

ARTICLE VII
DESIGN and CONSTRUCTION STANDARDS

Section 701. Application

The standards of design and construction in This Article shall be used to judge the adequacy of development proposals and shall be considered to be the minimum criteria in achieving the purpose and objectives of This ordinance. In addition to the standards included herein, development proposals shall also comply with such construction and material specifications as are or shall be adopted by the Board of Supervisors.

Variations or modifications to these criteria may be granted by the Township Board of Supervisors in accordance with the provisions set forth in Article XIII of this ordinance. Where questions should arise regarding the interpretation of these design standards, the determination of the Board of Supervisors shall prevail.

Section 702. General Standards

a. **Land**

No land shall be subdivided or developed for any purposes unless reasonable hazards to life, health, or property from flood, fire and disease shall have been eliminated or unless the plans for the project shall provide adequate safeguard against such hazards.

b. **Development**

Proposed projects shall be coordinated with existing nearby neighborhoods so that the community as a whole may develop harmoniously and no construction in any development is to occur until a Building Permit is obtained from the Township.

c. **Natural and Historic Features**

Every measure shall be taken to insure insofar as possible, the preservation of natural and historic features, areas and structures determined to be worthy of such preservation by the Planning Commission and to insure public access to such where appropriate.

d. **Conformance with Comprehensive Plan**

The layout or arrangement of the subdivision or land development shall conform to the Carroll Township Comprehensive Plan and any regulations or maps adopted in furtherance thereof.

Section 703. Public Streets

a. Street Pattern

- (1) The proposed street pattern shall be integrated with existing and/or officially planned streets and it shall be related to topography to produce usable lots and reasonable street grades. Streets in and bordering a subdivision or land development shall be coordinated, and be of such widths and grades and in such locations as deemed necessary to accommodate prospective traffic, and facilitate fire protection.
- (2) Where adjoining areas are not subdivided, the arrangement of streets in new subdivisions shall make provision for the proper projection of streets to the boundaries of the tract to be subdivided.
- (3) Where a development is to be constructed in phases, the arrangement of streets in each phase shall make provisions for the proper projections of streets to the boundaries of the next phase.

b. Design and Purpose

- (1) Streets shall be designed according to their function and laid out to preserve the integrity of their design in accordance with the following functional classification unless otherwise determined by the Board.
 - (a) **Arterial.** This classification includes highways which provide intra-county or inter-municipal traffic of substantial volumes where the average trip lengths are usually five miles or greater.
 - (b) **Collector.** This classification is intended to include those roadways which connect local access streets to arterial highways. They may serve as intra-county and intra-township traffic. They may serve as traffic corridors connecting residential areas with industrial, shopping and other services. They may penetrate residential areas.
 - (c) **Local Access.** This classification is intended to include streets that provide direct access to abutting land and connections to higher classes of roadways. Traffic volumes will be low and travel distances generally short.
 - (d) **Marginal Access.** This classification is intended to include local access streets which are parallel to and adjacent to arterial streets and which provide access to abutting properties and protection from through traffic.

- (e) **Alley and Service Drive.** This classification is intended to include minor streets which provide secondary access to the back or side of properties abutting a street.
 - (f) **Cul-de-Sac.** This classification is intended to include streets which have a turn-around area at their terminal. Standards presume light traffic.
 - (g) **Dead-End Street.** This classification of street is prohibited unless designed as a permanent cul-de-sac.
- (2) Streets shall be laid out according to the requirements shown in Table 1; however, additional street width may be required as determined by the Board to insure public safety and convenience in accordance with the purpose of This Ordinance.
 - (3) Where a Subdivision or Land Development abuts or contains an existing street of inadequate width, sufficient additional width shall be constructed to meet the above standards, and the street overlaid with a 1 ½" ID-2 wearing course including bituminous tack coat. The pavement section for additional width shall be as specified for proposed streets or shall meet the existing pavement thickness, whichever is thicker. Where a Subdivision or Land Development abuts or contains an existing street of inadequate pavement section, or the existing street shows signs of surface cracking or deformed cross section, said street shall be reconstructed to meet current Ordinance requirements. It shall be the burden of the applicant to document the roadway pavement section through core sampling.
 - (4) Additional right-of-way and cartway widths may be required by the Board of Supervisors to promote public safety and convenience when special conditions require it and to provide parking space in areas of intensive use.
 - (5) The slope of the crown on all streets shall be not less than one-eighth inch (1/8") per foot nor more than one-third inch (1/3") per foot.
 - (6) Streets must be surfaced to the grades and dimensions drawn on the plans, profiles, and cross-sections submitted by the applicant and approved by the Board of Supervisors. Before paving the street surface, the applicant must install the required utilities and provide, where necessary, adequate stormwater drainage for the street acceptable to the Supervisors. The pavement base, wearing surface, and shoulders must be constructed according to Township specifications; excepting, however, that for the construction of arterial roads or highways, the subdivider shall consult the Supervisors and be governed by the Pennsylvania Department of Transportation for the method of construction to be used.

- (7) For streets proposing bituminous paving mixtures, new street paving and repairs will be limited to the period April 1st to October 31st unless permission is granted by the Roadmaster.
- (8) All Loop Streets and Cul-de-Sac Streets shall comply with the following:
 - (1) Permanent Cul-de-sac streets and Loop Streets are not allowed when a Through Street is feasible. A Through Street shall be deemed feasible when it is determined that a Through Street could be designed meeting the street standards as found in the Subdivision and Land Development Ordinance.
 - (2) Temporary or Permanent Loop Streets or Cul-de-Sac Streets shall not exceed a centerline distance of 600 feet in length as measured from the centerline intersection of the Through Street to the center of the Cul-de-Sac Turnaround, or to the most distant point on the Loop Street centerline.
 - (3) The minimum Cul-de-Sac length is 250 feet. The minimum Loop Street length is 250 feet. Both measured as described in item 2 above.
 - (4) Cul-de-Sac and Loop Streets, whether existing or proposed, shall provide access to not more than twenty-five (25) dwelling units or units of occupancy, or in the case of nonresidential developments, not more than five hundred (500) average daily vehicle trips based on the latest edition of the Institute of Transportation Engineers Manual.
- (9) Existing and proposed roads designated in the Northern York Comprehensive Plan as Local Roads shall be constructed as follows:
 - (1) Fill embankments shall be keyed into existing grade
 - (2) Material for fill sections shall be free of stone greater than 4" in any dimension, and free of organic material.
 - (3) Design drawings shall detail stabilization methods used when crossing or filling on wetlands, or existing soils which are characterized by severe construction constraints according to the SCS Soil Survey of York County. Such stabilization methods shall include measures such as rolling in AASHTO #1 stone (a.k.a. # 4s) placement of geofabrics or geogrids.
 - (4) Fill shall be placed in 12" maximum lifts, compacted to 98% ssd standard proctor.

- (5) 4" Perforated PVC Underdrain with 12" AASHTO #57 stone surrounded by non woven geotextile shall be placed in areas of high groundwater and soils with anticipated high moisture content. Underdrain shall be outlet to an inlet box, a swale, ditch or other concentration of water above the normal or design flow line.
- (6) Stone Sub-base shall not be placed unless subgrade does not deflect as determined by the Township Engineer or designated representative when proof rolled with a fully loaded tandem axle dump truck. Failure to obtain Township Engineer's written approval of proof roll shall be acceptable justification for Township to refuse acceptance of dedication of proposed roadway.
- (7) Areas of failed proof roll shall be corrected to the satisfaction of the Township Engineer or designated representative and proof rolled again until approved by Township Engineer or designated representative.
- (8) Stone Sub-Base shall be 8" of 2A or 3A course aggregate fully compacted, and proof rolled again following all requirements as enumerated for sub-grade construction previously. Stone Sub-Base shall be placed only after written authorization by the Township Engineer is received, and after verification by the DAA and the Township Engineer that all manholes and valve boxes are set to proper grade, and after approval of manhole construction and water valve construction by Dillsburg Area Authority.
- (9) Roadway Base shall be 3" of ID-2 binder, or BCBC, and shall be placed immediately following placement of stone sub-base, and only after approval of manhole construction and water valve construction by Dillsburg Area Authority
- (10) Roadway Wearing Course shall be 1 1/2" of ID -2 placed on a dirt free roadway base with a full tack coat. Any areas of broken or deflected pavement shall be sawcut and reconstructed prior to the placement of the wearing course.
- (11) All areas where paving meets concrete shall be sealed with AC-20 or equivalent.

Existing or proposed roads classified other than Local Roads in the Northern York Comprehensive Plan shall also follow the above standards for local roads. However, the pavement section must be designed according to PennDOT accepted design methodologies, but in any case shall not be less than those standards established for Local Roads.

c. **Intersections**

Intersections shall be designed in accordance with the criteria shown in Table 2, and the following:

- (1) Intersections involving the junction of more than two (2) streets are prohibited. Right-angle intersections must be used wherever possible; however, in no case shall streets intersect at less than seventy-five (75) degrees (measured on the centerlines of the streets).
- (2) Proper sight lines must be maintained at all street intersections. Measured along the center line, there must be a clear sight triangle of seventy-five (75') feet (100 feet for Collector Streets and 150 feet for Arterial Streets) from the point of intersection of the two street lines, and no building or obstruction higher than thirty (30') inches above the grade of the center line of the streets shall be permitted in this area. (See Sketch in Appendix I).
- (3) Maximum grade within any intersection shall not exceed four (4%) percent in any direction, and approaches to any intersection shall follow a straight course within one-hundred (100'0") feet of the intersection.
- (4) Intersections shall be marked with two one sided street signs per street, meeting Federal and State requirements for letter sizing, and shall be made of Grade 9 retro-reflective material, mounted on square galvanized channel. A Traffic and Engineering Study is required to determine Stop and other traffic control signage locations. Stop and other traffic control signs shall be installed as recommended in the applicant's Traffic and Engineering Study and as shown on the plans. All proposed Subdivision and Land Development plans shall note that all signage, pavement markings (temporary if final paving is not complete), and traffic signals shall be installed prior to issuance of any Occupancy Permits.

d. **Sight Distance**

Sight distance must be provided with respect to both horizontal and vertical alignment in accordance with PennDOT Standards, or as follows (which ever is greater)

<u>Type of Street</u>	<u>Sight Distance</u>
Arterial	500 Feet
Collector	300 Feet
Local/Marginal Access/Alley and Service Drives/Cul-De-Sacs	200 Feet

For sight distances, height of eye three and one-half (3.5) feet to height of object six (6.0) inches. (See Sketch in Appendix I).

e. **Curves - (Horizontal)**

- (1) Where connecting street lines deflect from each other at any one point by more than five (5) degrees, the line must be connected with a true, circular curve.
- (2) The minimum radius of the centerline for the curve must be as shown in Table 1.
- (3) Straight portions of the street must be tangent to the beginning or end of curves.

