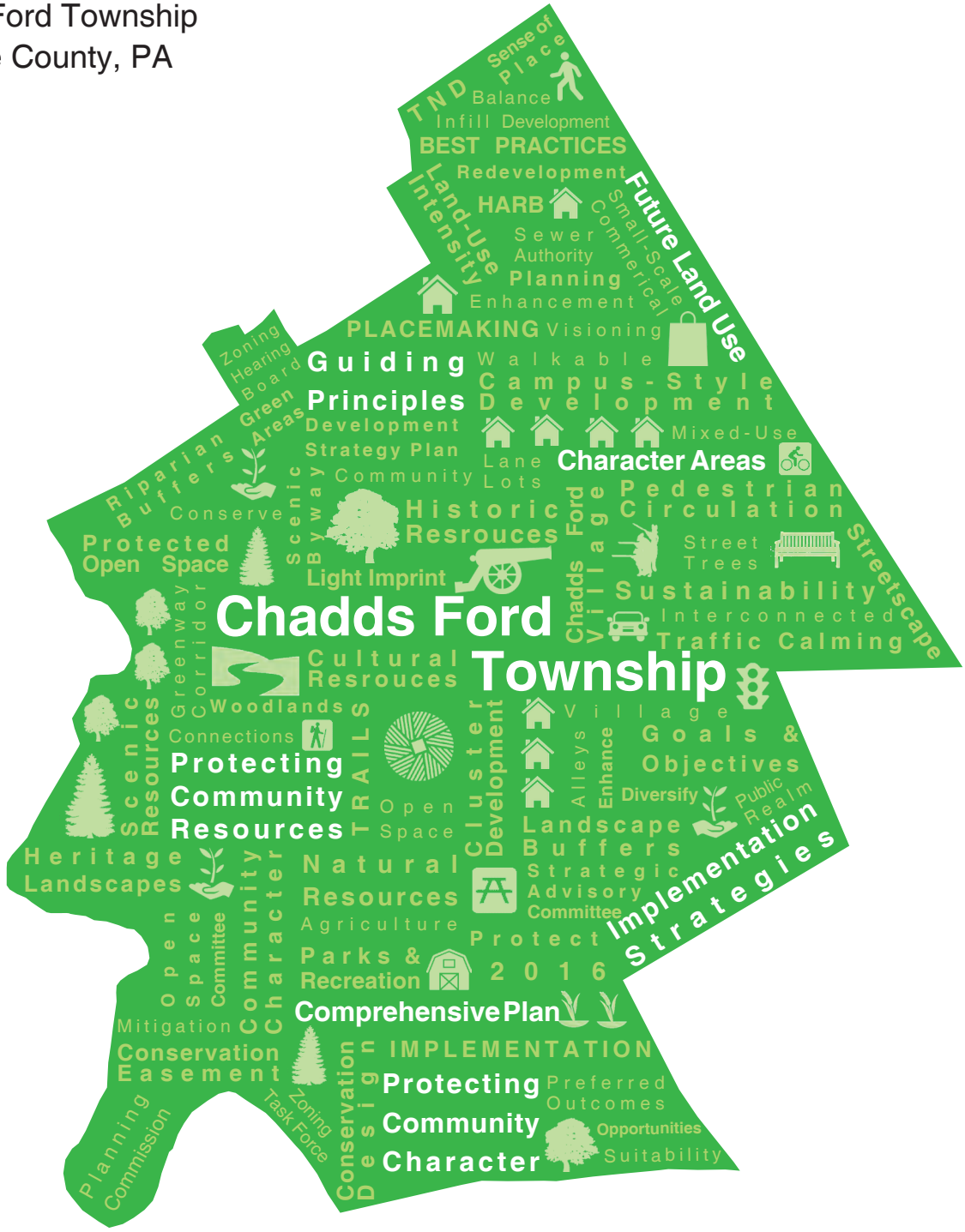
Comprehensive Plan Update 2017

Chadds Ford Township
Delaware County, PA



Prepared by:
The Chadds Ford Township Comprehensive Plan Committee
in association with:

TCA Thomas Comitta Associates, Inc. *Town Planners & Landscape Architects*

October 6, 2016; October 20, 2016; Revised: November 16, 2016
Further Revised: March 22, 2017

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1. INTRODUCTION & OVERVIEW

The names Chadds Ford and Chadds Ford Township have cache!

As one of the important gateways to Delaware County, along U.S. Route 1, Chadds Ford Township is nationally recognized as a venerable, historical place. If one were asked "What comes to mind when you hear the words 'Chadds Ford'?", it would not be surprising that the responses may be:

- The home of N.C. Wyeth and Andrew Wyeth;
- The community anchored by Chadds Ford Village;
- The place along Baltimore Pike (U.S. Route 1), through which the Brandywine Creek flows;
- The location of the Brandywine River Museum, the Sanderson Museum, and the Chadds Ford Historical Society;
- The hills and valley where a significant part of the Revolutionary War was fought on September 11, 1777; and
- The landscape renowned for its bountiful open space.

Very few communities have such an abundance of significant historical and cultural resources. Very few communities are steeped with this type of history.

In light of these heritage community characteristics, the Chadds Ford Township Comprehensive Plan Committee asserted two primary considerations when preparing this Comprehensive Plan Update 2017:

- Protecting Community Character; and
- Promoting the Protection of Community Resources.

So, how does one do this? How can Chadds Ford Township gracefully accommodate future growth and change, while protecting historical, cultural, scenic, natural, and open space resources? The Comprehensive Plan Committee decided to focus on the existing Character of the community, from the most rural landscapes in the western portion of the township, to the most developed areas along the Route 202 Corridor.

The Comprehensive Plan Committee, asserted that "one size does not fit all". In other words, given the varied "landscapes" of Chadds Ford Township, the intensity of future development should be proportionate to the character of these "landscapes". A higher intensity of development should be aligned with the Route 202 Corridor, while a lower intensity of development should predominate within the countyside west of the Route 202 Corridor.

The Comprehensive Plan was prepared with the following overarching views:

+ Development intensity should be proportionate to the character of Landscape within which it is proposed;

+ Development should be "right sized", in context with historical, cultural, scenic, natural, and open space resources; and

+ Decisions on where to develop, and how much to develop should be in sync with population projections, and related housing forecasts; and

+ Decisions on where to develop and how much to develop should be based on the existing road infrastructure, and the availability of public sewer and public water.

These overarching views are expanded upon in the chapters pertaining to Guiding Principles, and Future Land Use Character Areas. Information is presented in Chapter 5 regarding Best Practices and numerical thresholds for various development intensities.

The discoveries made during the preparation of this Comprehensive Plan Update 2017 are funneled into Chapter 6 – Implementation Strategies. Twenty-five (25) Implementation Items are listed in Chapter 6, and profiled in an Implementation schedule from 2017 through 2027.

The Best Practices can be realized through the continued leadership of the Chadds Ford Township Board of Supervisors, and the coordination with such groups as the Planning Commission, the Open Space Committee, the Sewer Authority, the Strategic Advisory Committee, and the Zoning Task Force.

In addition to public sector advocacy of the recommendations of this Comprehensive Plan Update, the Township plans to collaborate with the private sector to achieve the preferred outcomes embodied in the Future Land Use Character Areas. This collaboration will be a coordinated on-going initiative as this Comprehensive Plan is implemented over the next 10 years.

Note:

This Comprehensive Plan Update 2017 supersedes the content of the 2010 Comprehensive Plan, except as presented in Appendix B and C. Appendix B is the Natural and Historic Resource Protection Plan of 2010 (with the addition of page B-7 on Scenic Areas). Appendix C is the Transportation & Circulation Plan of 2010 (with a few updates).

2. VISIONING

The Visioning process for the Comprehensive Plan Update 2017 began in August 2015, and continued through January 2016. Two Visioning Workshops, hosted by the Chadds Ford Township Strategic Advisory Committee, were held to discuss current issues and opportunities in Chadds Ford Township.

The key work products that were created during the two Visioning Workshops appear in Appendix A, and include:

- A map of Places Loved and Places To Be Improved (see page A-2);
- A list of Places Loved ,in alphabetical order (see page A-3);
- A list of Places or Areas to be Improved, in alphabetical order (see page A-4);
- A list of Priorities growing out of a “Chadds Ford Currency” exercise (see page A-5); and
- A highlighted version of the Goals & Objectives of the 2010 Comprehensive Plan (see pages starting at A-6).

These Visioning work products were reviewed and analyzed in January 2016, to confirm the focus for the Chapters that follow. The topics that are reflected in the “High Priority Items” on page A-5 include:

+ Open Space Protection;
+ Parks & Recreational Facilities; and
+ Cultural & Historical Resources.

The identification of these three (3) High Priority Items helped to inform the Guiding Principles presented in Chapter 4.

3. POPULATION PROJECTIONS & HOUSING UNIT FORECASTS

According to the 2010 Census, Chadds Ford Township had the following Population and Housing figures:

- 2010 Population: 3,640 persons;
- 2010 Households: 1,436 households; and
- 2010 Housing Units: 1,513 housing units.

In 2010, the number of persons per household was 2.53. (Please refer to Appendix D for other 2010 Census data.)

The Delaware Valley Regional Planning Commission (DVRPC), has made the population projections below. Thomas Comitta Associates, Inc., (TCA) Town Planners & Landscape Architects, converted population to housing units, utilizing 2.53 persons per household.

	2020	2030	2040
Population Projections	3,848	4,064	4,237
Housing Unit Forecast	1,520	1,606	1,675

Therefore, if we assume that the DVRPC Population Projections are correct, the potential demand for additional housing units would be as listed below.

Housing Units

2010: 1,513 dwelling units
2020: 1,520 (7 additional dwelling units above 2010)
2030: 1,606 (93 additional dwelling units above 2010)
2040: 1,675 (162 additional dwelling units above 2010)

As a result of the relatively low number of additional dwelling units, between 7 and 162 from 2010 to 2040, the Comprehensive Plan Committee recommends that the Route 202 Corridor be the place where most of the forecasted dwelling units are built. Existing vacant properties and underperforming properties along the Route 202 Corridor could be developed and redeveloped with a variety of housing types.

Further, as indicated in Appendix F, an analysis of land zoned for multi-family dwellings was completed. Based on the existing R-A, R-M, and PRD Districts, Chadds Ford Township has 9.61% of the land area zoned for multi-family dwellings. This amount compares favorably to other communities involved in Fair Share Court Cases.

4. GUIDING PRINCIPLES

As described in the preceding Chapters, the "Guiding Principles" for the Comprehensive Plan Update 2017 were informed by the Visioning Workshops. The two (2) overarching views about Chadds Ford Township from 2017 to 2026 are:

#1: Protecting Community Character: and

#2: Promoting the Protection of Community Resources.

