- (3) Plants should be selected in terms of mature size, maintenance issues, water and drought tolerance, light requirements and commercial availability.

G. References.

- (1) USDA/NRCS Plants Database: <http://plants.usda.gov> [cited April/May 2006].
- (2) Michael A. Dirr. Manual of Woody Landscape Plants, Fifth Edition. Stipes Publishing L.L.C., Chicago, Ill., Revised 1998.
- (3) Slattery, B.E., Reshetiloff, K., and Zwicker, S.M. Native Plants for Wildlife Habitat & Conservation Landscaping. Annapolis, MD: U.S. Fish and Wildlife Service, 2005.
- (4) Gary L. Hightshoe. Native Trees, Shrubs, and Vines for Urban and Rural America. Wiley, 1987.
- (5) Bowman's Hill Wildflower Preserve, New Hope, Pa.
- (6) Philadelphia Stormwater Manual v2.0, as amended.
- (7) Pennsylvania Stormwater Best Management Practices Manual, as amended.
- (8) Mehl, Geoffrey, Pennsylvania Naturally – A Gardener's Guide to Sustainable Landscaping. The Pennsylvania Project, 2016. <http://pennystone.com>.

Appendix G

Traffic Impact Study

- A. Applicability. A Traffic Impact Study (TIS) shall be required, as established by this appendix, for all preliminary subdivision and land development applications when the land development is projected to generate 200 new ADT (average daily trips), or 20 or more new peak hour trips, as established in the most recent edition of the Institute of Transportation Engineers (ITE) publication, *Trip Generation*.
- (1) The requirements of this appendix may be modified by the Board of Supervisors, or the Planning Commission if applicable, when specific requirements are determined not to be applicable to the preliminary subdivision or land development application.
 - (2) Subdivision and land development proposals.
 - a. Time of submission. The TIS shall be submitted to the Township Planning Commission and the Bucks County Planning Commission with the preliminary plan application.
 - b. Implementation. The Warrington Township Planning Commission, the Bucks County Planning Commission, the Warrington Township Engineer or transportation consultant and the Board of Supervisors shall review the impact study to analyze its adequacy in providing solutions to traffic problems that will occur, either totally or in part, as a result of the subdivision and/or land development. Transportation improvements required in order to eliminate deficient conditions on or adjacent to the site that result from the development may be mandatory for plan approval and may be attached to the conditions of approval by the Board of Supervisors. The Township may also conclude that additional off-site improvements are necessary. The developer shall have the opportunity to resubmit alternative improvements proposed for approval.
 - (3) Zoning change requests.
 - a. Time of submission. The TIS shall be submitted to the Township Planning Commission and the Bucks County Planning Commission with the application for zoning change.
 - b. Implementation. The Warrington Township Planning Commission, the Bucks County Planning Commission, the Warrington Township Engineer or transportation consultant and the Board of Supervisors shall review the impact study to analyze its adequacy in solving any traffic problems that will occur due to the proposed zoning change. The Board of Supervisors shall consider the impact study and the analysis of the impact study before the change of zoning is approved or denied.
 - (4) Conditional use and special exceptions.
 - a. Time of submission.
 - i. The TIS shall be submitted to the Planning Commission with the application for a conditional use. The TIS and application shall be submitted to the Board of Supervisors once the Planning Commission has completed their review and provided their recommendations to the Board of Supervisors.
 - ii. The TIS shall be submitted to the Planning Commission with the application for a special exception. The TIS and application shall be submitted to the Zoning Hearing Board once the Planning Commission has completed their review and provided their recommendations to the Zoning Hearing Board.
 - b. Implementation. The Board of Supervisors of Warrington Township or the Zoning Hearing Board shall consider the impact study and the analysis of the impact study before the application is approved or denied. In acting on the application, the Board of Supervisors of Warrington Township or the Zoning Hearing Board may, if adverse impacts or major problems are identified:
 - i. Reject the proposal.