f. **Curves - (Vertical)**

- (1) Vertical curves shall be used in changes of grade when the algebraic difference exceeds one (1%) percent, and shall be designed for maximum visibility.
- (2) Intersections shall be approached on all sides by leveling areas in accordance with Table 2.
- (3) The maximum rate of change of grade shall be seven (7%) percent per hundred (100') feet of road, provided that the clear sight distances specified above are maintained at all points.

g. **Slope of Banks Along Streets**

The slope of banks along streets measured perpendicular to the street center line shall be no steeper than the following:

- (1) One (1') foot of vertical measurement for three (3') feet of horizontal measurement for fills.
- (2) One (1') foot of vertical measurement for two (2') feet of horizontal measurement for cuts.

h. **Partial and Half-Streets**

The dedication of half-streets at the perimeter of new subdivisions is prohibited.

i. **Names of Streets**

Names of new streets shall not duplicate or approximate existing or platted street names, or approximate such names by the use of suffixes as "lane," "way," "drive,"

"court," "avenue." In approving the names of streets, cognizance may be given to existing or platted street names within the postal delivery district served by the local post office. New streets shall bear the same name or number of any continuation or alignment with an existing or platted street.

j. **Access by Panhandle Design**

Panhandle lots in new subdivision design is not allowed. However, it is recognized that there may be circumstances which promote the use of a panhandle lot design as the best, most practical means of access to otherwise landlocked tracts, or to allow a single lot subdivision of an excessively deep tract with little frontage. An applicant desiring the use of panhandle lots shall request permission for such design, in writing, at the time of plan submittal. The request shall be treated as a modification of ordinance requirements in accordance with Article XIII. Therefore, the Board of Supervisors, upon the recommendation of the Planning Commission, may approve the utilization of panhandle lots to provide access provided that the topography of the land to be developed and the adjacent public street shall safely accommodate the proposal. Where traffic safety would be promoted, the Township may require adjacent panhandled lots to share one access driveway and the Township may require a formal written covenant to run with the land to establish rights and responsibilities of the panhandle lot owners.

- (1) Frontage on an existing or proposed public street shall be twenty-five (25) feet for a panhandle lot whether or not shared with another lot, except where accesses to public roads existed at the time of promulgation of the ordinance, with lesser widths, but not less than twenty (20) feet.
- (2) The area of a panhandle lot for determining compliance with the minimum lot area requirements of this ordinance shall not include the area of the "panhandle". All required setbacks are relative to the interior portion of the lot, not the "panhandle".

TABLE 1**STREET DESIGN STANDARDS**

Street Type	Arterials *	Collectors*	Local Streets	<u>Cul-De-Sacs</u>²	Marginal Access
Minimum Right-of-Way Width	*	60'	50'	50'	35'-50'
Minimum Pavement Width	*	36'	30'	30'	24'
Maximum Grade (%)	*	7% ³	10% ⁴	10% ⁴	10% ⁴
Minimum Grade (%)	1.0	1.0	1.0	1.0	1.0
Minimum Radius of Curve ¹					
At Center Line	500'	300'	150'	150'	100'
Minimum Tangent Length Between Curves	*	100'	100'	100'	50'
Landscape Median	*	*	*	10' Wide 60' Long	10' Wide 60' Long

- (1) Where street lines deflect from each other more than 10 degrees
- (2) Cul-de-sac streets may not exceed 900 feet in length and shall not serve more than 20 lots, or dwelling units. They must be provided with a paved turn around with a minimum diameter of one hundred (100) feet to the outside edge of pavement and one hundred twenty (120) feet to the legal right-of-way. Landscaped Center Islands may be proposed based on turning movements.
- (3) May be increased by 1% for grades not more than 300' long.
- (4) May be increased by 2% for grades not more than 150' long.
- * Subject to PennDOT review and concurrence.

TABLE 2**INTERSECTION DESIGN STANDARDS**

Type Intersection	Arterials with Arterial*	Arterial with Collector*	Collector with Collector	Collector with Local Access	Local Access ⁽¹⁾ with Local Access
Maximum number of intersecting streets at each junction	2	2	2	2	2
Minimum center line offset at intersections opening at the same side or opposite sides of an existing or proposed street	*	800'	800'	450'	250'
Angle of intersection of street center lines	90 degrees	90 degrees	90 degrees	(2)	(2)
Length and grade of approaches to intersections where general grade is % or more (Measured from the intersecting cartway lines)	*	100'/4%	75'/4%	75'/4%	75'/4%
Minimum radius of curbs at intersection of streets	55'	45'	45'	30'	25'
Intersection clear sight triangle each center line leg	*	150'	75'	75'	75'

* Subject to PennDOT Review and Concurrence

(1) Marginal access streets have the same requirements as local access streets

(2) Shall not deviate more than 15 degrees from perpendicular

Section 704. Private Rights-of-Way

- a. A private right-of-way as the sole means of access to and from a subdivision or land development is not allowed.
- b. The Supervisors may, at the Board's discretion, grant modification of the requirement that lots or developments be accessed by a public street if the literal enforcement of said requirement will exact undue hardship because of peculiar conditions pertaining to the land in question, provided that the modification shall not be contrary to the public interest and that the purpose and intent of the ordinance is observed, and further provided that each lot or development is sufficiently accessed by a private right-of-way which shall be twenty-five (25) feet in width. The private right-of-way shall be adequately designed to safely accommodate the traffic expected from the proposed and foreseeable development, and the proposed private right-of-way shall not be required to carry significant traffic. Where accesses and rights-of-way to public roads exist, at the time of promulgation of this Ordinance, with widths of less than twenty-five (25) feet but not less than twenty (20) feet, private roads within those accesses and rights-of-way may be approved.
- c. Any application for subdivision or land development involving a private right-of-way shall be approved only at the discretion of the Township, and not as a matter of right on the part of the applicant. It shall be the duty of the applicant to request such modification, and prove adequately the need for such relief in accordance with Article XIII.
- d. Private rights-of-way shall **not** be approved if:
 - (1) A bridge or other structure is located on the private right-of-way which is not in conformity with standards determined appropriate by the Township Engineer; or
 - (2) Access to the properties serviced by the private right-of-way by emergency vehicles shall be inhibited; or
 - (3) The private right-of-way would service more than three (3) dwelling units; or
 - (4) A previous subdivision or land development has occurred on the lot or tract of land for which the private right-of-way is being requested or for any tract of land of which the subject lot or tract was a part, if such subdivision or land development occurred on or after the effective date of this Ordinance.
- e. The private right-of-way shall be improved with a dustless surface as specified on the Final Plan. When serving more than one lot or more than one dwelling unit, a minimum of 6" crushed stone base course and 3" 2A modified stone or equivalent standards as approved by the Board, properly rolled and compacted, shall be required along with a minimum cartway width of fourteen (14) feet.

- f. Clear site distance shall be provided in accordance with Section 703 and all private roads shall be geometrically designed to meet the requirements of local streets in this Ordinance.
- g. All subdivision or land development plans approved by the Township under the provisions of this subsection shall include the following notations and shall be subject to the conditions and restrictions specified therein.

RESTRICTIONS AND CONDITIONS RELATING TO PRIVATE RIGHTS-OF-WAY

The following conditions and restrictions shall be deemed to be covenants running with the land:

- 1. The private rights-of-way shown on this plan shall remain private rights-of-way and are not being offered for dedication to Carroll Township as public rights-of-way.*
- 2. Private right-of-way _____ is for the common and joint use of Lots _____ for ingress, egress, regress and utility locations. The owners of Lots _____, their heirs and assigns, shall be equally responsible for construction, maintenance, repair and snow removal of said private right-of-way.*
- 3. The owners of Lots _____, their heirs and assigns, are prohibited from creating any right or license to any adjoining landowner to use the private right-of-way for ingress, egress, regress or utility location or for any other purpose whatsoever.*
- 4. Legal title to the right-of-way shall be conveyed by separate legal description to the owner of Lot _____, subject to the joint maintenance responsibilities set forth in Note 2 hereof. A future deeds of conveyance shall describe all lots separately and contain a reference to the limitation of use of the private right-of-way as set forth in these Notes.*
- 5. Carroll Township shall have no duty, responsibility or liability relative to construction, maintenance, repair or snow removal of said private right-of-way.*
- 6. No further subdivision of Lots _____ shall be permitted unless or until the private right-of-way has been constructed and improved so as to comport in all respects with the then prevailing Carroll Township specifications, has been properly offered for dedication to the Township by the then owner thereof, and has been accepted by the Township as a public road of the Township. In such event, the right-of-way shall become a public road of Carroll Township and the conditions and restrictions set forth above shall become null and void.*
- 7. Private rights-of-way servicing Lots _____ shall not be used for ingress, egress and regress or utility location by any lot other than Lots _____. Deeds of conveyance for all other lots in the subdivision shall specifically state this restriction prohibiting any use of the private rights-of-way for any purpose by the owners of such lots, their heirs and assigns, while the same shall remain a private right-of-way.*
- 8. Financial security shall be posted for private rights-of-way to ensure completion of any improvements, in accordance with Article XII.*

Section 705. Blocks and Lots

a. General Layout

In general, the lengths, depths and shapes of blocks and lots must be determined with regard to:

- (1) Provision of adequate building sites suitable to the special needs of the type of use contemplated.
- (2) Zoning requirements as to lot sizes, dimensions, yards and other open areas.
- (3) Needs for convenient access, circulation, control and safety of street traffic.
- (4) Limitations and opportunities of topography.

Normally, blocks shall not exceed sixteen-hundred (1,600') feet nor be less than five-hundred (500') feet in length. In blocks exceeding 1,200 feet in length, a pedestrian crosswalk having a minimum easement width of 20 feet and an all-weather surface at least five feet wide may be required.

Blocks shall be of sufficient depth to permit two (2) tiers of lots, except where reverse frontage lots are necessary or in the case of "cluster" layouts or other site-specific limitations.