The Guiding Principles are intended to address important aspects of the Pennsylvania Municipalities Planning Code (MPC), including:

+ a statement of objectives concerning the future development of Chadds Ford Township (per Section 301.(a)(1) MPC); and

+ a statement of Community Development Objectives (per Section 606. MPC).

After the Comprehensive Plan is adopted, the Guiding Principles can be incorporated into the Purpose section of the Zoning Ordinance.

Utilizing the input at the Visioning Workshops, the Guiding Principles are described and illustrated on page 4-2 to emphasize:

- Protect Community Character;
- Balance "Where To Build" and "Where Not To Build", and Limit The Sprawling Effects of Development;
- Expand Protected & Designated Open Spaces;
- Conserve Heritage Landscapes;
- Protect Historic & Cultural Resources;
- Protect Natural Resources;
- Maintain Chadds Ford Village as a Distinctive Place;
- Minimize Disruption of Scenic Resources;
- Expand and Improve Opportunities for Parks & Recreation, and Promote Interconnected Pedestrian Circulation Systems;
- Promote Placemaking;
- Calm Vehicular Traffic;
- Mitigate Adverse Effects of Incongruous Development; and
- Advocate Compatible Development Along Our Boarders with Adjoining Municipalities.

Guiding Principles for: 1. Protecting Community Character, and 2. Promoting the Protection of Community Resources

Comprehensive Plan Update 2017 — Chadds Ford Township - Delaware County, PA

These Guiding Principles of Chadds Ford Township are intended to serve three overarching purposes relative to the Pennsylvania Municipalities Planning Code (MPC):

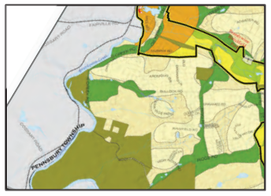
- to provide a statement of objectives concerning future development, as per Section 301.(a)(1) of the MPC;
- to supplement Section 135-2., Purpose., of the Zoning Ordinance; and
- to express the "Community Development Objectives" as per Sections 606. and 301.(a)(1) of the MPC.

Protect Community Character

Identify broad-brush "Character Areas", and establish parameters for the intensity of future land use in each "Character Area".

Balance "Where To Build" and "Where Not To Build", and Limit The Sprawling Effects of Development

Identify places to be Protected and places to be Developed; and strive to create Balance on properties to preclude excessive development.



Expand Protected & Designated Open Spaces

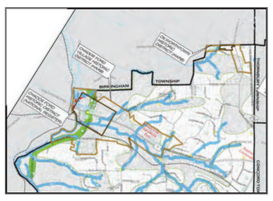
Grow Open Space sites and areas with additional Conservation Easements; and advocate the acquisition of additional land for open space to be held in perpetuity.

Conserve Heritage Landscapes

Limit encroachment of new development, so that heritage landscapes are protected and retain their agricultural, forest, and/or open meadow characteristics.

Maintain Chadds Ford Village as a Distinctive Place

Protect existing historic assets; and nurture context-sensitive infill development and redevelopment.



Protect Historic & Cultural Resources

Advocate the protection of areas around notable historic and cultural assets, to limit encroachment surrounding these resources.

Protect Natural Resources

Limit the removal of woodlands, and heritage trees; and limit the alteration of wetlands, riparian buffers, and very steep slopes.

Minimize Disruption of Scenic Resources

Limit the adverse affect of new development on viewsheds, by advocating sensitive site planning and development practices, especially along the Brandywine Creek, and along the Route 1 Corridor, and along other Scenic Roads (see page B-7 relative to Scenic Areas).

Expand and Improve Opportunities for Parks & Recreation, and Promote Interconnected Pedestrian Circulation Systems

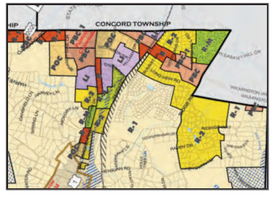
Create a balanced passive park system, inconjunction with a viable active recreation network, and advocate a network of Trails, Walkways, Sidewalks, Crosswalks, Pathways, and Boardwalks.

Promote Placemaking

Promote the planning, design, construction, and maintenance of neighborhoods that are well-designed and arranged with attractive and functional open space. (Refer to Appendix E.)

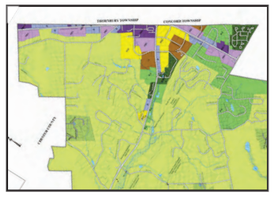
Calm Vehicular Traffic

Promote smart transportation techniques; promote a "right-road, right-place" strategy; and "tame" the daunting affect of Routes 202 and 1.



Mitigate Adverse Effects of Incongruous Development

Identify techniques for offsetting the impacts of land development through effective mitigation measures.



Advocate Compatible Development Along Our Borders with Adjoining Municipalities

Strengthen intra-municipal communications and cooperation to improve development compatibility along the borders of Chadds Ford Township.

TCA Thomas Comitta Associates, Inc. Town Planners & Landscape Architects

5. FUTURE LAND USE CONSIDERATIONS, AND FUTURE LAND USE CHARACTER AREAS

Considerations for Future Land Use in Chadds Ford Township are presented in this chapter with the following overarching views:

- to conserve and protect the natural, historical, cultural, scenic, and open space resources west of the Route 202 Corridor;
- to enhance the Viability of Chadds Ford Village; and
- to encourage attractive and functional development and redevelopment in the Route 202 Corridor.

The overall notion is to address these overarching views of Future Land Use based on the varied Character Areas of Chadds Ford Township.

A series of steps were taken to organize the perspective on Future Land Use, including:

- the identification of “Character Areas”, from most rural/natural to most intensive developed (see Character Areas C-1A through C-6 on page 5-2);
- the mapping of “Future Land Use: Character Areas” (see page 5-3);
- the illustration of the “Future Land Use: Character Areas” on the proposed Zoning Map of December 2015 (see page 5-4);
- the illustration and description of Best Practices for the varied Character Areas (see pages 5-5 to 5-20); and
- the identification of Features to Consider Within the Character Areas (see pages 5-21 to 5-38).

This Chapter is intended to be utilized when amending the Ordinances, after the Comprehensive Plan is adopted.

Notes:

1. The Description of the Character Areas is listed on the following page (5-2) under 8 headings ranging from “Natural Areas” (Character Areas C-1A), to “Intensively Surfaced Non-Residential Properties” (C-6).
2. The Character Areas are illustrated on an aerial image on page 5-3.

CHARACTER AREAS

Area	Description	Characteristics
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Lands C-2.e. Brandywine Battlefield State Park
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial

Future Land Use: Character Areas

C-1A Natural Areas

C-1B Agricultural Areas

C-2 Conservation Easement Areas, and other Hallowed Grounds

C-3 Sustantively Divided Residential Properties with Detached Homes

C-4A Sustantively Developed Higher Intensity Residential

C-4B Sustantively Divided Residential Properties with Attached Homes

C-5 Villages/Hamlets: Chadds Ford; Dilworthtown

C-6 Intensively Surfaced Non-Residential Properties

Brintons Bridge Rd
Creek Rd
Webb Rd
Oakland Rd
Rt 202
Rt 1
Harvey Rd
Baltimore Pike
Bullock Rd
Ring Rd
Ridge Rd
Smithbridge Rd

C-1A
C-1B
C-1A/1B
C-2
C-3
C-4A
C-4B
C-5
C-6

COMPREHENSIVE PLAN: 2017
Chadds Ford Township

Future Land Use: Character Areas

(A view of coordinating the Intensity of Future Land Use with the Character of the Land.)

Scale: 1"= 2,000'