- ii. Require the specific on- or off-site improvements as a condition of approval.
 - iii. Require the reduction of the intensity of use as a condition of approval.
 - iv. A combination of subsections A.(4).b.ii. And A.(4).b.iii. above.
- B. Joint studies. The Board of Supervisors, at its discretion, may request the owner to provide a fee in lieu of an individual study, so the Township can sponsor a joint traffic study. The cost of the joint study shall be shared among the owners, and the study will include a fair-share cost estimate of any recommended off-site roadway and/or intersection improvements, as well as an assessment of each development's access(es).
- C. Preparation and review. The traffic study shall be conducted under the supervision of a Professional Engineer currently registered in the State of Pennsylvania, preferably one possessing a Professional Traffic Operations Engineer certificate, as all studies must be signed and sealed. The developer shall reimburse the Township for reasonable fees and expenses incurred by the Township Traffic Engineer for the review of the developer's traffic impact study and plans.
- D. Time of submission. The traffic impact study shall be submitted to the Township and Township Traffic Engineer as part of the preliminary subdivision and land development application. The submission of the preliminary plan application shall be deemed incomplete if the required traffic impact study is not included in the submission.
- E. Purpose. A traffic impact study shall enable the Township to assess the likely traffic impact of a proposed development on the various components of the transportation system. The study shall:
 - (1) Address the safe and efficient circulation of both vehicles, pedestrians and cyclists on the site;
 - (2) Identify the impacts of development traffic at the site's accesses to public roads within the Township and provide appropriate mitigation for safe and efficient movement of vehicles, cyclists, and pedestrians thereof; and
 - (3) Identify the development's impact on the surrounding roadway network.
- F. Definitions. The following terms or phrases shall have the meanings indicated when used in the appendix:
 - (1) **STUDY AREA** — The area of land, and specific roadways and intersections, within the Township that are likely to be affected by the development.
 - (2) **NEW TRIPS** — Two-way trips added to the roadway network surrounding the site. New trips are calculated as total trips generated by the development net of pass-by trips (trips already on the roadway network) to the development.
 - (3) **MAJOR ROADWAYS** — All designated state highways within the Township, plus Township roadways, with the classification of collector road or higher.
 - (4) **MAJOR INTERSECTIONS** — All combinations of intersections of state highway with state highway, or with Township roadways classified as collector roads or higher.
 - (5) **VOLUME/CAPACITY ANALYSIS** — An analysis that compares the volume of a traffic facility to its capacity. The methodology for the analysis shall adhere to the most recent edition of the Highway Capacity Manual, or other methodology acceptable to the Township and PennDOT.
 - (6) **LEVELS OF SERVICE** — As defined by the Highway Capacity Manual, levels of service, ranging from A to F, measure the operational conditions within a traffic stream in terms of such factors as speed, travel time, delay, freedom to maneuver, traffic interruptions, comfort, and convenience.

- (7) **QUEUE ANALYSIS** — An analysis that identifies the maximum stacking of vehicles in each traffic lane, measured in feet. The analysis shall use a methodology acceptable to the Township and PennDOT.
- (8) **TRIP GENERATION** — The total count of trips to and from the subject development per unit of land use (i.e., dwelling unit, square footage, etc.) as established by the most recent edition of ITE's Trip Generation. For land uses not listed in this publication, or for those land uses with limited available trip generation data, the owner's traffic engineer shall seek guidance from the Township prior to completion of the study. For applications involving an expansion or relocation of an existing facility, actual trip generation characteristics of the existing land use may be used, as appropriate, and subject to acceptance by the Township. Other local sources of trip generation data may be acceptable, subject to the approval of the Township.
- G. Scope of study area. Prior to the initiation of the TIS, the owner shall receive approval of the scope of the study area from the Township before proceeding. The minimum requirements of the scope of the TIS area potentially affected by the proposed development (inclusive of specific roadways and intersections) are as follows:
- (1) Development driveways (accesses). All existing and proposed driveways (accesses) for the development intersecting public Township and PennDOT roadways, plus adjacent roadways, intersections, and driveways along the owner's property, or adjacent properties, which may be directly affected by vehicular, cyclist and pedestrian traffic from the development.
- H. PennDOT Traffic Impact Study. If the development site will access a state highway within the Township, the owner shall comply with PennDOT's Policies and Procedures for Transportation Impact Studies, in addition to completing the TIS required by the Township. The owner shall coordinate its scope of any traffic study required by the Township and PennDOT, so that the study can be concurrently submitted for review.
- I. Contents of the Traffic Impact Study. At the discretion of the Township, a TIS shall contain, but not be limited to the following:
- (1) Executive summary. A brief executive summary shall be provided, summarizing the traffic impact study's findings, conclusions, and recommendations.
- (2) Site and project description. This description shall identify the site, proposed land use(s), the surrounding area, and the transportation setting, including:
- A description of the size, location, proposed land uses, construction staging, and completion date of the proposed development. Additionally, the description shall include the characteristics of site users with respect to their transportation characteristics and needs, including typical peak periods of travel, use of other travel modes, and vehicle composition.
 - The existing and proposed uses of the site shall be identified in terms of zoning classification.
 - A complete description of access and circulation for the development, including, but not limited to, locations of access points and methods of traffic control.
 - Description of the adjacent external roadway system within the study area. Major intersections in the study area shall be identified and illustrated, as applicable.
 - All existing and proposed public transportation services and facilities within the study area and the surrounding area shall be documented.
 - A description of all internal roadways, existing and proposed parking facilities, and traffic control devices on all internal roads and intersections shall be provided.
 - A complete description of the pedestrian environment both internal to the site, as well as possible connections to the existing systems shall be documented. In addition, linkage to existing bicycle facilities shall also be documented.