In non-residential areas, the block and lot layout must be designed with consideration of site conditions:

- (a) To permit the most efficient arrangement of space for present use and future expansion.
 - (b) To permit adequate, safe worker and patron access, circulation and parking, as well as loading and unloading.
- (5) When a residential subdivision or land development is proposed, a maximum of four proposed lots or dwelling units shall gain access in whole or in part via driveways connecting to existing streets for each parent tract in existence as of February 17, 2004. The remaining proposed lots or dwelling units must gain access via driveways connecting to a proposed internal street system, or internal access drive system. In the event that a proposed lot has frontage on two streets of different classification, driveway access shall be provided from the street of lesser classification.

b. **Lot Size**

The minimum lot size shall be as required by the Township's Zoning Ordinance. However, when on-lot sewage disposal systems and/or on-lot water supply systems are proposed, the required lot size shall be large enough to meet the requirements of the Pennsylvania Department of Environmental Protection. In no case shall the lot size be less than as set forth in the Zoning Ordinance.

c. **Corner Lots**

Corner lots shall be proportionally larger than other lots in order to meet required building setbacks from both streets and such shall be provided with radius corners of diagonal cutoffs substantially concentric with or parallel to the chord of the required cartway radius corners.

d. **Lot Area**

Lot descriptions may read to street centerlines, however lot areas as used herein shall not include any area within street right-of-way lines.

e. **Building Setback Lines**

The building setback lines shall conform to the requirements of the Township Zoning Ordinance provided, however, that no building line shall be less than fifty-five (55) feet from the centerline of any existing street classified as a collector under the Municipal Comprehensive Plan.

f. **Lot Width**

The minimum lot width shall be as required by the Township Zoning Ordinance, except:

- (1) Where a "flag" or "pan handle" lot(s) is proposed, the required fifty (50) foot right-of-way will not be considered the lot width.
- (2) Where a lot's property line facing a street is curvilinear, and the property line radius is less than one hundred seventy-five (175') feet the minimum lot width at the street right-of-way line shall be at least seventy-five (75%) percent of the minimum frontage as required by the zoning district in which the lot is located, or fifty (50) feet, whichever is greater, and each lot shall have a minimum width at the building setback line as required by the district in which the lot is located.

g. **Lot Frontage**

The minimum lot frontage shall be as required by the Township Zoning Ordinance except as set forth in Section 704f.

h. **Double Frontage Lots**

Double fronting lots for residential use shall be prohibited unless designed to require the lot front on and gain access from an interior street. An easement restricting access and a minimum 30' landscape screen shall be placed across the lot adjacent to the street of higher classification.

Double fronting lots for commercial use proposing access to Route 15 shall be prohibited.

i. **Lot Lines**

- (1) Lot lines shall be approximately at right angles or radial to street lines so long as reasonably shaped lots result.
- (2) Proposed lot lines shall be configured such that if one area of a lot is connected to another area of a lot via a strip of land, the connecting strip of land's width at any point as measured along the shortest path between the connecting strip's lot lines cannot be less than 75 percent of the minimum lot width for that zoning district.

j. **Street Address**

Address numbers when applicable shall be assigned to each lot by the postal authority.

Section 706. Recreational Land and Fee Requirements

a. **Purpose**

To ensure that present and future residents of the Township of Carroll will have adequate parks, recreational areas and facilities available to them, by establishing requirements for the dedication of land or a fee in lieu of such dedication to be imposed upon subdividers and land developers as authorized by the Pennsylvania Municipalities Planning Code. All land so dedicated or fees collected in lieu thereof shall be used only for the purpose of providing accessible park or recreational facilities.

b. **Applicability**

This section shall apply to all final subdivisions and land developments in Carroll Township.

c. **General Requirement**

Every final subdivision or land development shall as a condition of approval, and subject to the standards for acceptance as set forth hereafter, provide for the development of recreational areas or facilities by either the dedication of land suitable therefore or the payment of a fee in lieu of such dedication in accordance with the hereinafter established standards:

- (1) Land Dedication Requirement – Except as hereinafter provided, every owner, subdivider or developer of a subdivision or land development shall dedicate a portion of the land proposed for said development to the Township for recreational purposes, in accordance with the following standards and formula:
 - (a) Single family detached or semi-detached shall dedicate a minimum of one thousand five hundred (1500) square feet per lot or dwelling.
 - (b) Multi-family developments shall dedicate a minimum of one thousand five hundred (1500) square feet per unit.
 - (c) Conversions from single to multi-family will be subject to the standard for multi-family developments.
 - (d) Non-residential developments shall dedicate a minimum of ten (10%) percent of gross land area to recreational use.
 - (e) The subdivision or development of one (1) single-family residential lot from a larger tract shall be exempt from the dedication or fee requirements of this Ordinance; provided, however, that this exemption shall be available one time only and further subdivisions or land development from the same tract shall not be exempted.
- (2) Standards and Criteria for Dedication and Acceptance of Recreational Land
 - (a) Acceptance of dedication shall be at the option of the Board of Supervisors. In determining whether to accept or reject land offered for dedication, the Board shall consider the following factors:
 - i. All land offered for dedication shall be contiguous and located in a single area of not less than three acres in area.
 - ii. Not more than twenty-five (25%) of the offered land shall be located in a flood plain or exceed a slope in excess of eight percent (8%).

- iii. Offered land must be suitable for recreational use as a public park based upon its size, topography and soil conditions.
 - iv. Offered land shall abut and have direct access to a public road and shall be suitable for the installation of water and sewer facilities and other utilities.
 - (b) The decision of the Board of Supervisors to accept or reject dedication shall be conclusive. In the event that dedication is rejected, the developer or subdivider shall comply with the provisions herein for payment of a fee in lieu of dedication.
- (3) Fees in Lieu of Dedication
- (a) In lieu of dedication of land as aforesaid, the developer or subdivider shall pay a fee to the Township of Carroll in an amount based upon a schedule of fees adopted by resolution of the Board of Supervisors. Said fee schedule shall establish a set fee for lots and dwelling units thereon and may be revised from time to time without further amendment of this Ordinance.
 - (b) All fees hereunder shall be due and payable in full upon approval of the subdivision or land development plan or any phase or section thereof.
 - (c) Use of Land or Fees Received – All land or fees received by the Township shall be used to establish and develop recreational areas and facilities within the Township which shall be reasonably available for use and enjoyment by the residents of the development or subdivision assessed for said lands or fees. Such facilities shall not, however, be required to be within or immediately adjoining such subdivisions or developments. A separate Park and Recreation Capital account in the name of the Township shall be established to set aside the funds collected and ensure their use for recreational purposes exclusively.

Section 707. Monuments and Markers

a. Material and Size

Monuments and markers shall be constructed as follows:

	<u>Construction</u>	<u>Minimum Size</u>
Monument	Concrete or Stone	4" x 4" x 36"
Marker	Iron pipes or Iron or Steel Bars	24" x 3/4" dia.

b. Placement; Marking

Monuments and markers must be placed by a registered engineer or surveyor so that the scored or marked point coincides exactly with the point of intersection of the lines being monumented. They must be set so that the top of the monument or marker is level with the surface of the surrounding ground. Monuments must be marked on top with a copper or brass dowel.

c. Monuments; Location of.

Monuments must be set at –

- (1) one corner of a lot comprising a single lot subdivision, or at one predominant intersection of a street and a property line of a lot in a subdivision comprised of not more than 5 contiguous lots or parcels.
- (2) at least three predominant line intersections or line angle in subdivisions of more than 5 lots or parcels, and in any land development program. When any program of development and/or subdivision encompasses more than 20 acres, the Township Supervisors and/or the Township Engineer may require additional monuments at designated points.
- (3) such other points as may be required by the Township Engineer and Township Supervisors when unusual conditions may create sight problems or cause unusual deviation from normal surveying practice.

d. Markers; Location of

Markers must be set –

- (1) at the beginning and ending of curves along street property lines if not monumented.
- (2) at points where lot lines intersect curves either front or rear.

- (3) at angles in property lines of lots.
- (4) at all other lot corners.

e. **Removal**

Any monuments or markers that are removed must be replaced by a registered engineer or surveyor at the expense of the person removing them.

Section 708. Vehicular Parking Facilities, Sidewalks, Curbs and Exterior Lighting

a. **Vehicular Parking**

- 1. Parking spaces shall measure a minimum of 20' x 10', and 22' x 8' for parallel parking.
- 2. All parking lots and loading areas must be paved and curbed in accordance with the requirements of streets.
- 3. All end parking stalls must be protected with a curbed landscaped island.
- 4. Parking lots must be provided with adequate facilities to collect and convey storm water in accordance with Article X. Water shall not be allowed to concentrate at areas of pedestrian crossings.
- 5. All parking facilities must conform with the requirements of the Americans with Disabilities Act. Signs delineating handicap accessible parking spaces must be supported with a concrete filled steel pipe bollard three feet in height.
- 6. Aisles are used to access individual parking spaces and must be twenty-four feet in width.
- 7. All parking spaces must be delineated with solid painted lines no less than four inches (4") in width. Stop bars, directional signs, stop signs and all other pavement markings must conform to the Manual of Uniform Traffic Control Devices.
- 8. The minimum curb radius is four feet (4')
- 9. Lighting shall be provided for all parking lots that will be used at night, and all lighting standards must be contained within landscape islands or access drive medians, and comply with the standards set forth in this Ordinance.

10. Ten percent (10%) of the total area of the parking lot must be devoted to interior landscaping in accordance with Section 715. The total area of the parking lot shall be all areas within the perimeter of the parking lot including parking spaces, aisles, access drives, islands, and curbed areas.
11. Dead end aisles in parking areas are not allowed.
12. Parking facilities shall not be located within 10' of a lot line unless joint parking facilities are proposed.
13. For proposed residential uses, parking lots shall be provided with a design feature centered at 250' (as measured from edge of curb to edge of feature) intervals. Such a design feature may take the place of required access drives of this section. Qualifying design features shall include, but not necessarily be limited to, landscaped islands designed as 'roundabouts' (including a minimum of 40 foot radius fully landscaped with a mixture of trees, shrubs, flowers, planters, and ground cover), fountains, or community focal points such as gazebos. Complete construction drawings and provisions for perpetual maintenance shall be required.

b. **Access Drives**

Access drives shall:

1. Be required to provide access to parking lot aisles and loading/service areas of commercial and industrial uses.
2. Provide access for emergency vehicles to non-residential buildings, except Agricultural uses. Fire Lanes, when provided, shall be striped and signed "No Parking – Fire Lane".
3. Connect parking facilities to streets. In order to facilitate vehicular movement to parking facilities access aisles must be provided at an interval of twenty five parking spaces.
4. Be delineated with vertical curbing, except in areas where best management practices for stormwater are employed.
5. Have a ten (10) foot wide landscape buffer, for areas of access drives that do not have landscape islands associated with parking rows. This buffer shall meet the requirements of Section 715, except that the maximum spacing of trees is 40 feet. The buffer is not required at the face of buildings.
6. Be subject to PaDOT approval when intersecting a State Route. Copies of Highway Occupancy Permits are required prior to final plan approval.