N

TCA: 3-22-2017

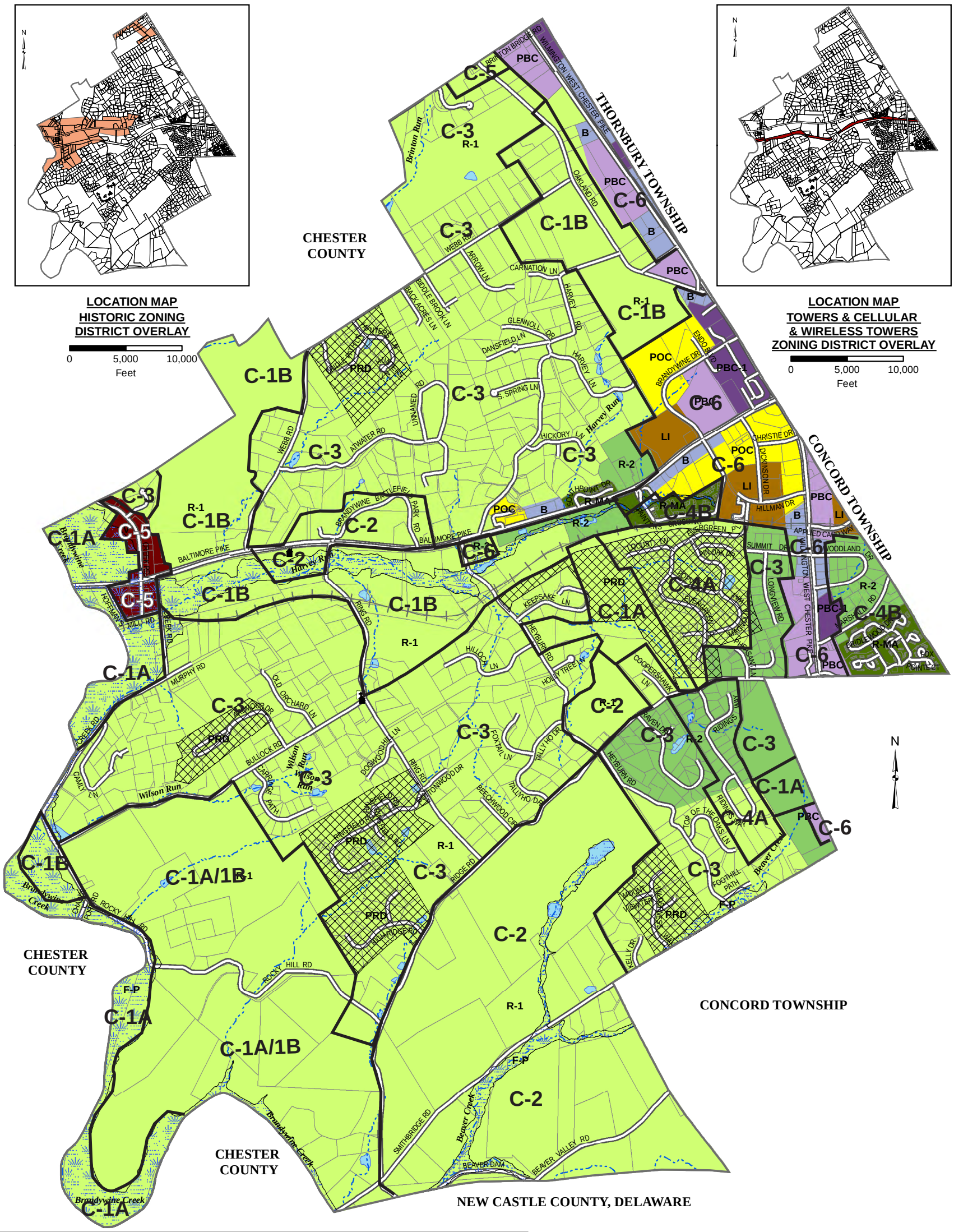
Source: Google EarthPro 10-7-11

LOCATION MAP
HISTORIC ZONING
DISTRICT OVERLAY

0 5,000 10,000
Feet

LOCATION MAP
TOWERS & CELLULAR
& WIRELESS TOWERS
ZONING DISTRICT OVERLAY

0 5,000 10,000
Feet



ZONING DISTRICTS SUMMARY									
Symbol	Designation	Description	Min. Lot Area	Front Yd.	Rear Yd.	Side Yd.	Side Yd. Agg.	Min. Lot Width	Max. Building Size
	B	Business (1)	1 acre	75 ft. (Rt 202 & 1) 55 ft. (other roads)	60 ft.	30 ft.	75 ft.	-	-
	LI	Light Industrial (1)	3 acres	100 ft.	75 ft.	75 ft.	150 ft.	-	-
	PBC	Planned Business Center (1)	4 acres	85 ft. (Rt 202 & 1) 65 ft. (other roads)	75 ft (resid.) 55 ft. (non-res)	75 ft (resid.) 55 ft. (non-res)	150 ft (resid.) 110 ft. (non-res)	-	-
	PBC-1	Planned Business Center (1)	4 acres	ft. (Rt 202 & 1) ft. (other roads)	ft (resid.) ft. (non-res)	ft (resid.) ft. (non-res)	ft (resid.) ft. (non-res)	-	-
	POC	Planned Office Center (1)	4 acres	85 ft. (Rt 202 & 1) 65 ft. (other roads)	75 ft (resid.) 55 ft. (non-res)	75 ft (resid.) 55 ft. (non-res)	150 ft (resid.) 110 ft. (non-res)	-	-
	R-1	Residence (1)	2 acres	100 ft.	50 ft.	50 ft.	100 ft.	-	-
	R-2	Residence (1)	1 acre	75 ft.	50 ft.	40 ft.	80 ft.	-	-
	R-MA	Residence Multi-Family/Apartment (1)	2 acres	75 ft.	The greater of 50 ft. or twice building height.	75 ft.	150 ft.	-	-
	V	Village	-	35 ft. or lesser of two adjoining front yards.	20 ft.	10 ft.	-	80 ft.	5,000 sq. ft.
	F-P	Flood Plain (overlay) (1) (2)	-	-	-	-	-	-	-
	H	Historic (overlay) (1)	-	-	-	-	-	-	-
	PRD-1	Planned Residential Devel. 1 (1) (3) (overlay)	1 acre	35 ft.	35 ft.	15 ft.	40 ft.	-	-
	PRD-2	Planned Residential Devel. 2 (1) (3) (overlay)	1 acre	35 ft.	35 ft.	15 ft.	40 ft.	-	-
	T	Towers & Cellular & Wireless Towers (overlay) (1)	-	-	-	-	-	-	-
		Township Owned Property							
		Church or Parish							
		Township Boundary							
		Road							
		Railroad Tracks							
		Stream							
		Body of Water							

ZONING MAP for Chadds Ford Township

Delaware County Pennsylvania

Notes:
(1) See Township Zoning Ordinance for specific requirements or special exceptions not listed in the above chart.
(2) Flood Plain Boundary delineated from 100 year floodline as identified by FEMA's flood insurance rate maps, dated September 2015.
(3) For existing PRD's shown on plan, check approved subdivision / land development plans for the bulk and area dimensions.

0 1,250 2,500 3,750 5,000
Feet

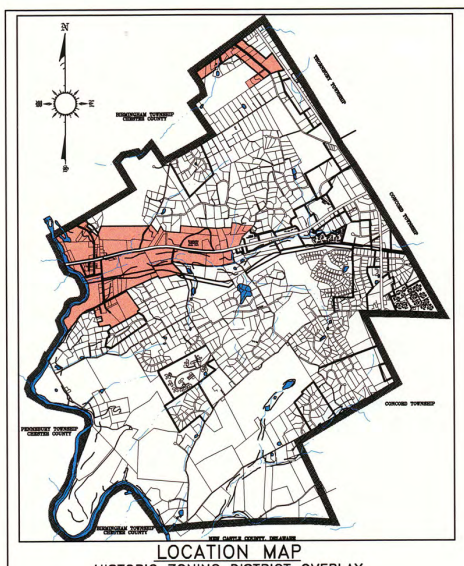
Prepared by: Delaware County Planning Department January 2017

Disclaimer: This map is for analytical purposes only. The reliability of this map depends on the accuracy of the underlying data sources which have not been verified.

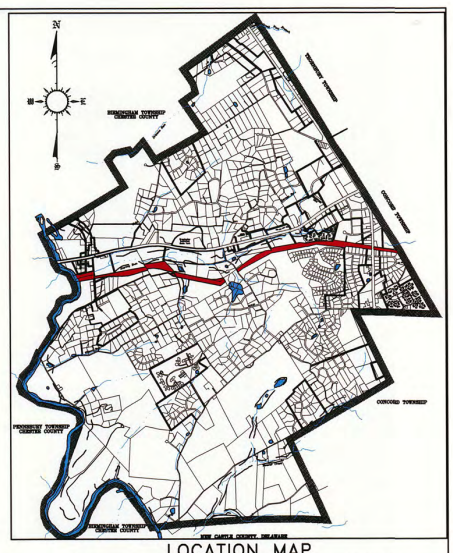
Future Land Use: Character Areas on Proposed Zoning Map

- **C-1A** Natural Areas
- **C-1B** Agricultural Areas
- **C-2** Conservation Easement Areas, and other Hallowed Grounds
- **C-3** Sustantively Divided Residential Properties with Detached Homes
- **C-4A** Sustantively Developed Higher Intensity Residential
- **C-4B** Sustantively Divided Residential Properties with Attached Homes
- **C-5** Villages/Hamlets: Chadds Ford; Dilworthtown
- **C-6** Intensively Surfaced Non-Residential Properties

TCA: 10-20-2016; Revised 3-22-2017



LOCATION MAP
HISTORIC ZONING DISTRICT OVERLAY
SCALE: 1" = 4,000'



LOCATION MAP
TOWERS & CELLULAR & WIRELESS TOWERS
ZONING DISTRICT OVERLAY
SCALE: 1" = 4,000'

ZONING MAP
FOR
Chadds Ford Township

BIRMINGHAM TOWNSHIP
CHESTER COUNTY

THORNBURY TOWNSHIP

CONCORD TOWNSHIP

PENNSBURY TOWNSHIP
CHESTER COUNTY

BIRMINGHAM TOWNSHIP
CHESTER COUNTY

NEW CASTLE COUNTY, DELAWARE

Brinton Run
Harvey Run
Wilson Run
Beaver Creek
Brandywine Creek - West Branch
Brandywine Creek

Brandywine Battlefield State Park
Springhill Farms

ZONING DISTRICTS SUMMARY

Symbol	Designation	Description	Min. Lot Area	Front Yd.	Rear Yd.	Side Yd.	Side Yd. Agg.
	B	Business (1)	1 acre	75 ft. (Rt 202 & 1) 55 ft. (other roads)	60 ft.	30 ft.	75 ft.
	B-1	Business (1)	acre	ft. (Rt 202 & 1) ft. (other roads)	ft.	ft.	ft.
	BPO	BALTIMORE PIKE (OVERLAY)	–	–	–	–	–
	LI	Light Industrial (1)	3 acres	100 ft.	75 ft.	75 ft.	150 ft.
	PBC	Planned Business Center (1)	4 acres	85 ft. (Rt 202 & 1) 65 ft. (other roads)	75 ft (resid.) 55 ft. (non–res)	75 ft (resid.) 55 ft. (non–res)	150 ft (resid.) 110 ft. (non–res)
	PBC-1	Planned Business Center (1)	acres	ft. (Rt 202 & 1) ft. (other roads)	ft (resid.) ft. (non–res)	ft (resid.) ft. (non–res)	ft (resid.) ft. (non–res)
	POC	Planned Office Center (1)	4 acres	85 ft. (Rt 202 & 1) 65 ft. (other roads)	75 ft (resid.) 55 ft. (non–res)	75 ft (resid.) 55 ft. (non–res)	150 ft (resid.) 110 ft. (non–res)
	R-1	Residence (1)	2 acres	100 ft.	50 ft.	50 ft.	100 ft.
	R-2	Residence (1)	1 acre	75 ft.	50 ft.	40 ft.	80 ft.
	R-A	Residence/Apartment (1)	2 acres	100 ft.	50 ft or 2x the height of apart. which ever is greater	50 ft or 2x the height of apart. which ever is greater	100 ft.
	R-M	Residence/Multi–Family (1)	2 acres	75 ft.	50 ft.	50 ft.	100 ft.
	F-P	Flood Plain (overlay) (1) (2)	–	–	–	–	–
	H	Historic (overlay) (1)	–	–	–	–	–
	PRD-1	Planned Residential Devel. 1 (1) (3) (overlay)	1 acre	35 ft.	35 ft.	15 ft.	40 ft.
	PRD-2	Planned Residential Devel. 2 (1) (3) (overlay)	1 acre	35 ft.	35 ft.	15 ft.	40 ft.
	T	Towers & Cellular & Wireless Towers (overlay) (1)	–	–	–	–	–
		Township Owned Property					
†		Church or Parish					
		Township Boundary					
		Township or State Road					
		Private Road					
		Undedicated Right–of–Way					
		Railroad Tracks					
		Utility Easement					
		Stream or Body of Water					

REVISION:

DATE	ORDINANCE No.	DESCRIPTION
08/20/99	All post ord. to #95 (dated 8/8/97) & all post zoning ord. to #64(A)(dated 4/17/88)	Verified all post zoning & ordinances changes and updated zoning map to reflect said changes
03/16/01	Ordinance #64(N)	Added Ordinance #64(N) to map & minor street revisions

NOTES:
(1) SEE TOWNSHIP ZONING ORDINANCE FOR SPECIFIC REQUIREMENTS OR SPECIAL EXCEPTIONS NOT LISTED IN ABOVE CHART.
(2) FLOOD PLAIN BOUNDARY DELINEATED FROM 100 YEAR FLOOD LINE AS IDENTIFIED BY FEMA'S FLOOD INSURANCE RATE MAPS, DATED SEPTEMBER 30, 1993.
(3) FOR EXISTING PRD'S SHOWN ON PLAN, CHECK APPROVED SUBDIVISION / LAND DEVELOPMENT PLANS FOR THE BULK AND AREA DIMENSIONS.