- h. All future committed or proposed roadway and intersection improvements within the study area shall be noted. The responsible party and anticipated project schedule shall be identified for each future improvement.
- (3) Existing traffic conditions. Existing traffic conditions shall be documented for all major roadways and intersections established as part of the approved study area, and shall be based on the following:
 - a. Existing peak hour turning movement traffic volumes and pedestrian count data shall be recorded at all study area intersections, and shall encompass both the peak highway and development hours. Daily traffic volumes on the major study roadways shall be documented in the report. The report shall provide figures illustrating the peak hour turning movement traffic volumes, and documentation regarding all traffic counts, as well as any adjustments to the counts due to seasonal variations or balancing between intersections.
 - b. A volume/capacity analysis based on existing traffic volumes shall be performed during the peak highway and development hours for all study roadways and intersections. The level-of-service results of the volume/capacity analysis shall be presented graphically.
 - c. A summary of the most recent accident data for a minimum of three full calendar years within the study area shall be provided, at select locations at the discretion of the Township. The owner should contact the Township's Traffic Engineer regarding this requirement, as it will be determined on a case-by-case basis. Due to confidentiality and liability issues related to the accident analysis, this information must be provided in a separate letter and cannot be referenced or included in the study.
- (4) Future conditions without the proposed development. An evaluation of the anticipated future traffic volumes, and the ability of the roadway network to accommodate area traffic without the proposed development, shall be provided for the approved study area roadways and intersections. The analysis shall be completed for each study peak hour for the development completion year (design year) and any interim years if development phases are proposed. This evaluation shall include the following:
 - a. Peak hour traffic volumes shall be projected for the design year(s) based on traffic growth information compiled by PennDOT, Delaware Valley Regional Planning Commission, or Bucks County for the Township. Projected traffic volumes shall also include anticipated traffic growth associated with other significant area proposed developments which will be completed, or partially completed, by the design year(s), or developments under construction. All assumptions and methodologies used to forecast the future traffic volumes shall be clearly documented. Figures shall be provided in the report illustrating the peak hour turning movement traffic volumes for this future condition, and trip generation, distribution, and assignment assumptions shall be provided as well.
 - b. A volume/capacity analysis based on future without-development traffic volumes shall be performed during the peak highway and development hours for all study roadways and intersections. The level-of-service results shall be presented graphically.
 - c. Roadway and intersection improvements committed to implementation by others prior to the design year(s) shall be included in the future without- development analysis. The owner's traffic engineer shall seek guidance from the Township in determining the appropriateness of future roadway and intersection improvements.
- (5) Development trip generation. Estimates of vehicle trips generated by the proposed development shall be completed for the design year(s) peak highway and development hours, and on a daily basis. A table should be provided which clearly identifies total trips and total new trips. Pass-by trip and internalization assumptions, as applicable, should be clearly identified and discussed. Current versions of ITE's Trip Generation and Trip Generation Handbook should be used, if

appropriate to the development's land uses. Trip generation estimates based upon alternative sources (e.g., local counts of similar uses) should be clearly documented; including reasons for their use versus use of ITE published data.