7. Be setback one-hundred feet (100') from the intersection of any street right-of-way lines or any other access drive (as measured from nearest edge to nearest edge of pavement).
8. Be aligned along the Access Drive centerline to form an intersection with adjoining access drives or streets.
9. Have crosswalks delineated from parking areas to sidewalks along building fronts at a maximum interval of one hundred ten (110') feet along the building or sidewalk.
10. Have traffic calming features coordinated with crosswalk areas to facilitate pedestrian traffic.
11. All means of access to a property shall be classified as either a Street, Access Drive, or Driveway. Access Drives shall be required to provide access from a Street to a Parking Facility via the Parking Facilities Aisles or to any non-residential use except Agriculture.
12. Have curbing rounded by an arc with a minimum radius of thirty feet (30') or fifty-five feet (55') when truck turning movements require it.
13. Have clear sight triangles and sight distance as required for a street.
14. Have a cartway width providing for twelve (12) foot travel lanes for each direction of travel and two (2) foot shoulders. If parallel parking is provided, then an additional six (6) foot lane shall be provided for each side parallel parking is allowed. In the event an Access Drive is proposed on behalf of the Dillsburg Area Authority, the width shall be in accordance with Authority requirements.
15. Access drives may propose a landscaped median that accommodates truck turning movement, and emergency vehicle access.
16. Not exceed two (2) per lot per street frontage.
17. Meet all other standards of streets.

c. **Driveways**

Driveways are to be used to provide access from a street and a tract of residential or agricultural land serving a single dwelling unit or a farm. Driveways shall conform with the following:

1. The driveway must be designed so that there is no need for a motorist to back into public rights-of-way of Collector or Arterial streets.
2. Driveway entrances or aprons within the street right-of-way shall be surfaced to their full width with the same pavement structure as the road to

which it provides access. In the case of a paved driveway fronting on an existing road of unknown structure then the minimum pavement shall be the minimum pavement structure as required for streets.

3. Where curbed streets are proposed the driveway apron may be constructed with 6" of Class A concrete, with 6/6 welded wire fabric reinforcement, on 6" of AASHTO number 57 coarse aggregate. Plans must provide a detail of construction for review by the Township.
4. Where sidewalks are installed, or potentially could be installed, the required apron surfacing shall end at the building side of the sidewalk.
5. Driveways must be a minimum of ten feet (10') wide.
6. Driveways must not exceed two per lot for residential use and 2 per lot on any one street frontage for agricultural use.
7. Where a driveway enters a bank through a cut a retaining wall must be used, or the sideslopes of the cut must be one foot (1') vertical to two feet (2') horizontal, or flatter.
8. Driveways must meet PaDOT Title 67, Chapter 441 sight distance requirements.
9. Driveways shall be located in safe relationship to sight distance and barriers to vision, and shall not be steeper than ten (10) percent within twenty feet (20') of the edge of the street.
10. Not be within forty feet (40') of the street right-of-way line of an intersecting street and in no case less than ten feet (10') from the point of tangency when the intersecting street lines are joined by a curve.
11. Not be within ten feet (10') of a fire hydrant, catch basin or drain inlet.
12. Not be within forty feet (40') (centerline to centerline) of another driveway, except when Duplex or Townhouse units are proposed. When multiple Duplexes or Townhouses are proposed on a single lot, and maintenance/reconstruction of driveways is provided for as part of a Planned Residential Community (i.e. condominium) a driveway may be located adjacent to another driveway without separation provided the total width does not exceed twenty-four (24) feet; and provided the driveways together are separated by a minimum distance of twenty (20) feet (from edge to edge) from any other driveway. Otherwise, when multiple Duplexes or Townhouses are proposed on a single lot, or when a single duplex or Townhouse is proposed on an individual lot, individual driveways shall be separated by a minimum of six (6) feet (from edge to edge), and the maximum driveway width shall be twelve (12) feet when within ten (10) feet of the curb. Driveways serving duplex or Townhouse

units shall be located in an area between a street (or access drive) and the unit, and not adjacent to other units.

13. Not be within three feet (3') of a property line.

d. **Sidewalks**

Sidewalks are required along all existing street frontages and on both sides of proposed streets in all subdivisions and land developments.

Sidewalks shall conform with the following:

1. Sidewalk must provide access to and/or within a commercial industrial or other community facility, parking area, school bus zones, or recreation facility.
2. Sidewalk shall be provided along anticipated pedestrian traffic routes, including along parking areas for proposed residential uses.
3. Sidewalk located adjacent to streets, access drives, or parking lots, or in public rights-of-way shall be cement concrete.
4. Sidewalk which is provided off-street or off-access drives and outside of public rights-of-way may be bituminous.
5. The minimum width is four feet (4'). For areas outside of driveways the sidewalk shall have a depth of four inches (4") placed on a four inches (4") of ASHTO number 57 coarse aggregate. Concrete shall be reinforced with 6/6 welded wire fabric reinforcement.
6. Sidewalk must have a two percent (2%) cross slope to ensure proper drainage.
7. Pedestrian easements or rights-of-way may be required by the Township to facilitate pedestrian circulation or to give access to community facilities and shall have a minimum easement or right-of-way width of ten feet (10').
8. Sidewalk is required along the front of all commercial buildings.
9. Sidewalk materials and construction shall meet Carroll Township improvement specifications and PaDOT Pub 408.
10. Sidewalks shall be located to provide a minimum 5^{1/2'} tree lawn.

e. **Curbs**

Curbs shall be constructed along all existing street frontages that are contiguous to the development, both sides of proposed streets and access drives, and along the front of all non residential buildings. Curbs shall conform to the following:

1. Curb shall be vertical and constructed of in situ formed and placed Class A concrete.
2. Curb shall conform with the Americans with Disabilities Act.
3. Curb shall be constructed in accordance with approved development and/or Township plans and PaDOT specifications and roadway construction details.
4. Bituminous curb and precast curbing are not acceptable.
5. Forms for curb must be straight and true to grade.
6. Before starting work, the contractor shall stretch string lines to check the line and grade.
7. The contractor shall notify the Township for inspection of forms and base at least forty-eight hours prior to placing concrete.
8. Any curbing constructed not in accordance with this section shall be sawcut, removed and replaced at Developers expense. If pavement has been placed after the curb construction the cartway may also have to be overlaid to eliminate patching of pavement.
9. The area behind the curb shall have a two percent (2%) slope to the top of the curb.
10. Curbing shall be reinforced with 2 number 4 steel bars at all driveways, and extend three feet (3') beyond the driveway entrance.
11. The material upon which curb is to be constructed shall be thoroughly compacted. Where this subgrade is soft or spongy, the area must be over excavated to stable material and brought up to grade with PaDOT 2RC stone, compacted in 6" lifts.
12. Existing curbing that is damaged due to construction activities must be sawcut, removed and replaced.
13. Curb materials and construction shall meet Carroll Township improvement specifications and PaDOT Pub 408.

14. The minimum distance between the curb and the front of buildings (as measured from the closest part of the building front to the face of curb) shall be five (5') feet.

f. **Lighting**

- A. Each individual lot of one-half acre or less in a subdivision must have an outside post light, installed on a timer switch or a photocell, at the time a new home is built on said lot.
- B. Lighting shall be provided at all access drive entrances to non residential developments and in parking lots that are to be used at night. Lighting shall conform to the following:
 - (1) Lighting must be directed downward and inward without glare to adjacent properties or roadways.
 - (2) The maximum footcandle limit on an adjoining property or roadway shall be one foot candle at grade level.
 - (3) The minimum intensity on site shall be one and one-half footcandle (1 ½) measured at grade level.
 - (4) Canopy lighting used in areas such as gas stations, must be completely recessed.
 - (5) Wall pack lighting is not allowed on building walls that face roadways, or any residential use or zone.
 - (6) A photometric plan is required to show on-site illumination along with off-site illumination within fifty feet (50') feet of the property lines of the development.
 - (7) Locations and types of all lighting shall be shown on the plan. A detail drawing of the type of standard and fixture shall be provided.
 - (8) Intensity of Illumination is limited to 5.0 foot-candles at all areas of the site.
 - (9) The maximum height of a light standard is 25 feet.
 - (10) Street lighting within right-of-ways to be dedicated to the Township is not allowed.
- C. For proposed residential uses, lighting shall be provided for parking lots in accordance with the following:

- (1) Lighting must be directed downward and inward and without glare to adjacent properties or roadways.
- (2) The maximum foot-candle limit on an adjoining property or roadway shall be one foot candle at grade level.
- (3) Wall pack lighting is not allowed on building walls that face roadways, parking lots, or any residential use.
- (4) A photometric plan is required to show on-site illumination along with off-site illumination within fifty (50) feet of the property lines of the development.
- (5) The location and types of all lighting shall be shown on the plan. Detail drawings of the type of light standard and fixture shall be provided.
- (6) Fixtures shall be Architectural Grade.
- (7) The maximum intensity of illumination shall be 5 foot-candles at all areas of the property.
- (8) The maximum height of a light standard is 14 feet.

Section 709. Sewers and Water

- a. Sanitary Sewers shall be extended to proposed development in accordance with the Township's Act 537 plan, as amended by the Planning Module process, and in accordance with the rules and regulations of the Dillsburg Area Authority. Within the Township's Growth Boundary and Future Growth Boundary, as depicted in the Northern York County Comprehensive Plan, public sanitary sewers shall be extended to all proposed Land Development projects. Proposed projects outside the Township's Growth Boundary and Future Growth Boundary, as depicted in the Northern York County Comprehensive Plan, shall rely on private on lot sewage disposal systems, or community on lot sanitary sewer systems. If a development proposes a community on-lot sanitary sewer system, the proposed effluent disposal shall be by conventional in ground absorption area. If through detailed site investigation, the conventional in ground absorption area method of disposal is not permissible per written determination by DEP, then the proposed effluent disposal shall be via community sand mound incorporated into the site design. If detailed site investigations conducted by the applicant and reviewed by the Township and DEP, determine both of the two aforementioned disposal methods are not permissible per written determination by DEP, then the proposed effluent disposal shall be via subsurface drip irrigation. If detailed site investigations conducted by the applicant and reviewed by the Township and DEP, determine all of the three aforementioned methods of proposed effluent disposal not permissible per written

determination by DEP, then effluent disposal shall be via spray irrigation. As a last resort, after proving that none of the aforementioned effluent disposal alternatives are possible for the site, the applicant may propose effluent disposal after tertiary treatment via stream discharge.