STREET INDEX KEY

STREET NAME	GRID
Ardmoor Drive	B5
Arrow Lane	C2, D2
Atwater Road	B4, C3, C4
Back Acres Lane	C2, C3
Baltimore Pike	A4,B4,C4,D4,E4,E3,F3
Beaver Dam Road	C8
Beaver Valley Road	C8, D8, E8, E7
Beech Wood Circle	C6, D6
Bellefair Lane	C1
Briddebrook Lane	C2
Brandywine Drive	E3
Bride Path	C3
Bridewood Drive	F5
Brintons Bridge Road	C1, D1
Bullock Road	A6, B6, B5, C5
Buttonwood Drive	C6
Camly Lane	A5, A6
Carnation Lane	D2
Carriage Path	B5, B6
Chadds Ford Commons	D4
Chadds Ford Road	A6
Christy Drive	E3, F3
Coopers Hawk Lane	D5, E5
Creek Road	A4, A5, A6
Crestline Court	F5
Dansfield Lane	D3
Dickenson Drive	E3, E4
Dogwood Hill Lane	C5, C6
Eagles Circle	E5
Fawn Lane	D7
Foothill Path	E6
Fox Point Court	F5
Fox Tail Lane	D5
Glennoll Drive	D3
Grouse Trail	E5
Harvey Lane	D3, E3
Harvey Road	C4, D4, D3, D2
Heyburn Road	C4, D4, D5, D6, E6
Hickory Lane	D3, D4
High Ridge Road	B7, C7, C6
Hillman Drive	E4, F4
Hillock Lane	C5, D5
Holly Tree Lane	D5
Hunters Lane	C3
Keepsake Lane	D5, D4
Kelly Drive	D7
Longview Road	E4, E5
Loop Road	E3
Maple Road	A4
Marshall Road	F4, F5
Meadow Court	F5
Meadow Lane	C3
Mill Road	A4
Mountain View Trail	D6, E6
Murphy Road	A5, B5
North Glen Drive	F5
Oakland Road	C1, D1, D2, E2
Old Orchard Lane	B5
Pheasant Lane	E5
Painters Crossing Condos.	E5
Pheasant Hill Drive	F5
Pine Lane	D3
Raven Drive	D8, E8, E6, D6, D5, E5, F5
Ridge Road	A4
Ridings Boulvard	E5
Ridings Way	E5, E6
Ring Road	B4, C4, C5, C6
Rocky Hill Road	A6, A7, B7, C7
Route 100	A6, A5, A4
Summit Drive	E4, F4
Smith Bridge Road	B8, C8, C7, D7, E7, E6, F6
South Point	D4
Southview Path	E6
Spring Hill Farms	F5
Spring Lane	D3
Springhill Drive	F5
Station Way Road	A4
Tally Ho Drive	D5, D6
Tanglewood Lane	D3, D4
Top of the Oaks	E6
Tullochard Road	A5
U.S. Route 1	A4, B4, C4, D4, E4, E3, F3
U.S. Route 322	D1, D2, E2, E3, F3
Upper Bank Drive	A4
Walnut Ridge Lane	C6
Webb Road	B4, B5, C3, C2, D2
Wilderness Way	E6, E7
Wilm.–West Chester Pike (Route 202)	F3, F4, F5, F6
Wilm.–West Chester Pike (Route 202 & 322)	D1, D2, E2, E3, F3
Windfield Court	F5
Woodland Drive	F4

PARK NAME	GRID
Brandywine Battlefield State Park	B4, C4

GRAPHIC SCALE
1000 0 500 1000 2000 4000
(IN FEET)
1 inch = 1000 ft.

Future Land Use: Character Areas on Existing Zoning Map

- **C-1A** Natural Areas
- **C-1B** Agricultural Areas
- **C-2** Conservation Easement Areas, and other Hallowed Grounds
- **C-3** Sustantively Divided Residential Properties with Detached Homes
- **C-4A** Sustantively Developed Higher Intensity Residential
- **C-4B** Sustantively Divided Residential Properties with Attached Homes
- **C-5** Villages/Hamlets: Chadds Ford; Dilworthtown
- **C-6** Intensively Surfaced Non-Residential Properties

TCA: 3-22-2017

5-4A

FUTURE LAND USE: CHARACTER AREAS & BEST PRACTICES

Transitional Characteristics from Lower Intensity Development to Higher Intensity Development.

Note: According to the Pennsylvania Municipalities Planning Code (MPC), Act 247 As Amended, and Chapter III Comprehensive Plan, Section 301.(a)(2), **a Plan for Land Use may include provisions for the amount, intensity, and character of land use.**

Chadds Ford Township Comprehenisve Plan Advisory Committee

C-1A/C-1B/C-2:
Natural, Agricultural, Conservation Easement, and Hallowed Grounds

Best Practices & Models: Chadds Ford Township

Big Bend

Emblematic Farm

Overview:

1. A “Light Imprint” approach to land conservation is most appropriate in the western portion of Chadds Ford Township.
2. The protection of natural, historic, and cultural resources is best achieved with a “Light Imprint” outcome.

Recommendations & Best Practices:

1. “Tread Lightly” on Mother Nature.
2. Protect critical lands and their natural, historic, and cultural environments.
3. Strive for Sustainability with the conservation of agricultural lands.

Brandywine Battlefield State Park

Hallowed Ground

C-3: Substantively Divided Residential Properties with Detached Homes

Best Practices & Models: Ship Carpenter Square (Lewes, DE)

Ship Carpenter Square Neighborhood

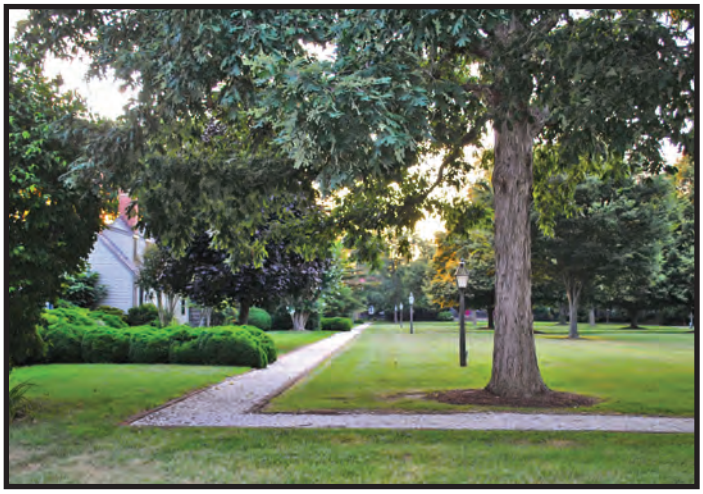
Central Green at Ship Carpenter Square

Overview:

1. Subdivisions should be planned, designed, and built with great attention to the needs pertaining to the functionality and attractiveness of neighborhoods.
2. Clustering of homes around viable open space creates a Campus-Style neighborhood.

Recommendations & Best Practices:

1. Strengthen Ordinances by adding effective Cluster Development provisions.
2. Position buildings around common Open Space.
3. Design and build Greens as a usable type of Open Space.
4. Include pedestrian amenities within common Open Space, such as walkways, shade trees, benches, street lights, pavilions, and gazebos.
5. Utilize the Placemaking Principles in Appendix E.



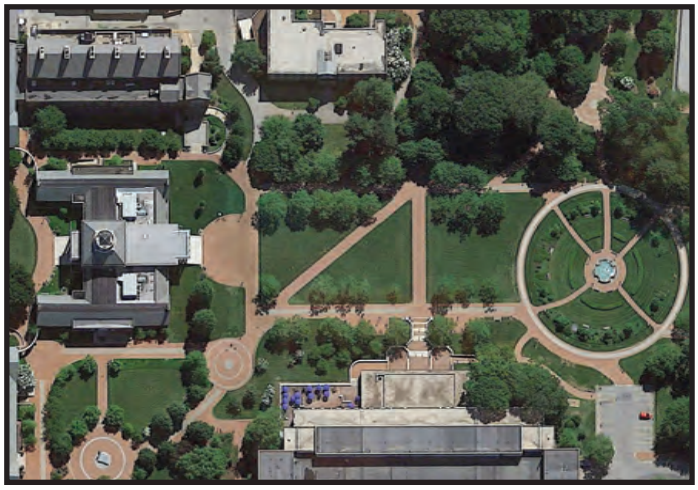
Perimeter Walk

Perimeter Walk

C-3: Substantively Divided Residential Properties with Detached Homes

Best Practices & Models: Campus-Style Neighborhood

Ship Carpenter Square Neighborhood (Lewes, DE)



University of Delaware (Newark, DE)

Overview:

1. Campus-Style Neighborhoods are a form of land development on tracts of 20 acres and greater, whereby buildings are arranged around a central Green used for pedestrian gathering and circulation. Such neighborhoods are similar to the arrangement of buildings on a college campus or a traditional neighborhood.

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Recommendations & Best Practices:

1. Campus-Style Neighborhoods shall be designed to feature a central Green, typically with buildings on at least two (2) sides of the Green space, and often with buildings on three (3) sides of the Green.
2. The massing of buildings shall be balanced with usable Public Open Space, in order to promote the amenities of light, air, and visual enjoyment.
3. Shade trees, benches, plantings, and lighting shall be installed and maintained in central Green spaces to enhance attractiveness and safety.

University of Virginia (Charlottesville, VA)

Gazebo in Central Green Space

C-4A: Substantively Developed Higher Intensity Residential

Best Practices & Models: Ponds at Woodward (Mendenhall, PA)

Orchards as permitted agricultural use in Open Space.

Residential Cluster where residential and agriculture are compatible uses.

Overview:

1. Conservation Design can incorporate natural resource protection areas, while allowing for low impact residential development.
2. Residential and agricultural uses can be compatible when agricultural uses are small scale or specialized in nature (i.e., orchards, horse farms).
3. Open spaces could be owned and maintained in a variety of ways, including: Land Trust, dedication to the Township (if accepted), or Homeowners/ Property Owners Association.

Recommendations & Best Practices:

1. Carefully position new dwellings in an environmentally sensitive manner.
2. Strictly limit development in floodplains, wetlands, and steep slopes (greater than 25%).
3. Design required open space to connect with existing or planned open space on adjacent parcels.
4. Incorporate small scale and specialty agriculture as a permitted use in required open space, where possible.

Adaptive Re-use of Barn

Shared Driveways to Triplex Clusters

C-4A: Substantively Developed Higher Intensity Residential

Best Practices & Models: Glen Mills School Facility Housing (Glen Mills, PA)

Single-Family Detached Dwellings and Detached Garages off Alleys.

Dwellings surround Green

Overview:

1. New houses can be clustered around Greens to create a neighborhood amenity.
2. Provide a variety of options for cluster development that will protect the rural character of the area, including: conservation design and lot averaging.
3. Open spaces could be owned and maintained in a variety of ways, including: Land Trust, dedication to the Township (if accepted), or Homeowners/ Property Owners Association.