- (6) Development traffic distribution and assignment. Traffic volumes generated by the proposed development shall be distributed and assigned throughout the study area for each of the study peak hours. Documentation of all assumptions used in the distribution and assignment of traffic shall be provided.
- (7) Future conditions with the proposed development and no improvements. In order to access the magnitude of the proposed development's impact on the off-site study area intersections and roadways, as well as the site access(es), an analysis shall be completed for the design year(s) with development of the site and no improvements.
 - a. Daily and peak hour traffic volumes shall be projected for the design year(s). Projected traffic volumes shall be calculated by adding the assigned development trip generation to the future traffic volumes with development on the study roadway and intersection network, including the site access(es). Figures shall be provided in the report illustrating the resultant peak hour traffic volumes with the proposed development with proposed improvements, including all turning movements.
 - b. A volume/capacity analysis based on future with-development traffic volumes with proposed improvements shall be performed during the peak highway and development hours for all study roadways and intersections including the site access(es). The level-of-service results shall be presented graphically.
 - c. A queuing analysis (maximum queues) shall be performed during the peak highway and development hours for each study intersection, including the site access(es). The results of the queuing analysis shall be presented graphically, and the available storage lengths for all existing and proposed intersection approach lanes shall be identified to determine the adequacy of these facilities to accommodate the anticipated future vehicular traffic queues.
 - d. All movements at all site accesses shall function at levels-of-service D or better with future with-development traffic volumes. If signalized, the intersection(s) overall shall also function at level-of-service D or better.
- (8) Mitigation criteria. Based on the results of the future conditions with the proposed development and no improvements, the need for mitigation improvements will then be evaluated further based upon the following criteria:
 - a. Intersections and/or roadways involving state highways. At all state highways and intersections involving state highways, the need for mitigation will be based on PennDOT's criteria as contained in their *Policies and Procedures for Transportation Impact Studies* and shall follow PennDOT's mitigation policy.
 - b. Township-maintained intersections and/or roadways. Improvements at study area intersections and/or roadways, other than the proposed site access(es), shall be presented to mitigate the impact of the proposed development traffic conditions to the LOS in future conditions without the proposed development and accommodate projected vehicle queues as noted below:
 - i. If the future without-development conditions function at LOS D or better overall and on all individual lane groups, then the future with-development conditions shall be mitigated to operate at level-of-service D or better overall and on all movements.
 - ii. If future without-development conditions function at level-of-service E overall or on any individual lane groups, then improvements shall be identified such that future with-development level-of-service conditions will be no worse than level-of-service E overall and on any individual lane group.

- iii. If future without-development level-of-service conditions are F, overall and on any individual lane group, future with-development level-of-service F conditions overall and on any individual lane group shall have no greater volume/capacity ratios and delays than future without-development conditions.
 - iv. If the existing storage lengths or spacing between intersections is inadequate to accommodate the anticipated vehicular queue with development of the site, then appropriate mitigation measures shall be provided.
- (9) Proposed improvements. A description of improvements proposed to remedy and otherwise mitigate traffic deficiencies and traffic impacts, as established by the analyses, shall be provided as follows:
 - a. The description of improvements shall describe their location, nature, and schedule, as well as the party responsible for the improvements. The listing of recommended improvements shall include improvements both internal and external to the site, as appropriate.
 - b. All design recommendations shall be consistent with the design requirements of Township and/or the guidelines of PennDOT, as appropriate, including the following:
 - i. Available safe stopping sight distance measurements shall be performed for each access, and recommendations shall be provided for any access location that does not provide sufficient sight distance in accordance with the applicable requirements, which may include relocation of the proposed access, specific traffic controls, provision of separate turn lanes, roadway geometric improvements, or turning restrictions;
 - ii. The necessity for auxiliary turn lanes at each site access intersection shall be identified based on the current design guidelines of PennDOT; and,
 - iii. All access points and pedestrian crossings shall be examined as to the need for, and feasibility of, installing traffic signals or other traffic control devices, pursuant to the guidelines and traffic signal warrants of PennDOT.
 - iv. Design recommendations on study roadways and at other study intersections shall incorporate the comparable Township and PennDOT design guidelines as subsections (9).b.i. through (9).b.iii. address for the site access(es).
- (10) Future conditions with the proposed development and recommended improvements. A description of the adequacy of the study area roadways and intersections to accommodate future traffic with development of the site with proposed improvements shall be provided. The analysis shall be completed for each study peak hour for the development completion year, and any interim years, if development phases are proposed. The evaluation shall include the following for any study area intersections and/or roadways where mitigation is required:
 - a. A volume/capacity analysis based on future with-development traffic volumes with proposed improvements shall be performed during the peak highway and development hours for all study roadways and intersections including the site access(es). The level-of-service results shall be presented graphically.
 - b. A queuing analysis (maximum queues) shall be performed during the peak highway and development hours for each study intersection, including the site access(es). The results of the queuing analysis shall be presented graphically, and the available storage lengths for all existing and proposed intersection approach lanes shall be identified to determine the adequacy of these facilities to accommodate the anticipated future vehicular traffic queues.
- (11) Conclusions and recommendations. The TIS shall conclude with a matrix comparing levels of service on each study roadway, site access intersection, and other study intersections, if appropriate, for existing conditions, future conditions without development, and future conditions with development with improvements. If the development is to be phased, all interim future conditions should be summarized. A summary of all recommended improvements should

also be provided, including the party responsible for each. Appropriate summaries should be provided indicating that all future vehicular queues can be provided within existing intersection approach lane limits or with the future improvements to be provided by the owner or others.