- b. Where a community sewerage system is proposed, such system shall be subject to approval of the Pennsylvania Department of Environmental Protection before approval by the Township. All community sewerage systems shall be owned and maintained by Dillsburg Area Authority, and such ownership and maintenance responsibility shall be clearly established as a condition of all plan approvals.
- c. Where the installation of a sanitary sewer system is not required, the subdivider or owner of the lot shall provide for each lot, at the time improvements are erected thereon, a private sewage disposal system consisting of a septic tank and tile absorption field or other approved sewage disposal system. All such individual sewage disposal systems shall be constructed in accordance with the "Rules and Regulations of the Pennsylvania Department of Environmental Protection."
- d. Where a public water main supply system is within one thousand (1,000) feet of, and where water supply capacity is immediately available, the applicant shall provide the Land Development with a complete water main supply system to be connected to the existing or proposed water main supply system, if, according to the Dillsburg Area Authority, it is feasible.
- e. Where a private, community water system is proposed, such system shall be subject to the approval of the Pennsylvania Department of Environmental Protection before approval by the Township. All private, community water systems shall be owned, operated, and maintained by a perpetual entity and such ownership, operation, and maintenance responsibility shall be clearly established with the plan submittal.
- f. Fire hydrants shall be installed as an integral part of any common water system; placement of hydrants shall be as required by the agency supplying water.

Section 710. Stormwater Drainage

a. Storm Sewers

Storm sewers separate from any sanitary sewer system shall be installed when, in the opinion of the Board of Supervisors, such is deemed necessary to provide proper drainage for the subdivision or land development with such system subject to the approval of the Board of Supervisors. A state permit may be required depending upon the proposed acreage of land to be disturbed. (See Section 502.)

b. Open Drainage Ways

- (1) When open drainage ways are furnished for the collection and/or disposal of storm water, the Township shall review the capacity of such in relation to adequacy, safety, erosion and stagnation.
- (2) Where a subdivision is traversed by a water course, drainage way, channel or stream, there shall be provided a drainage easement conforming substantially with the line of such water course, drainage way, channel or stream, and of such width as will be adequate to preserve the unimpeded flow of natural drainage or for the purpose of widening, deepening, relocation, improving or protecting such drainage facilities, or for the purpose of installing a storm water sewer.

Section 711. Utility Line Installation

Where feasible as determined by the Board of Supervisors after consultation with the developer and the appropriate utility companies, electric, telephone and television transmission lines shall be placed underground. Where such lines are not placed underground, said lines shall be placed along rear lot lines to the fullest extent possible.

Section 712. Utility Easements

a. Width; Location

When easements are required for any utility serving a subdivision or land development, they must be a minimum of twenty (20) feet wide and must, to the fullest extent possible, be adjacent to, or centered on, rear or side lot lines.

b. Natural Gas Lines.

All natural gas lines must be installed in compliance with the ASA Code B31, 80 1958, as amended. The minimum distance from a natural gas line to a dwelling unit or other structure must be as required by the applicable transmission or distributing company.

c. Petroleum Lines

Between a proposed dwelling unit or other structure and the centerline of a petroleum or petroleum products transmission line which may traverse the subdivision or land development, there must be a minimum distance of 100 feet measured in the shortest distance.

Section 713. Signs and Storage Areas

a. Signs

Moderation in respect to the style, size and frequency of signs is recommended. (See Township Zoning Regulations pertaining to signs.)

b. Storage Areas

- (1) Outdoor storage areas of any type must be located to the rear of structures and must be screened by natural vegetation or fencing, in accordance with the requirements of the Zoning ordinance.
- (2) In group developments, remote screened storage areas must be provided for items infrequently used, such as recreation vehicles, etc.

c. Structure Orientation

- (1) Structures shall be grouped whenever possible so as to provide larger, more usable open space without decreasing the overall density of development.
- (2) Extra building setbacks are required at all street intersections, where deemed necessary in order to increase sight distances and to make the presence of an intersection more apparent.
- (3) Commercial structures shall be relatively central in respect to their parking areas in order to minimize required walking distance for safety and convenience. Protected pedestrian accessways shall be provided in commercial developments adjacent to residential neighborhoods.

Section 714. Traffic Impact Study (TIS)

- a. A Traffic Impact Study is required for all subdivisions and land developments which:
 1. will generate two hundred fifty (250) average daily vehicle trips or more per day, or:
 2. will generate either 100 or more new trips entering the facility or 100 more new trips exiting the facility during any one hour period.

A Traffic Impact Study is also required for all subdivisions and land developments if there are capacity, safety, or access deficiencies on the roadways within the study area as determined by Township Staff.

The number of vehicle trips generated shall be determined using the latest edition of the Institute of Transportation Engineers Trip Generation Manual.

- b. The developer shall suggest study area limits to the Township. The Township Engineer shall determine the study area limits based on the type and intensity of development; number and length/area of new roads, access drives, internal ring roads, internal access points and parking accommodations; location of site access points; any capacity, safety, or access problems previously documented for the existing roadways within the study area; and proposed transportation projects in the vicinity.
- c. As a result of the review of the proposed development the Township may determine that not all of the Traffic Impact Study elements need to be addressed. In this case, an abbreviated version, i.e., an assessment of traffic impact may be conducted. Such analysis, in the form of an executive summary, may be submitted to Township as a technical memorandum. All study element requirements which are recommended to be waived by the Township must be documented in the memorandum. In any instance when an element(s) of a Traffic Impact Study which would otherwise be required is not included, the applicant shall submit a waiver request with the memorandum for review and approval by the Township.
- d. Study Elements:
 - 1. Technical Memorandum
 - (a) A brief overview of the development project shall be provided.
 - (1) Existing land use, zoning and surrounding area.
 - (2) Describe the development, its function, size and short & long term growth potential.
 - (3) Include overall site sketch showing property boundaries and proposed access points.
 - (4) Describe existing roadways, intersections, and high volume driveways within the designated study area including geometrics etc.
 - (b) The developer, the developer's engineer and any other parties involved in the preparation of the traffic impact study shall be noted in this memorandum. The study shall be conducted under the supervision of a person who possess a Professional Engineer's license issues by the Pennsylvania State Registration Board for Professional Engineers and who shall affix a seal to the study or may be conducted by other persons as authorized by law.

- (c) A summary of the key findings and recommendations of the study shall be provided. The summary should include
 - (1) Opening year conditions with and without the development.
 - (2) Design Year condition with and without the development.
 - (3) Objectively stated opening year and design year mitigation.
 - (4) Level of Service (LOS) chart – existing, opening year & design year LOS (with and without development, and with and without mitigation).
 - (5) Recommended mitigations & responsibilities.
 - (6) Opening year improvements as well as future year improvements (onsite & offsite improvements including signals and turn lanes.
- (d) The memorandum shall serve as the executive summary of the study.

2. Introduction/Overview of the Proposed Development

- (a) The following information shall be provided in this section: characteristics of the development site; the type and intensity of the development; number and length/area of new roads, access drives, internal ring roads, internal access points, and parking accommodations; location of site access points onto existing roads; and construction staging.
- (b) The geographic limits of the study area, along with a description of any features and landmarks, shall be provided.

3. Data Collection and Existing Traffic Conditions

- (a) A description of each existing road and intersection within the study area shall be provided, and shall include right-of-way/cartway width, posted speed limits, and pavement condition. The TIS shall provide peak hour daily traffic volume counts including intersection turning movement counts at all site access points and key road intersections (AM weekday, PM weekday, site generated Saturday peak hour conditions for non-residential development, and Saturday peak hour counts of the adjacent roadway for non-residential development). Traffic counts shall include collection of truck percentages by approach. In areas where pedestrian sidewalks exist, pedestrian volumes shall be recorded.

Balanced volumes shall be used in the analysis if at all possible; if not used, potential sinks or sources of volumes along analyzed roadways shall be discussed. All traffic count data shall be less than three years old, unless otherwise approved by the Township Engineer. The Township engineer may approve older counts if there is evidence that the traffic counts have increased at a rate consistent with the background growth rate used to project current and/or future traffic volumes. Traffic data collection shall be conducted during the middle of the normal workweek, i.e. Tuesday, Wednesday, and Thursday, excluding holidays. Saturday peak hour counts shall be conducted whenever the proposed development proposes commercial uses as listed in the Zoning Ordinance. All counts shall be provided on an intersection schematic diagram. Depending on the complexity of the development, township staff shall determine the appropriate number and the length of the peak hour periods to conduct counts.

The TIS shall seasonally adjust any traffic counts conducted in November, December, January, February. Also, any project that contains a school within its study area limits shall conduct traffic counts during the normal school year.

The background growth factor for horizon year traffic projections shall be based on PennDOT's accepted background growth rates, except for US 15. The background growth factor for US 15 shall be provided by the Township and based upon historical growth rates, and/or the Northern York County Regional Comprehensive Plans Transportation Element.

- (b) All highway improvements that are guaranteed by either the Municipality or PennDOT for implementation by the project horizon year (a.k.a. design year) shall be listed.
- (c) An inventory of existing public or private transportation services available within one mile of the site shall be made and included in the study.
- (d) A capacity analysis and a determination of levels of service designation, volume/capacity descriptions, and average seconds of delay experienced by motorists at each intersection movement within the study area shall be conducted utilizing the existing signal timings. Provide a copy of the existing signal plan as an Appendix. Describe the typical operating conditions at each level of service. The analysis shall utilize the techniques described in the most current edition of the Highway Capacity Manual, Special Report 209 and PennDOT's Publication 282.

- (e) The frequency of intersection and mid-block accidents shall be examined and hazardous locations identified. Specifically, an inventory of accidents over a three (3) year period shall be conducted, and accident clustering identified.

4. Opening Year Traffic Conditions without Development

- (a) Traffic Volumes: The traffic count data must be adjusted to reflect the proposed opening year condition using the background 'Growth Factor' (percentage growth compounded annually). The method used to determine the 'Growth Factor' must be approved by the Township staff. Information sources which may be used to calculate the growth rate are previous regional transportation planning studies, traffic impact studies done for planned or recently constructed developments within the study area, the York County Comprehensive Plan, and population trend information available through the York County Planning Commission.
- (b) Projected traffic from previous TISs for planned or permitted development within the study area shall be included in the TIS.
- (c) A capacity analysis and a determination of levels of service designation, and a turning lane and queue length study shall be provided following the same requirements as the Data Collection/Existing Traffic Conditions section.

5. Background Traffic Growth/Design Year Traffic Conditions Without Development

- (a) The anticipated rate of growth per year (Growth Factor) for the study area shall be determined without the proposed development. The method used to determine the growth rate must be approved by the Township staff. Information sources which may be used to calculate the growth rate are previous regional transportation planning studies, traffic impact studies done for planned or recently constructed developments within the study area, the York County Comprehensive Plan, and population trend information available through the York County Planning Commission.
- (b) The project horizon or design year shall be a minimum of the estimated time frame from plan submission to total build-out of the development, including completion of all phases, plus ten (10) years.
- (c) Future no-build and peak hour volumes for roads and intersections within the study area shall be calculated. Intersection schematic diagrams with the calculated volumes shall also be prepared.

- (d) A capacity analysis and a determination of levels of service designation, and a turning lane and queue length study shall be provided following the same requirements as the Data Collection and Existing Traffic Conditions section. Projected traffic from previous TISs for planned or permitted development within the study area shall also be included in the TIS.