Recommendations & Best Practices:

1. Cluster new neighborhoods around Greens.
2. Utilize rear lanes and alleys to enhance building fronts and promote great curb appeal.
3. Require clustering with a minimum of 60% open space for tracts over 20 acres in size.
4. Provide landscaped buffers along road corridors to maintain scenic vistas and screen development.
5. Provide an interconnected trail, walkway, or sidewalk system.

Alley and Garage in Rear Yard

Compact Housing on “Greenfield” Site

C-4A: Substantively Developed Higher Intensity Residential

Best Practices & Models: Wyndcrest (Sandy Springs, MD)

Green within “Close”

Green within “Close”

Overview:

1. Smaller cluster developments can provide mixed housing types with viable open spaces.
2. More affordable housing can be provided on the same block as other market rate housing.

Recommendations & Best Practices:

1. Cluster mixed housing types around Greens.
2. Permit a range of lot sizes through lot averaging to increase the diversity of housing.
3. Intersperse more affordable housing units with market rate units.

Wyndcrest Neighborhood

Street trees and front porches provide great curb appeal

C-4B: Substantively Developed Residential with Attached Homes

Best Practices & Models: Lantern Hill (Doylestown, PA)

A Traditional Neighborhood Development (TND) in Doylestown, PA

Overview:

1. Traditional neighborhood development (TND)can be used to protect and enhance the character of existing neighborhoods.
2. TND is a tool for emulating and extending the character of existing neighborhoods into new development.
3. TND incorporates open space, and mixed uses and housing types to create walkable places.

Recommendations & Best Practices:

1. Mix uses, lot sizes and housing types to promote walkability.
2. Create open spaces for active or passive recreation connected by sidewalks, walkways, and trails.
3. Create a continuous pedestrian network and fill gaps in the existing network.
4. Provide land for community facilities.

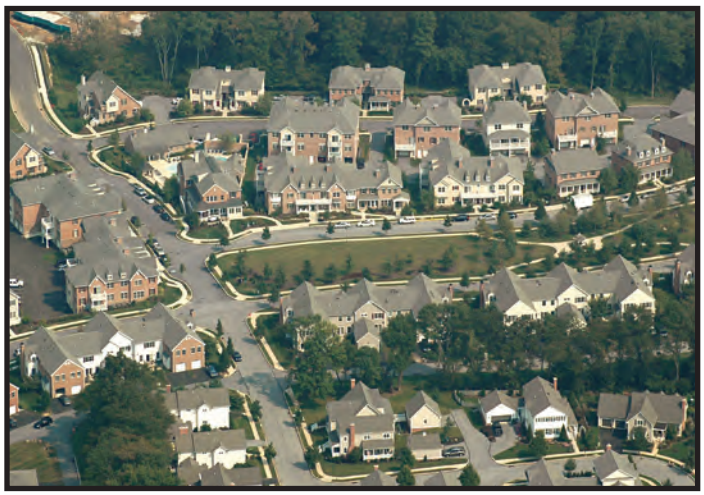
Green with Gazebo

View through Gazebo to Mixed Housing Types

C-4B: Substantively Developed Residential with Attached Homes

Best Practices & Models: Eagleview (Exton, PA)

Site Plan of Eagleview Corporate Center, Town Center, and TND in Chester County, PA



Claremont Neighborhood with Mixed Housing Types

Overview:

1. Traditional streetscapes can be created by promoting curb appeal, requiring sidewalks street trees, and street furniture, and accessing garages off alleys.

Recommendations & Best Practices:

1. Retrofit existing neighborhoods with streetscape amenities and mixed uses.
2. Require street trees, sidewalks, and pedestrian oriented street lights on both sides of all streets.

Streetscape at The Gardens in Chester County, PA

Alleyscape at the Gardens

C-4B: Substantively Developed Residential with Attached Homes

Best Practices & Models: Eagleview (Exton, PA)

Eagleview Town Center, The Villas, and The Gardens

Mixed use commercial building in Eagleview Town Center

Overview:

1. Master Planned Communities can be designed as walkable, mixed-use places.
2. New communities can connect to business parks and clean, light industrial uses to provide employment opportunities in close proximity.

Recommendations & Best Practices:

1. Diversify and mix land uses.
2. Provide live-work units to enable a zero-commute housing and an opportunity to live above a shop, store, or office.
3. Provide a traditional streetscape including street trees, pedestrian lighting, sidewalks and benches.

Live-Work Units in Town Center

Town Center Pharmacy

C-5: Village/Hamlet Commercial

Best Practices & Models: Willowdale Town Center (Unionville, PA)

Aerial View of Site at Routes 82 & 926

Building as “Buffer” along Route 82

Overview:

1. Existing villages, such as Willowdale, provide an opportunity for new growth and infill development.
2. Village centers are intended to be mixed-use areas providing daily needs and employment opportunities.
3. Retrofit villages to provide pocket parks, greens and other open space and civic amenities.

Recommendations & Best Practices:

1. Create infill that is compatible with existing village character, in terms of building height, building position, and streetscape amenities.
2. Locate parking behind buildings and provide generous landscaping.
3. Incorporate open space and civic uses in the Villages.

Cluster of Business and Office Uses

C-5: Village/Hamlet Commercial

Best Practices & Models: Ludwig's Village (W.Vincent Twp. PA/South Whtiehall Twp,PA)

Ludwig's Village Market in Chester County, PA

Angled Alignment of Buildings at Ludwig's Market

Overview:

1. Well designed nonresidential uses that blend in with neighborhoods can provide daily necessities within walking distance.
2. Small scale commercial uses should be integrated into existing neighborhoods to decrease vehicle trips.
3. Commercial uses are an adaptive reuse strategy to maintain historic structures as viable uses.

Recommendations & Best Practices:

1. Emulate the bulk and area standards of residential uses for new commercial buildings.
2. Permit commercial uses for adaptive reuse of historic structures.
3. Position buildings along existing streets to "buffer" internal parking areas.
4. Cluster commercial development and orient toward a through-street.

Ludwig's Village Market

Restaurant anchors Village

C-6: Intensively Surfaced Non-Residential Properties

Best Practices & Models: Main Street at Exton (Exton, PA)

A Retrofit Town Center

Entry Sign and Branding of Character

Overview:

1. Existing, underperforming shopping centers and strip shopping areas can be transformed into new pedestrian-oriented places.

Recommendations & Best Practices:

1. Retrofit existing commercial development by transforming auto-oriented centers into pedestrian-oriented places.
2. Create a streetscape environment.
3. Mix residential with commercial uses.
4. Provide pedestrian amenities.

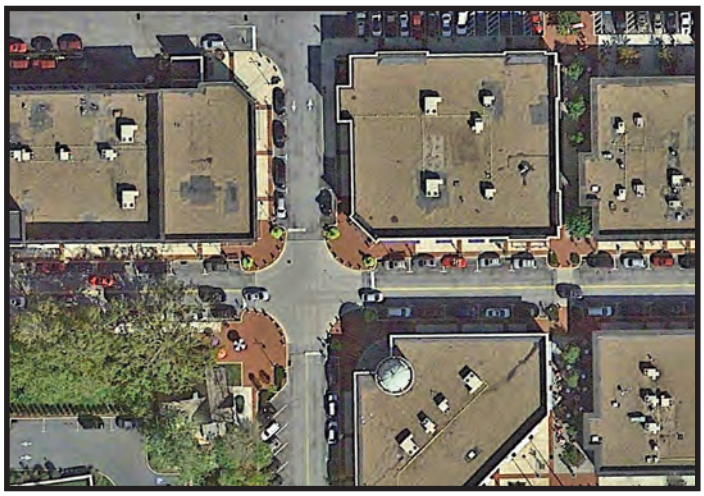
Main Street Environment

Post Office as Civic Amenity

C-6: Intensively Surfaced Non-Residential Properties

Best Practices & Models: Main Street at Exton (Exton, PA)

Two-story building anchors corner



Corner building with sidewalk cafe

Overview:

1. Areas along Route 202 could be re-shaped into mixed use, walkable places with a main street environment.

Recommendations & Best Practices:

1. Retrofit existing and design new shopping centers to be mixed use places.
2. Use two story buildings (minimum) to help form the street wall and an “outdoor room”.
3. Permit on-street parking to calm traffic and buffer pedestrians on the sidewalk.

Streetscape with on-street parking

Street wall to street wall dimension: 63’-6”

C-6: Intensively Surfaced Non-Residential Properties

Best Practices & Models: Crocker Park (Cleveland, OH)

Civic Plaza

Boulevard Entrance Street

Overview:

1. New commercial development can be combined with new residential development.

Recommendations & Best Practices:

1. Provide civic amenities such as landscaped boulevards, plazas, bus shelters, and the like.
2. Promote the use of sidewalk cafes.
3. Provide first floor/ground floor retail use.

Street furniture and bus shelter

Sidewalk Cafe

C-6: Intensively Surfaced Non-Residential Properties

Best Practices & Models: Pedestrian Pockets

Sitting Area as Pedestrian Pocket

Bench and Landscaped Area as Pedestrian Pocket

Overview:

1. Open space amenities can be increased through the use of pedestrian pockets, greens, and plazas.

Recommendations & Best Practices:

1. Construct plazas, pavilions, gazebos, and sitting areas as usable pedestrian pockets.
2. Install benches, sitting walls, shade trees, plantings, and lighting in pedestrian areas to enhance attractiveness and safety.
3. Incorporate additional open space through the use of pedestrian pockets.

Sitting Wall

Benches in Sitting Plaza

Top 16 Features to be Considered Within Character Areas

1. Building Heights
2. Building Setbacks
3. Building Footprint Sizes
4. Density
5. Dwelling Unit Types
6. Impervious Surface Coverage
7. Landscape Types
8. Landscape Buffer Widths
9. Lot Size
10. Open Space Amount
11. Parking Location
12. Pedestrian Circulation Types
13. Public Open Space Opportunities
14. Stormwater Management Types
15. Street Types
16. Street Widths

CHARACTER AREAS & 16 FEATURES TO BE CONSIDERED

			VARIATIONS IN DEVELOPMENT INTENSITY														
Area	**Description**	**Characteristics**	Building Height	Building Setbacks	Building Footprint Sizes	Density	Dwelling Unit Types	Impervious Surface Coverage	Landscape Types	Landscape Buffer Widths	Lot Size	Open Space Amount	Parking Location	Pedestrian Circulation Types	Public Open Space Opportunities	Stormwater Management Types	Street Types	Street Widths
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	**S**	**L**	**XS**	**XS**	**XS**	**XS**	**XS**	**XL**	**XL**	**XL**	**XS**	**XL**	**XL**	**XL**	**XS**	**XS**
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	**S**	**L**	**XS**	**XS**	**S**	**XS**	**XS**	**XL**	**XL**	**XL**	**XS**	**XL**	**XL**	**XL**	**XS**	**XS**
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	**S**	**L**	**M**	**XS**	**S**	**XS**	**XS**	**XL**	**XL**	**XL**	**S**	**XL**	**XL**	**XL**	**XS**	**XS**
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	**S**	**M to L**	**M**	**S**	**M**	**S**	**S**	**L**	**L**	**M to L**	**S**	**M**	**XS**	**M**	**S**	**S**
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	**M**	**M**	**M**	**M**	**M**	**M**	**M**	**M**	**M**	**S**	**M**	**M**	**S**	**M**	**M**	**M**
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	**M**	**S**	**M**	**M**	**M**	**M**	**M**	**M**	**M**	**S**	**M**	**M**	**M**	**M**	**M**	**M**
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	**S**	**S**	**S**	**L**	**S**	**L**	**S**	**S**	**S**	**XS**	**S**	**XL**	**XS**	**XS**	**S**	**S**
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	**L**	**S**	**XL**	**L**	**L**	**XL**	**L**	**XL**	**L**	**XS**	**L**	**M**	**XS**	**L**	**L**	**XL**

Key: **XS** = Extra Small; **S** = Small; **M** = Medium; **L** = Large; **XL** = Extra Large

Character Area Feature:
BUILDING HEIGHT

Area	Description	Characteristics	BUILDING HEIGHT VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	S: 30 foot maximum
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	S: 35 foot maximum, except for silos that may be 65 feet
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	S: 35 foot maximum
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	S: 35 foot maximum
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: 40 foot maximum
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: 40 foot maximum
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	S: 35 to 40 foot maximum, and 20 foot minimum
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	L: 48 foot maximum

Character Area Feature:
BUILDING SETBACK

Area	Description	Characteristics	BUILDING SETBACK VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	L: Unlimited/Variable
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	L: 200 feet
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	L: 200 feet
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	M to L: 50 to 75 feet
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: 25 feet
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	S: 18 feet
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	S: 12 feet
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	S: 18 feet

Character Area Feature:
BUILDING FOOTPRINT SIZE

Area	Description	Characteristics	BUILDING FOOTPRINT SIZE VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XS: Minor accessory buildings up to 1,500 square feet
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	XS: Accessory buildings up to 2,600 square feet
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	M: 2,600 to 6,500 square feet
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	M: 2,600 to 4,500 square feet
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: 2,000 to 4,000 square feet
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: 1,000 to 3,000 square feet per unit
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	S: 1,500 to 3,500 square feet
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	XL: 8,000 to 215,000 square feet (with 30,000 square feet average)

Character Area Feature:
DENSITY

Area	Description	Characteristics	DENSITY VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XS: 0 Dwelling Units per Acre
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	XS: 0.1 Dwelling Unit per Acre
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	XS: 0.2 Dwelling Unit per Acre
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	S: 0.3 to 1 Dwelling Unit per Acre
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: 2 Dwelling Units per Acre
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: 4 Dwelling Units per Acre
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	L: 4 to 8 Dwelling Units per Acre
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	L: (Governed by Impervious Coverage Limit: Average 65%)

Character Area Feature:
DWELLING UNIT TYPE

Area	Description	Characteristics	DWELLING UNIT TYPE VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XS: No new dwelling units
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	S: Smaller Single-Family Detached
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	S: Smaller Single-Family Detached
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	M: Larger Single-Family Detached
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: Larger Single-Family Detached
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: Duplex; Triplex; Quadraplex
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	S: Single-Family Detached Cottages; Bungalows; Live-Work Units
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	L: Apartments above Commercial

Character Area Feature:
IMPERVIOUS SURFACE COVERAGE

Area	Description	Characteristics	IMPERVIOUS SURFACE COVERAGE VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XS: 0% Impervious Surfaces
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	XS: 2% Maximum Impervious Surface Coverage
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	XS: 5 % Maximum Impervious Surface Coverage
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	S: 15% Maximum Impervious Surface Coverage
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: 25% Maximum Impervious Surface Coverage
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: 35% Maximum Impervious Surface Coverage
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	L: 60% to 80% Maximum Impervious Surface Coverage
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	XL: 65% to 90% Maximum Impervious Surface Coverage

Character Area Feature:
LANDSCAPE TYPE

Area	Description	Characteristics	LANDSCAPE TYPE VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XS: Natural Landscape
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	XS: Managed Landscape
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	XS: Maintained Landscape
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	S: Lawn and Garden
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: Front-yard & Rear-yard
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: Patio & Courtyard
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	S: Kitchen Garden
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	L: Hardscape

Character Area Feature:
LANDSCAPE BUFFER WIDTH

Area	Description	Characteristics	LANDSCAPE BUFFER WIDTH VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XL: Unlimited
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	XL: Unlimited
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	XL: Unlimited
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	L: 20 to 50 feet
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: 10 to 20 feet
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: 10 to 20 feet
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	S: 6 to 10 feet
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	XL: 30 to 50 feet

Character Area Feature:
LOT SIZE

Area	Description	Characteristics	LOT SIZE VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XL: Conservation Areas overlaid on various lots
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	XL: 10 Acre lots (with potential for Act 515 or 319 Covenant)
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	XL: 5 Acre+ lots with Historic, Natural, and Cultural Assets
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	L: 1 Acre to 3+ Acre lots along "Leafy" Lanes
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: ½ Acre lots in Cluster Developments
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: ¼ Acre lots in Cluster Developments
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	S: ¼ Acre to $^{1}/_{8}$ Acre lots in Village setting
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	L: 2 Acres to 5 Acres+ on larger development tracts

Character Area Feature:
OPEN SPACE AMOUNT

Area	Description	Characteristics	OPEN SPACE AMOUNT VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XL: 100% Open Space
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	XL: 90% Open Space
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	XL: 60% Open Space
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	M to L: 20% to 50% Open Space
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	S: 15% Open Space
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	S: 15% Open Space
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	XS: 5% Open Space
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	XS: 3% Open Space

Character Area Feature:
PARKING LOCATION

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Area	Description	Characteristics	PARKING LOCATION VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XS: Minimal Roadside
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	XS: Roadside; Stone Parking Lots
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	S: Dispersed Parking Lots
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	S: Driveway
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: Driveway
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: Garage; Shared Overflow Parking Lots
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	S: Rear & Side of Buildings
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	L: Paved Parking Lots, with well Landscaped Islands

Character Area Feature:
PEDESTRIAN CIRCULATION TYPE

Area	Description	Characteristics	PEDESTRIAN CIRUCLATION VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XL: Trails
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	XL: Trails
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	XL: Walkways & Trails
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	M: Sidewalks on 1 side of Streets
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: Sidewalks on both sides of Streets
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: Sidewalks on both sides of Streets
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	XL: Interconnected Sidewalks & Crosswalks
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	M: Sidewalks & Crosswalks

Character Area Feature:
PUBLIC OPEN SPACE OPPORTUNITY

Area	Description	Characteristics	PUBLIC OPEN SPACE OPPORTUNITY VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XL: Greenway
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	XL: Farmstead
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	XL: Estates & Parks
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	XS: Parklets
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	S: Pedestrian Gathering Areas
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: Playfields & Parks
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	XS: Parklets
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	XS: Pocket Parks

Character Area Feature:
STORMWATER MANAGEMENT TYPE

Area	Description	Characteristics	STORMWATER MANAGEMENT TYPE VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XS: Riparian Buffers; Floodplains
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	XL: Diversion Terraces; Farm Ponds
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	XL: Riparian Buffers; Floodplains; Diversion Terraces
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	M: Retention Basins
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: Retention Basins
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: Retention Basins
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	XS: Rain Gardens
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	L: Rain Gardens; Subsurface Infiltrators

Character Area Feature:
STREET TYPE

Area	Description	Characteristics	STREET TYPE VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XS: Byway; Scenic Road
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	XS: Rural Lane; Scenic Road
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	XS: Rural Lane; Driveway
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	S: Lane Network; and Cul-de-sac
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: Street Network; and Cul-de-sac
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: Street Network; and Cul-de-sac
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	S: Interconnected Street & Alley Network
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	L: Street, Driveway, & Service Lane Network

Character Area Feature:
STREET WIDTH

Area	Description	Characteristics	STREET WIDTH VARIATIONS
C-1A	Natural Areas	C-1A.a. Streams & Creeks C-1A.b. Wetlands & Floodways C-1A.c. Woodland	XS: 18 feet (9 ft. each cartway lane)
C-1B	Agricultural Areas	C-1B.a. Cultivated Fields C-1B.b. Maintained Meadows C-1B.c. Orchards C-1B.d. Vineyards	XS: 18 feet (9 ft. each cartway lane)
C-2	Conservation Easement Areas, and other Hallowed Grounds	C-2.a. Properties with Restricted Covenants C-2.b. Historic Sites C-2.c. First State National Monument C-2.d. Woodland Trustee Lands C-2.e. Brandywine Battlefield State Park	XS: 18 feet (9 ft. each cartway lane)
C-3	Substantively Divided Residential Properties with Detached Homes	C-3.a. Cul-de-sac Subdivisions C-3.b. Lane Lot Homes	S: 20 feet (10 ft. each cartway lane)
C-4A	Substantively Developed Higher Intensity Residential	C-4.a. Estates at Chadds Ford C-4.b. The Ridings	M: 24 feet (12 ft. each cartway lane)
C-4B	Substantively Developed Residential with Attached Homes	C-4.c. Painters Crossing C-4.d. Other Cluster Developments	M: 24 feet (12 ft. each cartway lane)
C-5	Villages/Hamlets: Chadds Ford; Dilworthtown	C-5.a. Chadds Ford Village C-5.b. Dilworthtown Village	S: 22 feet (11 ft. each cartway lane)
C-6	Intensively Surfaced Non-Residential Properties	C-6.a. Route 202 Corridor C-6.b. Painters Crossroads C-6.c. Shopping Centers C-6.d. Office Campuses C-6.e. Strip Commercial	XL: 26 feet (13 ft. each cartway lane)

6. IMPLEMENTATION STRATEGIES

Based on the findings and recommendations in the preceding chapters, a number of Implementation Items need to be addressed over the next 10 years (and beyond). These Implementation Items are listed below relative to:

+ Timeframe
  1: 2017
  2: 2018 to 2020
  3: 2021 to 2026

+ Responsibility
  - Board of Supervisors
  - Planning Commission
  - Township Staff
  - Township Engineer
  - Open Space Committee
  - Strategic Advisory Committee
  - Zoning Task Force
  - Historical & Architectural Review Board
  - Sewer Authority
  - Penn DOT
  - Private Sector
  - Other Agencies

+ Method of Implementation
  - Zoning Ordinance Amendments
  - Subdivision & Land Development Ordinance Amendments
  - Special Study

These Implementation Strategies should be addressed on a regular basis. Adjustments to the Timeframe should be made during periodic updates to the lists on page 6-2 through 6-4.