6. Development Description

- (a) Proposed Site Access: A brief description of the proposed access must be included, including location (distance from adjacent intersections) and proposed permissible movements. Include properly labeled photos of these locations in an appendix of the TIS.
- (b) Trip Generation
 - (1) The total number of vehicle trips to be generated by the site shall be estimated using the following trip generation sources: Institute of Transportation Engineers (ITE) Trip Generation Manual, most current edition; ITE Transportation and Land Development manual, most current edition; or another trip generation source approved by the Township staff. All sources used to aid in the calculation of trip generation must be referenced in the study. Trip generation analyses shall include a typical weekday including the AM peak hour, PM peak hour for residential and non-residential projects and when non-residential projects are proposed, Saturday mid-day peak hour condition of the generator and Saturday mid-day peak hour condition of the adjacent street, (if trip generation data is supplied for both Saturday conditions in the ITE) for non-residential projects.
 - (2) For commercial uses, the calculation for either pass-by or diverted link trips is required, the estimates must be justified in the report, and must be based upon the ITE Trip Generation Manual. Copies of the pass-by and internal capture trips worksheets must be included in Appendix F.
 - (3) The Township reserves the right to require a market analysis of proposed commercial entities in order to verify trip generation assumptions, if there is evidence that the ITE Trip Generation Manual volumes may not fully reflect the actual volumes of the proposed use. The TIS shall provide a listing of any proposed special planned events

that would generate traffic volumes that would be incongruous with the trip generation analysis for the land use. Said special events, and proposed mitigation measures shall be included in the TIS.

(c) Trip Distribution and Trip Assignment

- (1) The trip distribution of the site traffic flow shall be determined using one of the following methods: existing traffic or planning studies conducted in or in proximity to the study area, proportion of volumes on the existing roadways that abut the site; professional experience, or travel demand forecasting techniques using modeling such as the TransCAD Computer Model. The sources of information used to calculate trip distribution shall be provided in the study. Summarize the trip distribution percentages and trip assignments graphically and in the text for the proposed site.
- (2) Vehicle trips shall be assigned to the mainline and turning movement volumes for future conditions with the development. Acceptable sources which can be used to assign the site-generated traffic are: Institute of Transportation Engineers (ITE) Trip Generation Manual, most current edition; ITE Transportation and Land Development manual, most current edition; or another trip generation source approved by the Township staff. The assignment shall be documented in the study text.
- (3) For developments with proposed parking facilities, the distribution of traffic flow and Trip Assignments shall be calculated for access drives, internal ring roads, and internal reservoir access points, as well as the parking facilities specifically. Potential pedestrian circulation shall be treated in the same manner.

7. Opening Year Traffic Conditions with the Proposed Development

- (a) All analysis performed under the Opening Year Traffic Conditions Without the Proposed Development section shall be adjusted and recalculated to include the trip generation, trip distribution and trip assignment for the proposed development to determine opening year traffic conditions with the proposed development.
- (b) Internal vehicular, and pedestrian volumes, if applicable, shall also be provided. Schematic diagrams showing these volumes shall be provided in the TIS.

- (c) A Capacity Level of Service (LOS) Analysis and a determination of levels of service designation, and a turning lane and queue length study shall be provided following the same requirements as the Data Collection/Existing Traffic Conditions section. Projected traffic from previous TISs for planned or permitted development within the study area shall also be included in the TIS. This analysis shall include internal intersections within the study.
- 8. Project Horizon (Design) Year Traffic Conditions with the Proposed Development
 - (a) All analysis performed under the Opening Year Traffic Conditions With the Proposed Development section shall be adjusted and recalculated to show the opening year traffic volumes compounded yearly using the annual growth factor as described earlier in this Section.
 - (b) Internal vehicular, and pedestrian volumes, if applicable, shall also be provided. Schematic diagrams showing these volumes shall be provided in the TIS.
 - (c) A Capacity Level of Service (LOS) Analysis and a determination of levels of service designation, and a turning lane and queue length study shall be provided following the same requirements as the Data Collection/Existing Traffic Conditions section. Projected traffic from previous TISs for planned or permitted development within the study area shall also be included in the TIS. This analysis shall include internal intersections within the proposed development.
 - (d) The TIS shall include Turning lanes warrants queuing analyses Traffic control warrant requirements (STOP, mult-way STOP, No Parking, signalization, etc.).
- 9. Mitigation Identification and Recommendations
 - (a) The TIS shall compare the operating levels of service with average delay in seconds, between all scenarios listed within this section and summarize the results in a table included in the TIS.
 - (b) When the Design Year Traffic Conditions Without Development indicate an existing intersection within or contiguous to the project boundary operates at a level of service A, B, or C, the TIS shall identify required mitigation measures that will result in minimum operating level of service of B, C, or D, respectively, in the Design Year with development for each intersection movement, at all peak

hours analyzed, and overall. (A one letter drop in LOS is allowed). On-site and adjacent to site mitigation measures shall be paid for and included within any approved plans by the developer. The mitigation measures included in the TIS shall be consistent with what required mitigation measures are shown on the development plans.

- (c) When the Design Year Traffic Conditions Without Development indicate an existing intersection within or contiguous to the project boundary operates at a level of service D, the TIS shall identify required mitigation measures that will maintain the same operating level of service in the design year with development for each intersection movement at all peak hours analyzed, and overall. When the Design Year Traffic Conditions Without Development indicate an existing intersection within or contiguous to the project boundary operates at a level of service E or worse, the TIS shall identify required mitigation measures that will result in an estimated delay for each approach which will be no worse than the delay for the Design Year without the development, for each intersection movement, and at all peak hours analyzed. Report delay in terms of seconds. On-site and adjacent to site mitigation measures shall be paid for and included within any approved plans by the developer. The mitigation measures included in the TIS shall be consistent with what required mitigation measures are shown on the development plans.
- (d) When the Design Year Traffic Conditions Without Development indicate an existing off-site intersection operates at a level of service A, B, or C, the TIS shall identify required mitigation measures that will result in minimum operating level of service of B, C, or D, respectively, in the Design Year with development for each intersection movement, at all peak hours analyzed, and overall. A detailed itemized cost opinion shall be prepared by the developer that includes all costs associated with implementation of the mitigation measures, including (but not limited to) design, inspection, right-of-way acquisition, utility relocation, and prevailing wage rates. The overall average impact, expressed as a percentage, of the proposed development on the intersection, in the Opening Year, shall be provided. The TIS shall identify who is responsible for paying for the mitigation.
- (e) When the Design Year Traffic Conditions Without Development indicate an existing off-site intersection operates at a level of service D, the TIS shall identify required mitigation measures that will maintain the same operating level of service in the design year with development for each intersection movement at all peak hours analyzed, and overall. When the Design Year Traffic Conditions

Without Development indicate an existing off-site intersection operates at a level of service E or worse, the TIS shall identify required mitigation measures that will result in an estimated delay which will be no worse than the delay for the Design Year without the development, for each intersection movement, and at all peak hours analyzed. Report delay in terms of seconds. A detailed itemized cost opinion shall be prepared by the developer that includes all costs associated with implementation of the mitigation measures, including (but not limited to) design, inspection, right-of-way acquisition, utility relocation, and prevailing wage rates. The overall average impact, expressed as a percentage, of the proposed development on the intersection, in the Opening Year, shall be provided. The TIS shall identify who is responsible for paying for the mitigation.

- (f) Proposed new access points, or signalized intersections (on-site or contiguous to the development) shall operate at a level of service C or better in the design year. If an intersection is being relocated, then the relocated intersection shall operate at levels of service as required in section 714.d.9(b) and (c).
- (g) If signalization is an on site (or contiguous to the site) mitigation measure then the developer shall prepare a warrant analysis or agree to fund a warrant analysis.
- (h) Traffic signals proposed purely to provide access to the development shall include an agreement with the developer in a form acceptable to the Township Solicitor to provide for the developer to pay for operation and maintenance of the signal in perpetuity.
- (i) Recommended speed limits and the need and location for any traffic calming features shall be included in the TIS. The TIS recommendations shall be consistent with the proposed signage and improvements shown within the development drawings.
- (j) The TIS shall include a left turn lane into the to the site when the existing road has documented safety concerns or if there is a likelihood of impeding existing through traffic as determined by the Township.
- (k) The developer and Municipality shall prepare an agreement to effect required Traffic improvements. This agreement shall be in a form acceptable to the Township Solicitor.
- (l) The possibility of initiating or expanding transit (public or private) service and Transportation Demand Management (TDM) programs

such as ride-sharing within the study area shall be examined. This effort shall be coordinated with the Municipality, the York County Transportation Authority or an appropriate private transportation provider and the York County Planning Commission.

- (m) Any signal modifications within the US 15 corridor shall provide for signal interconnection and coordination. The Township reserves the right to identify the type and manufacturer of interconnection equipment. Interconnection of the US 15 corridor may include controller upgrades at other intersections in the system.
- (n) All proposed signal timings shall be designed such that they do not result in unreasonably short green cycles (less than 7 seconds), and shall result in a safe and practical operating signal as determined by PennDOT and the Township.
- (o) Emergency signal preemption shall be provided by the developer when the operation of the signal may result in a delay to emergency vehicles, or other safety issues justify signal preemption. The Township may choose to forgo the emergency signal preemption.

The Township reserves the right to identify other proposed signal equipment that should be included such as type and style of mast arms, signal indication types, and pedestrian indications styles.

- (p) Capacity/Level of Service (LOS) Analysis
 - (1) The proposed mitigation measures shall be tested with a Capacity Level of Service (LOS) Analysis and a determination of levels of service designation, and a turning lane and queue length study shall be provided following the same requirements as the Data Collection/Existing Traffic Conditions section. Projected traffic from previous TISs for planned or permitted development within the study area shall also be included in the TIS.
 - (2) The traffic mitigation benefits of transit and TDM improvement scenarios shall be tested in addition to the improvements mentioned in the previous paragraph, if applicable.

10. Synchro Model

- (a) The Township has developed a Synchro™ traffic model for various parts of the roadway system. When the study area of a TIS is adjacent to, or includes part of an existing Synchro model, the

Township will provide the developer with an electronic copy of the existing model. The developer shall update the Synchro Model to accurately reflect the various traffic condition scenarios required in this Section, and provide the updated model in electronic format to the Township with each revision of the TIS (including any PennDOT revisions).