Notes on the Implementation Matrix:

(1) Chadds Ford Township can use the following Implementation Matrix as a guide to monitor progress on various initiatives. Therefore, this Implementation Matrix should be periodically reviewed and updated to reflect current Township priorities.

(2) BOS = Board of Supervisors; PC = Planning Commission; TS = Township Staff; TE = Township Engineer; OSC = Open Space Committee; SAC = Strategic Advisory Committee; ZTF = Zoning Task Force;
HARB = Historical & Architectural Review Board; SA = Sewer Authority; PS = Private Sector; PT = Penn DOT

(3) ZOA = Zoning Ordinance Amendments;
SLDOA = Subdivision and Land Development Ordinance Amendments.

6. IMPLEMENTATION STRATEGIES

Based on the findings and recommendations in the preceding chapters, a number of Implementation Items need to be addressed over the next 10 years (and beyond). These Implementation Items are listed below relative to:

+ Timeframe
  1: 2017
  2: 2018 to 2020
  3: 2021 to 2027

+ Responsibility
  - Board of Supervisors
  - Planning Commission
  - Township Staff
  - Township Engineer
  - Open Space Committee
  - Strategic Advisory Committee
  - Zoning Task Force
  - Historical & Architectural Review Board
  - Sewer Authority
  - Penn DOT
  - Private Sector
  - Other Agencies

+ Method of Implementation
  - Zoning Ordinance Amendments
  - Subdivision & Land Development Ordinance Amendments
  - Special Study

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(3) ZOA = Zoning Ordinance Amendments;
SLDOA = Subdivision and Land Development Ordinance Amendments.

IMPLEMENTATION MATRIX

Item		Time Frame	Responsibility	Method of Implementation
1.	Update Act 537 Sewage Facilities Plan	1	TE, BOS, SA	Special Study
2.	Refine PRD Regulations	1	BOS, PC, ZTF, TS	ZOA
3.	Create TND-Traditional Neighborhood Development Provisions for Rt. 202 Corridor	1	BOS, PC, ZTF, TS	ZOA, SLDOA
4.	Adopt In-Progress Zoning Ordinance & Zoning Map Amendments	1	ZTF, BOS, PC	ZOA
5.	Update Township – Wide Open Space Plan	1, 2	OSC, HARB, BOS, TS	Special Study
6.	Refine Mitigation measures for Environmental Impact Assessment (EIA) Report, especially pertaining to Riparian Buffers	2	ZTF, TS, PC, BOS	SLDOA
7.	Amend Zoning Map to match Land Use Character Areas from Comprehensive Plan	2	BOS, ZTF, PC, TS	ZOA
8.	Amend Ordinances to Incorporate Best Practices & Models from Comprehensive Plan, especially related to the Placemaking Principles in Appendix E, and Chapter 5.	2	ZTF, BOS, PC, TS	ZOA, SLDOA

IMPLEMENTATION MATRIX

Item		Time Frame	Responsibility	Method of Implementation
9.	Refine Metrics in Ordinances to match Character Area Metrics of Comprehensive Plan	2	ZTF, BOS, PC, TS	ZOA, SLDOA
10.	Establish Scenic-By-Way Standards & Requirements along roads such as Creek, Webb, Harvey, Ring, Ridge, Smithbridge, and Beaver Valley	2	ZTF, PC, TS, HARB, BOS	ZOA, SLDOA
11.	Create Detailed Rt. 202 “Development Strategy Plan” to Illustrate Preferred Outcomes	2	PC, TS, BOS, SAC	Special Study
12.	Create Detailed Chadds Ford Village “Development Strategy Plan” to Illustrate Preferred Outcomes	2	PC, TS, BOS	Special Study
13.	Promote Traffic Calming Along Rt. 1	1, 2, 3	TE, TS, BOS, PT	Special Study
14.	Promote Traffic Calming Along Rt. 202	3	TE, TS, BOS, PT	Special Study
15.	Consider TDR-Transfer of Development Rights Ordinance	3	ZTF, PC, TS, SAC, BOS	ZOA
16.	Pursue Options for Land Acquisition including: Conservation Easements; Fee-Simple Purchase; and the like	1, 2, 3	BOS, TS, OSC, PC	Special Study

IMPLEMENTATION MATRIX

Item		Time Frame	Responsibility	Method of Implementation
17.	Create Opportunities for Community Parkland	2, 3	BOS, PC, OSC	Special Study
18.	Consider Viability of Neighborhood Recreational Areas	1, 2, 3	BOS, PC, OSC	Special Study
19.	Better Promote "Walkable Chadds Ford", by Improving Pedestrian Linkages	2, 3	BOS, PC, PT, TE	Special Study for Possible Pedestrian Bridge
20.	Implement the Chadds Ford Village Master Plan	1, 2, 3,	BOS, PC	On-Going Initiative
21.	Extend Trails & Walkways, including Rails to Trails	1, 2, 3	OSC, BOS, PC, TE	On-Going Initiative
22.	Coordinate with all Township Committees to address Smart Growth	1, 2, 3	BOS, PC, TS, OSC, HARB, SA, SAC, ZTF	On-Going Initiative
23.	Strengthen Ordinances by adding effective Cluster Development and Placemaking provisions	1, 2	ZTF, BOS, PC, SAC, TS, OSC	ZOA, SLDOA
24.	Create Improved Open Space Standards for Cluster Developments	1, 2	ZTF, BOS, PC, TS, OSC	ZOA, SLDOA
25.	Create Recreational Space & Facility Standards for Cluster Development	1, 2	ZTF, BOS, PC, TS, OSC	ZOA, SLDOA

Appendix A

As described on page 2-1, the Chadds Ford Township Strategic Advisory Committee hosted two Workshops to help create the Vision for this Comprehensive Plan.

The work products from the the two Visioning Workshops are presented on pages A-2 through A-10.

Brintons Bridge Rd

Webb Rd

Creek Rd

Rt 202

Harvey Rd

Baltimore Pike

Bullock Rd

Ring Rd

Ridge Rd

Smithbridge Rd

Chadds Ford Township - Visioning Workshop

Places Loved and Places To Be Improved (8-25-15)

Hearts signifying Places that are Loved

Heart "Trail" signifying Trails/Roads that are Loved

Circles on Places or Areas to be Improved

N

Scale: 1"= 2,000'

TCA: 9-3-15

A-2

Source: Google EarthPro 10-7-11

THOMAS COMITTA ASSOCIATES, INC.
Town Planners & Landscape Architects

Chadds Ford Township Visioning Workshop
Delaware County, PA

Places Loved (in alphabetical order)

1. AMC Dine-In Theater (at Painters Crossing)
2. Battlefields
3. Brandywine River
4. Brandywine River Art Museum
5. Brandywine Trail & Brandywine Scenic Byway Trail (Boardwalk Trail from Elementary School to Brandywine Museum)
6. Chadds Ford Township Building
7. Chadds Ford Village
8. Craig Property
9. Dilworthtown (5-Points) Historic Village
10. DuPont Area
11. Hanks Restaurant
12. Heineman Property
13. Historic Homes (Chadds Ford Historical Society Manson, Stonebridge Mansion)
14. Keurner Farm
15. Mother Archie's Church
16. Octagonal School House
17. Open Space (views)
18. Route 1 Corridor
19. Sanderson Museum
20. Scenic Roads
21. Smithbridge Road Covered Bridge

Note: These Places were noted at the Visioning Workshop on August 25, 2015.

THOMAS COMITTA ASSOCIATES, INC.
Town Planners & Landscape Architects

Chadds Township Visioning Workshop
Delaware County, PA

Places or Areas to be Improved (in alphabetical order)

1. Battlefield
2. Brandywine Loop Drive (Traffic, Vacant Property)
3. Brandywine River Pedestrian Access
4. Business District (along Rt 1)
5. Chadds Ford Historic Village (Southern Portion of Village and Pedestrian Access)
6. Creek Road Flooding
7. Dilworthtown (5-Points) Historic Village (and Brinton Bridge Rd and Oakland Rd Intersection)
8. Invasive Plant Growth
9. National Monument
10. Oakland Road
11. Painter's Crossing Shopping Center
12. Ridge Road
13. Route 1 & 202 Intersection (Traffic)
14. Route 1 (Baltimore Pike) Corridor (and Webb Rd Intersection)
15. Route 202 Corridor (and Oakland Rd and Brintons Bridge Rd Intersections)
16. Sewer Plant
17. Sunoco Station (Rt 1 and Rt 202)
18. Twin Bridges

Note: These Places were noted at the Visioning Workshop on August 25, 2015.

THOMAS COMITTA ASSOCIATES, INC.
Town Planners & Landscape Architects

CHADDS FORD TOWNSHIP VISIONING WORKSHOP
PRIORITIES FOR CHADDS FORD CURRENCY

The Spending Priorities indicated on August 25, 2015 by members of the Chadds Ford Township Strategic Advisory Committee, as well as other Chadds Ford Township Stakeholders, are listed from highest to lowest value below.

Priority	Dollar Amount Allocated
High Priority Items:	
• Open Space Protection (Guide Future Development)	$540.00
• Parks & Recreational Facilities	$400.00
• Cultural & Historical Resources	$340.00
Medium Priority Items:	
• Streetscape Enhancements along Rt. 1 & 202	$260.00
• Chadds Ford Village Enhancement	$240.00
• Traffic Calming	$240.00
• Road Maintenance	$220.00
• Trail Linkages	$180.00
Low Priority Items:	
• Stormwater Management	$100.00
• Walkways in Chadds Ford Village	$80.00
• Woodland Conservation	$80.00
• Bicycle Paths	$60.00
• Octagonal School House Renovation	$60.00
• Greenway Corridor Protection	$40.00
• Scenic Roads/Scenic Resources	$40.00
• Township-wide Beautification (Property Management)	$20.00
• Utilities Maintenance	$20.00

Notes:

1. Each person was given $100 (in 5, $20 bills), and asked to Allocate these funds to one or more of the above Priorities.
2. TCA computed the Allocations based upon the amounts indicated on the Chadds Ford Currency at the 8-25-15 Visioning Workshop.
3. TCA grouped the Allocations under the categories of “High Priority”, “Medium Priority”, and “Low Priority”, and reviewed these Priorities at Visioning Workshop #2 in January 2016.

D. PLAN GOALS AND OBJECTIVES

Note: The Key to these Edited Goals and Objectives appears on page A-10.

1. Community Character

Preserve and enhance visual quality, streetsape development and general public space.