Section 715. Landscaping

a. Applicable Areas

The landscaping requirements of this Section shall be applicable to all subdivision and land development plans when required by the Zoning Ordinance or under the following conditions:

1. When a residential use proposal in any zoning district will abut a roadway designated as a collector or arterial, an existing residential use, residential zoning district boundary, or any other non-residential use or zone, a minimum twenty (20) foot wide landscape screen may be required within the proposed development. A landscape screen shall be required by the Township when the residential proposal is judged to be incompatible with the existing residential uses due to the density or design of the proposed development.
2. When a residential use proposal involves double fronting lots, a minimum twenty (20) foot wide landscape screen shall be provided along the roadway right-of-way at the rear of the proposed lots.
3. Sanitary sewer pump stations in the residential zone must be surrounded by a twenty (20) foot wide landscape screen. In all other zones pump stations must be surrounded by a twenty (20) foot wide landscape buffer.
4. For proposed residential uses, parking lots shall be provided with a fifteen (15') foot minimum landscape buffer.
5. Parking Lots (including contiguous Access Drives and Aisles) shall be surrounded by a minimum of a 15' Landscape Buffer in addition to any required interior landscaping. Said Landscape Buffer shall be superseded by required building front landscaping, and may be combined with any perimeter lot Landscape Buffers or Screens provided the Parking Lot and said Landscape Buffer or Screen is contiguous.

b. **Landscape Buffer**

1. Buffer planting areas must consist of trees and a variety of shrubs and ground cover. Vegetation must be distributed throughout the entire planting buffer, to achieve complete coverage of the buffer.
2. If existing vegetation is preserved and will not be adversely impacted by the proposed development, and otherwise meets the requirements of a buffer area, no additional buffer planting is required.
3. Maximum slope of a buffer area is 25%.
4. One tree shall be provided per six hundred (600) square feet of landscaping buffer area.
5. Shrubs and groundcover must be planted such that four (4) or more shrubs are grouped together at Fifty (50) foot spacing. Plantings must be staggered and arranged in combination with the required trees to achieve a natural and pleasing appearance.
6. Raised landscape beds consisting of a mixture of shrubs, hedges and groundcover, and perennial flowers, are required along both sides of commercial driveway entrances. The raised beds must be 450 square feet in area, and each consist of a minimum of three (3) shrub groupings of at least 4 plants each, hedge plantings at 3 foot spacing for 24 feet or equivalent, 40 perennials and groundcover or annual plantings to cover the remaining area. The Township may approve plans that propose different groupings of plants, provided an equivalent number of plantings are provided.
7. Required street trees shall not count towards satisfying the planting requirements of an adjoining parallel buffer.
8. The landscape buffer shall be located between the roadway Right-Of-Way and the building setback lines of the property, and along all perimeter property lines.
9. Parking Lots, buildings, and overhead utilities, shall not encroach into Landscape Buffers. Access Drives, Driveways, Aisles, shall not be located longitudinally within a Landscape Buffer, however, they may traverse Landscape Buffers when providing access between adjoining properties, or when providing access to the property from a Street. Sidewalk shall not be located longitudinally within a Landscape Buffer. Outside berms of stormwater basins, tops of stormwater basin berms, and inside side slopes of stormwater basins may be located within Landscape Buffers provided the maximum depth of the basin from basin bottom to top of berm at any single point is limited to four (4) feet, and the maximum slope of the buffer is not exceeded as required elsewhere in this Ordinance, and the

basin bottom is located outside of the Landscape Buffer. Vegetated swales may traverse Landscape Buffers, but shall not be located longitudinally within Landscape Buffers. Non-vegetated drainage swales, ditches, and channels shall not be located within Landscape Buffers. Electric transformers shall not be located within Landscape Buffers.

10. All landscape buffer areas must be kept clean of all debris, litter, weeds and tall grass, and otherwise maintained by the landowner in accordance with the approved plan.
11. Landscape Buffers shall be constructed prior to the issuance of an Occupancy Permit for any adjacent lot unless otherwise extended in writing by the Township due to seasonal limitations on planting.

c. **Landscape Screens**

1. Landscaping screens must contain a variety of evergreen trees, shrubs, and ground cover that will comprise both low-level screening and high-level screening. Evergreen trees which are at least six feet (6') in height at a spacing of no more than ten feet (10') apart, deciduous trees spaced at forty feet (40') apart, and flowering trees at sixty feet apart shall comprise the high level screen. A mixture of shrubs and hedges comprise the low level screen. If a hedge is selected for low level screening then hedge plantings must be three foot (3') on center and a minimum three feet (3') tall. If shrubs are selected as a low level screen, then four (4) or more shrubs designed to complement each other must be grouped together at eight foot (8') spacing. Plantings must be staggered and arranged to achieve a natural appearance rigid rows of plantings forming a "wall" do not meet this requirement.
2. Fencing, mounds, or walls, when approved by the Township may be used as a substitute for the landscape screen. The fence shall consist of minimal maintenance material to an elevation of six feet (6.5'). The design elevation of the fence, wall, or berm, must be provided for review and approval of the Township. The fence must be landscaped with trees, shrubs and groundcover, in accordance with the requirements of a landscape buffer.
3. All landscape screen areas must be kept clean of all debris, litter, weeds and tall grass, and otherwise maintained by the landowner in accordance with the approved plan.
4. Parking Lots, buildings, and overhead utilities, shall not encroach into Landscape Screens. Access Drives, Driveways, Aisles, shall not be located longitudinally within a Landscape Screen, however, they may traverse Landscape Screens when providing access between adjoining properties, or when providing access to the property from a Street. Sidewalk shall not be located longitudinally within a Landscape Screen.

Underground utilities, stormwater pipes and vegetated swales may traverse a Landscape Screen provided their direction can be varied within the Landscape Screen in order to not interrupt the visual separation of the Landscape Screen. Non-vegetated drainage swales, ditches, and channels shall not be located within Landscape Screens. Outside berms of stormwater basins, tops of stormwater basin berms, and inside side slopes of stormwater basins may be located within Landscape Screens provided the maximum depth of the basin from basin bottom to top of berm at any single point is limited to four (4) feet, and the maximum slope of the Landscape Screen is not exceeded as required elsewhere in this Ordinance, and the basin bottom is located outside of the Landscape Screen. Electric Transformers shall not be located within Landscape Screens.

5. The maximum slope within a Landscape Screen shall be 25%.
6. Landscape Screens shall be constructed prior to the issuance of an Occupancy Permit for any adjacent lot unless otherwise extended in writing by the Township due to seasonal limitations on planting.

d. **Parking Lot Islands/Medians**

1. All parking lot islands must be landscaped with two (2) flowering trees, or one canopy tree, and two (2) groups of 4 shrubs per 400 square feet. Groundcover and perennials must make up the balance of the landscape island.
2. In landscape islands where light standards exist, the required trees may be moved to other areas of the site, or trees with a limited mature size may be proposed
3. Landscape Islands must be a minimum of 50 square feet in area, with no dimension less than 5'.
4. Medians proposed for streets must be completely landscaped with a mixture of trees, shrubs, groundcover, flowers, and hedges. Where it is demonstrated that minimum sight distance is not achieved due to landscaping, the landscape design may be modified by selecting low level elements to achieve required minimum sight distances.

e. **Trees and Vegetation**

1. Proposed Trees and other vegetation shall be grown in a climate similar to that of this Township, and in good health, and vigorous. They shall be free of disease, larvae, insects, and insect eggs.
2. They shall be planted, guyed, staked and handled in compliance with accepted horticultural standards and standards set by the American

Association of Nurserymen, Inc., in the American Standard for Nursery Stock, ANSIZ60, 1-1973, as amended.

3. The requirements for the measurements, branching, quality, balling and burlapping of trees shall follow code of standards recommended by the American Association of Nurserymen, Inc., in the American Standard for Nursery Stock, ANSIZ60, 1-1973, as amended.
4. The developer shall replace any dead or dying plantings.
5. All proposed trees must have a caliper of at least two (2") inches at six (6") inches above the finished grade.
6. All areas not otherwise improved shall be planted with an all season ground cover and shall be landscaped according to an overall plan.
7. Hardwood mulch can be used as cover material where plantings will eventually mature to cover the area.
8. The species of trees, shrubs and groundcover are subject to Township approval.
9. Planting trees on the outside berm of a detention pond is prohibited.
10. All plantings must be located such that their mature size does not interfere with overhead utilities or easements.
11. All trees and vegetation shall be maintained and/or replaced as required to meet the design of originally approved Landscape Plan.

f. **Street Trees**

Street trees are required for all contiguous existing and proposed streets, in accordance with the following standards:

1. Trees and tree planting must meet the standards of this ordinance.
2. Trees shall be planted between the sidewalk and curb.
3. One (1) street tree shall be provided every thirty-five (35) to forty (40) feet along the entire length of both sides of the street.
4. Street trees shall be at least twelve (12) feet from a fire hydrant, light standard, or overhead utility pole.
5. The Township may require a particular species which is better suited to street tree applications or to provide for continuity within the development or for continuity with existing nearby shade tree plantings.

6. Street Trees shall be planted prior to the issuance of an Occupancy Permit for any adjacent lot unless otherwise extended in writing by the Township due to seasonal limitations on planting.

Street Trees shall be selected from The Township's list of approved trees.

g. **Landscape Plan Design Requirements**

1. Plantings in landscape buffer areas shall be planted in natural clusters that provide privacy and a visual separation but do not block views or vistas.
2. The strategic placement of trees throughout the development to serve as a buffer against the wind and sun is encouraged for energy conservation purposes.
3. All plant materials shall be located so as not to create a potential traffic hazard. Clear sight triangles and sight distances must be maintained.
4. A detailed landscape plan consisting a schedule of planting, location, name and size of all trees, shrubs, groundcover, screens, and fencing shall be submitted as a drawing at the time of the Land Development Plan submittal.
5. Typical tree, shrub and perennial planting details must be included.
6. The plan must show all relevant features that affect landscaping to ensure that landscaping will not conflict with site features such as lighting, storm piping, and overhead utilities.

h. **Guarantee/Performance Bond**

1. Any tree or shrub which dies within eighteen (18) months of planting shall be replaced. Any tree or shrub which within eighteen (18) months of planting or replanting is deemed, in the opinion of the Township, to have grown in a manner uncharacteristic of its type, shall be replaced within thirty (30) days.
2. The developer or landowner shall deposit with the Township a sum of money, or other financial surety equal to the amount necessary to cover the cost of purchasing, planting, maintaining and replacing all vegetative materials for a period of eighteen (18) months. This condition shall be satisfied through an executed agreement between the Township and developer.
3. In lieu of a specific financial surety for landscaping, the value as stated in number two (2) above, may be incorporated into the overall financial surety established for the project. In which case, the final surety would not

be released until all planting has performed adequately for the eighteen-month period.

Section 716. Design Process for Subdivisions in the Conservation Subdivision Overlay District

- a. The following design process is required for the design of conservation subdivisions to ensure that the natural features are protected.

(1) Step 1: Delineation of Open Space Lands and Development Areas

- (a) The minimum percentage and acreage of required Open Space lands should be calculated by the applicant and submitted as part of the Sketch Plan or Preliminary Plan in accordance with the provisions of this ordinance and of the Carroll Township Zoning Ordinance.
- (b) Primary Conservation Areas comprising floodplains, wetlands and slopes over 25 percent (%) shall be delineated according to the actual boundaries of floodplains, wetlands and slopes.
- (c) Secondary Conservation Areas shall be delineated in a manner clearly indicating their boundaries as well as the types of resources included within them.
- (d) Total Open Space area requirements shall include all Primary Conservation Areas and those parts of the remaining buildable lands with the highest resource significance (Secondary Conservation Areas), as described below and in Article XII Sections 1204.a and 1204.b.
- (e) Development areas constitute the remaining lands of the tract outside of the designated Open Space areas, where house sites, streets and lots are to be delineated in accordance with steps 2, 3 and 4 below.

(2) Step 2: Location of House Sites.

- (a) Potential house sites shall be tentatively located using the proposed Open Space lands as a base map as well as other relevant data on the Existing Resources and Site Analysis Plan such as topography and soils.
- (b) Potential house sites shall be generally located not closer than 100 feet from Primary Conservation Areas and 50 feet from Secondary Conservation Areas.

- (3) Step 3: Alignment of Streets and Trails. Upon designating the house sites, a street plan shall be designed to provide vehicular access to each house, complying with the standards in Article 7 herein.
 - (a) Impacts of the street plan on proposed Open Space lands shall be minimized, particularly with respect to crossing environmentally sensitive areas such as wetlands and traversing slopes exceeding 15%.
 - (b) Steep grades and switch backs shall be minimized by aligning streets parallel to contours.
 - (c) Cul-de-sacs shall be limited to one (1) for up to fifty (50) proposed lots or dwelling units, and one (1) additional cul-de-sac for each additional fifty (50) proposed lots or dwelling units per parent tract existing on April 19, 2005. The parent tract shall be identified through addition of a note or a deed plotting of the boundary of the property.
 - (d) A preliminary network of trails shall also be shown, connecting streets with various natural and cultural features in the conserved Open Space lands. Potential trail connections to adjacent parcels shall also be shown.
- (4) Step 4: Drawing in the Lot Lines. Upon completion of the preceding three steps, lot lines are drawn as required to delineate the boundaries of individual residential lots.

Section 717. Traditional Neighborhood Design (TND) Standards

This Section specifies requirements that shall apply to all submittals proposing to develop a TND in the Apartment Office Zone as defined in the Carroll Township Zoning Ordinance. Where these requirements are contrary or inconsistent with other requirements of this Ordinance, and a TND is proposed, the requirements of this Section shall prevail, otherwise, all other requirements of this Ordinance shall remain in full force and effect.

A. Blocks and Lots

Block length as measured from edge of street right-of-way to nearest edge of street right-of-way on the same side of the street, shall not exceed 600 feet. Block depth as measured perpendicular to the block length, from edge of street right-of-way to nearest edge of street right-of-way shall not exceed 400 feet. Street layouts shall be designed to affect an interconnected and broadly rectangular pattern.

B. Circulation Standards

The road, sidewalk, and trail system shall provide functional and visual links within the TND and shall be connected to existing development and adjacent lands that are zoned to be developed. The circulation system shall provide for different modes of transportation including motor vehicles, pedestrians and bicycles.

1. Motor Vehicle Circulation

- (a) Motor vehicle circulation shall be designed to minimize conflicts with pedestrians and bicycles.
- (b) Traffic calming features such as neck downs, chicanes, speed tables, textured pavement, textured crosswalks, raised intersections, and medians designed in accordance with Pennsylvania's Traffic Calming Handbook, PennDOT Publication No. 383, or latest edition thereof, shall be used to encourage slower vehicular speeds.
- (c) Streets shall be designed and located to minimize alteration of topography, natural water bodies, wetlands, steep slopes, and woodlands.
- (d) Boulevards or Main Streets, both as provided herein, shall terminate at a natural vista, or prominent architectural focal element.
- (e) Streets shall accommodate safe pedestrian movement and bicycle traffic.

2. Street Hierarchy

- (a) Boulevard – a two way street provided with a fully landscaped and curbed median, the boulevard is a connector between residential and Neighborhood center or civic areas with parking on both sides. The Boulevard can service Professional Office, Retail, Live/Work Units, civic uses, and Multi-Family Residential uses. The Boulevard can also be used to service single family or semi-detached residential areas in place of a traditional cul-de-sac by expanding the median and designing the road to loop.
- (b) Main Street – a two way street that provides access to neighborhood centers, live/work units, retail, civic uses, and multi-family residential uses with on-street parking on both sides.

- (c) Neighborhood Street – a two way street that provides access to single family, semi-detached, and attached (i.e. townhouse style) residential uses with on-street parking on one or two sides.
- (d) Lane – a low speed two way street that provides secondary access to the rear of single family, semi-detached and attached (i.e. townhouse style) residential uses, with no parking, and may be located on an easement. Lanes are not to be dedicated to the Township.

3. Street Design

- (a) A Main Street shall end as an intersection with another Boulevard, Main, Neighborhood or existing street (not at a Lane), unless stubbed for extension into adjoining lands.
- (b) A Neighborhood Street may terminate with a cul-de-sac when exclusively serving single-family residential uses. The cul-de-sac shall have an outside curb radius of 50' feet, an inside slant (mountable) curb radius of 26 feet to provide a fully landscaped island. The number of cul-de-sacs allowed is specified elsewhere in this Ordinance. When counting residential units to determine the allowable number of cul-de-sacs, only single family residential units shall be counted.
- (c) Boulevards streets shall have a minimum centerline turning radius of 168 feet. If a Boulevard is used in single family or semi-detached residential areas in place of a traditional cul-de-sac the minimum inside curb radius shall be 26 feet.
- (d) Main Streets shall have a minimum centerline turning radius of 168 feet.
- (e) Neighborhood Streets and lanes shall have a minimum centerline turning radius of 50 feet.
- (f) To allow for emergency vehicles to turn corners, a clear zone shall be established that is free of significant obstructions.
- (g) A clear sight area for preservation of sight distance shall be maintained based on PennDOT design standards. If the required clear sight area extends beyond the right-of-way, an easement shall be provided. No other clear sight triangles are required.
- (h) Architectural grade street and pedestrian lighting is required, provisions for private maintenance must be included with recorded Homeowners Association Documents, or other maintenance

agreement acceptable to the Township and recorded in the Recorder of Deeds, York County.

4. Street Standards

- (a) Boulevard – two 12 foot travel lanes with centerline stripes; two 6 foot parking lanes on the outside of the travel lanes with 6 foot long white pavement markings delineating spaces, 36 foot minimum pavement width, 10' minimum fully landscaped median, 6 foot (minimum) tree lawn, 4 foot (minimum) sidewalk on both sides, 66 foot minimum right-of-way width.
- (b) Main street - two 12 foot travel lanes with centerline stripes; two 6 foot parking lanes with 6 foot long white pavement markings delineating spaces, 36 foot minimum pavement width, 6 foot (minimum) tree lawn (or tree wells), 6 foot (minimum) sidewalk on both sides, 60 foot minimum right-of-way width.
- (c) Neighborhood Street - two 10 foot travel lanes; one or two 6 foot parking lanes with 6 foot long white pavement markings delineating spaces, 26 foot minimum pavement width, 6 foot (minimum) tree lawn on both sides, 4 foot (minimum) sidewalk on side of road where residential units boarder that side of the street, 42 foot minimum right-of-way width.
- (d) Lane – 12 foot pavement width, no parking, no sidewalk, 5' (minimum) tree lawn on both sides, 22 foot right-of-way or easement. Provisions for private maintenance must be included with recorded Homeowners Association Documents, or other maintenance agreement acceptable to the Township and recorded in the Recorder of Deeds, York County.

C. **Driveway Standards**

Driveways proposed off of a Lane are not required to meet the minimum centerline offset distances specified elsewhere in this Ordinance. Rear driveways proposed to Live/Work units are not required to meet the minimum centerline offset distances specified elsewhere in this Ordinance.

D. **Application Procedures**

In addition to the application requirements stated elsewhere in this Ordinance, the following information is required. If this information is provided as a sketch plan (which is strongly encouraged, but not required), it may be incorporated by reference in the Preliminary Plan Submittal:

1. A color plan between 100 and 300 scale, accurately and legibly showing as base information existing and proposed roads, green space and landscaping, existing features, with a focus on showing proposed buildings with proposed uses including the acreage and percentage of each, such as but not limited to:
 - (a) Residential Single-Family Detached (show lots)
 - (b) Residential Single-Family Semi-Detached (show lots)
 - (c) Residential Single-Family Attached (Townhouses)
 - (d) Professional Office
 - (e) Apartment Building
 - (f) Mixed use Building (live-work, retail, office)
 - (g) Civic Building
 - (h) Active Adult Apartment Building

This plan shall provide the total acreage of the site, the proposed acreage and percentage of open space and buildable acreage for both the Neighborhood Center and Neighborhood Residential areas.

2. A color plan at the same scale as above, showing the same base information as above and focusing on:
 - (a) Open Space internal and external to the TND
 - (b) Primary Conservation Areas
 - (c) Secondary Conservation Areas
 - (d) Waterways and Ponds
3. A color plan at the same scale as above, showing the same base information and focusing on:
 - (a) Proposed Sidewalk including design rational for what width of walk is chosen
 - (b) Proposed interconnection with adjoining lands
 - (c) Proposed interconnection with existing pedestrian/bicycle ways.

- (d) Proposed soft paths or trails.
4. A color plan at the same scale as above, showing the same base information and focusing on and classifying proposed streets as follows:
- (a) Boulevard
 - (b) Main Street
 - (c) Neighborhood Street
 - (d) Lane

This plan shall list the physical dimensions and characteristics (i.e. curb, parking one side, etc) proposed for each of the above referenced streets.

5. If the aforesaid information is submitted as a sketch plan, then provide a color plan at the same scale as above, showing the same base information as above and focusing on concepts and proposed methods of stormwater management and areas intended to be used for stormwater management. Otherwise, the Stormwater Management Ordinance submittal requirements govern.
6. A set of architectural guidelines. It is not the intent of the Township to dictate architectural styles. However, a set of standards shall be chosen by the applicant and adhered to consistently throughout the TND. These standards should be communicated to the Township in writing and through color renderings. Standards selected shall enhance the design objectives and goals as stated both herein and in the Zoning Ordinance.
7. A signage plan showing all proposed signage. If the exact features (colors, material, content etc.) of the sign are not known, the location, sign type, and overall dimensions will satisfy this requirement.