Goal	Objectives
Provide for the maintenance of the Township's streetscapes, public spaces and existing neighborhoods.	**1. Enhance and improve Chadds Ford Village (16)** 2. Enhance and improve the US Rt. 202 corridor (6) a) Encourage the use of visual buffering and noise abatement from adjacent/nearby residential neighborhoods; (2) b) Encourage a non-stop flow of US Rt. 202 traffic through the Township; (1) c) Discourage the use of Township residential roads as alternatives to US Rt. 202. (2) **3. Improve the Route 1 corridor through Chadds Ford Village. (11)** a) Enhance pedestrian circulation and the flow of local traffic; (4) b) Preserve the existing Scenic Resources as the "Scenic Gateway to the Village of Chadds Ford" (as shown on Map 6-9 of the Township Open Space Plan). (7) 4. Identify current significant landscapes and scenic areas in the Township. (4) 5. Designate scenic roadways through the Township and develop criteria and tools to help ensure the maintenance of their scenic qualities. (5) 6. Require development initiatives to relate lots and buildings to the specific conditions of the site, including both natural and man-made resources. (3)

2. Environmental, Cultural and Historical Resources

Preserve and enhance the natural, cultural and architectural integrity of the Township, including parks and open space, historic structures and natural resources.

Goal 1	Objectives
Permanently protect Chadds Ford's open spaces – its farm fields and meadow, woods, stream valleys, and other water resources, historic sites and structures and scenic resources – which, in combination, create the Township's unique community character, remaining rural atmosphere and quality of life.	A. Improve the Township's 2007 *Open Space Plan* objectives, as set forth below: **1. Promote and facilitate the placement of voluntary and permanent easements on Chadds Ford's critical and sensitive open spaces, utilize other appropriate tools for permanent protection as needed, including outright acquisition or identification as significant resources using applicable county, state or federal programs. (10)** **2. Work toward permanent conservation of extensive areas of prime and significant agricultural soils to assure the potential for a range of farm-based businesses. (10)** **3. Pursue permanent conservation of woodlands, especially those 50 years and older that have significant areas of forest interior. (11)** 4. Promote the permanent protection of significant wildlife habitats, unique natural areas, and those locales that support rare plant species. (7)

December 16, 2009; Edited in January 2016.

	5. Seek to permanently preserve continuous riparian or open space buffers along stream corridors, as well as in and around areas of wetlands and steep slopes; seek to restore woody vegetation to those areas where needed. (11) 6. Facilitate creation of permanently protected greenway corridors to link existing protected open space areas through land preservation or purchase of easements and right-of-ways. (4) 7. Pursue protective strategies for the natural and historic resources identified, assessed and prioritized in the Township Open Space Plan. (6) **8. Encourage and facilitate the work of the Chadds Ford Historical and Architectural Review Board to fully implement and administer the Township's Act 167 Historic District ordinance. (8)** **9. Promote the permanent protection of historic resources and locally-significant landscape elements such as walls, hedgerows, meadows, large fields, and woodlands. (9)** **10. Encourage the cooperative efforts of the Brandywine Battlefield Task Force (BBTF) and surrounding municipalities to preserve lands within the Brandywine Battlefield National Historic Landmark, which is located within both Chester and Delaware Counties. (8)** 11. Broaden the appreciation and protection of Chadds Ford's historic resources through Township sponsorship of measures such as a historic preservation plan. (6) **12. Pursue permanent protection of Chadds Ford's scenic areas and vistas, especially where those areas also contain other significant natural and/or cultural resources. (10)** 13. Seek to maintain the essential qualities of the Township's scenic roadways (e.g. width, curvature, roadside trees, walls, structures) while planning for needed improvements. (7) 14. Encourage the cooperative efforts of the Brandywine Valley Scenic Byway Commission (BVSBC) to protect the scenic nature of the Brandywine Valley Scenic Byway. (6) **15. Maintain and improve watershed and subwatershed water balances within and downstream of Chadds Ford to maintain flow levels, protect water supplies and shelter the integrity of aquatic life. (8)** **16. Educate Chadds Ford residents and taxpayers regarding the financial benefits of open space protections (i.e. schools and other services required of ongoing development of unprotected open space are not cost-effective). (8)** 17. Coordinate open space planning and protection with neighboring municipalities in Delaware County, Chester County, the State of Delaware, the Delaware Valley Regional Planning Commission, and Greenspace Alliance to protect shared resources and achieve common goals. (5) 18. Strive to achieve consistency with and otherwise support development of County-level open space and greenway planning efforts. (2)

	19. Fully utilize technical assistance, educational, and/or funding resources that may be available from governmental and nongovernmental organizations. (2) 20. Maximize uses of Township open space protection revenue collected pursuant to the May 2005 referendum under PA Act 153 to leverage open space protection funds from county, state and other potential sources. (4) <u>New Objectives</u> B. Promote cooperative and coordination among historical organizations.
Goal 2	Objectives
Assure provision of an adequate level of recreational services and facilities to Township residents.	1. Coordinate with other public, quasi-public, and private agencies to maximize use of recreational lands, facilities and programs that these organizations may provide and that may be available to Township residents. (1) 2. Formalize a program and fund for acceptance of cash contributions to Township recreational efforts, including but not limited to, provisions for dedication of "fees in lieu thereof" (i.e. pursuant to Municipalities Planning Code) for recreational lands from residential and nonresidential developers. (1) 3. Consider the Township's growing population when planning future recreational facilities. (5) **4. Work toward establishment of a Township trails system, addressing appropriate linkages, destinations, accessibility, general sustainability, and appropriate uses (e.eg. pedestrian bicycling, equestrian, and cross-county ski) considerations. Specifically, seek to interconnect protected open spaces, recreational areas, and residential neighborhoods. (11)** 5. Consider applicable standards and criteria for recreational facilities for Township residents. (2) 6. Pursue funding sources for recreational development through county, state and other potential funding sources. (4) 7. Encourage the cooperative efforts of the BVSBC to improve the recreational attributes of the Brandywine Valley Scenic Byway. (3)

3. <u>Land Use</u>

Review existing and future land development issues.

Goal	Objectives
Provide for future development in a manner that will protect and enhance the general welfare and quality of life in the Township.	**1. Guide the location and intensity of future development to protect existing neighborhoods and open space. (9)** 2. Coordinate future land development with the logical and efficient extension of public utilities and services. (4) 3. Ensure that any commercial development along the U.S. Rt. 202 corridor does not detract from the quality of life in the adjacent residential neighborhoods. (6) 4. Support and participate in regional planning efforts. (2)

December 16, 2009; Edited in January 2016.

4. Transportation

Adopt the regional circulation plan and the need to address public transit alternatives, pedestrian and bicycle circulation, and traffic congestion.

Goal	Objectives
Provide and maintain a high quality, safe road network that serves the needs of all residents and encourages the development of alternative modes of transportation, including rail and bus service.	1. Inventory existing transportation and road improvement needs. (2) 2. Identify and recommend traffic calming techniques in the Township to ensure the safe movement of vehicles through residential areas. (5) 3. Investigate opportunities to create pedestrian trail and bikeway linkages between residential neighborhoods and community facilities. (3) 4. Prepare a pedestrian and bicycle circulation plan for the Township. (4) 5. Implement mechanisms to require new development to accommodate pedestrian and bicycle circulation. (2) 6. Coordinate planning with neighboring communities to enhance the flow of vehicular traffic through the region and provide for linkages of walking and bicycle paths. (3) 7. Investigate alternative modes of public transportation.

5. Housing

Ensure that a range of affordable housing exists.

Goal	Objectives
Ensure that the Township has adequate housing options.	1. Explore affordable housing options to address the needs of the Township's population. (1) 2. Explore opportunities for regional planning or affordable housing.

6. Economic Development

Maintain the current level of existing businesses.

Goal	Objectives
Continue to provide for appropriate commercial activities in the Township.	1. Maintain and improve the economic viability of the U.S. Rt. 202 Business District. (1) **2. Improve the streetscape of the U.S. Rt. 1, particularly in the Chadds Ford Village vicinity. (12)**

December 16, 2009; Edited in January 2016.

7. Community Facilities and Services

Identify current and future needs for police, emergency services, administrative, public works, and other services and facilities provided by the Township.

Goal	Objectives
Provide community facilities and services to meet current and future residential and business requirements in the Township.	1. Investigate and prioritize the following community services and facilities and make recommendations to address issues: a) Public water and sewer service. (4) b) Police and emergency services. (2) c) Township administration and code enforcement. (3) d) Road maintenance and public works. (3) e) Trash and recycling services. (2) f) Park and recreational facilities and services. (5)

8. Regional Coordination

Identify opportunities for coordination of planning issues with surrounding townships and Delaware County.

Goal	Objectives
Encourage and participate in regional planning activities.	1. Participate in regional planning initiatives, such as the Oakland Road Corridor Scenic Easement Program and the Brandywine Valley Scenic Byway Study. (2) 2. Coordinate planning with neighboring communities to encourage the provision of public transportation. 3. Coordinate planning with neighboring communities to enhance the flow of vehicular traffic through the region and provide for linkages of walking and bicycle paths. (2) 4. Coordinate planning with neighboring communities to ensure compatible land use for adjoining areas. (4) 5. Participate in multi-municipal planning initiatives for compatible development, continuation of historic community patterns, and coordination of infrastructure development. (6) 6. Coordinate with area communities and PennDOT regarding detailed plans for the US Rt. 202 improvement project. (5)

Key to the Edited Goals and Objectives:

(1) to (16) The numbers in red indicate the number of people who felt that the Objective from the 2010 Comprehensive Plan was still valid in 2017.

Conserve The words in **bold** type represent the Objectives the Stakeholders felt are most important in 2016.

December 16, 2009; Edited in January 2016.

Appendix B

The information included in the Chadds Ford Township Comprehensive Plan of 2010 pertaining to Natural, Historic and Cultural Resources Protection is provided in this Appendix B, and includes:

- Plan for the Protection of Natural & Historic Resources;
- Map 4: Historic & Natural Resources Recommendations; and
- Appendix D: Environmental, Cultural and Historic Resources Inventory and Analysis.

palities to enhance the Route 202 functionality and streetscape in order to improve overall capacity.

8. Hillman Drive "Loop." Pursue the completion of the connection of Hillman Drive at US Route 1 and US Route 202, and work with Concord Township to complete the southeast quadrant of this loop drive.

D. PLAN FOR THE PROTECTION OF NATURAL AND HISTORIC RESOURCES

Goals and Objectives

Chapter 1's goals for natural and historic resources are [1] "*Permanently protect Chadds Ford's open spaces – its farm fields and meadows, woods, stream valleys, and other water resources, historic sites and structures and scenic resources – which, in combination, create the Township's unique community character, remaining rural atmosphere and quality of life; and [2] Assure provision of an adequate level of recreational services and facilities to Township residents."* Numerous objectives were set forth in the 2007 Open Space Plan, all of which were carried forward to this Comprehensive Plan. These objectives include the expanded protection and conservation of open space, natural, scenic and historic resources throughout the Township.

Background

Planning implications for natural and historic resources include the need for greater protection for all of the Township environmental, scenic and historic resources. (See Appendix D: Environmental, Cultural and Historic Resource Inventory and Analysis.)

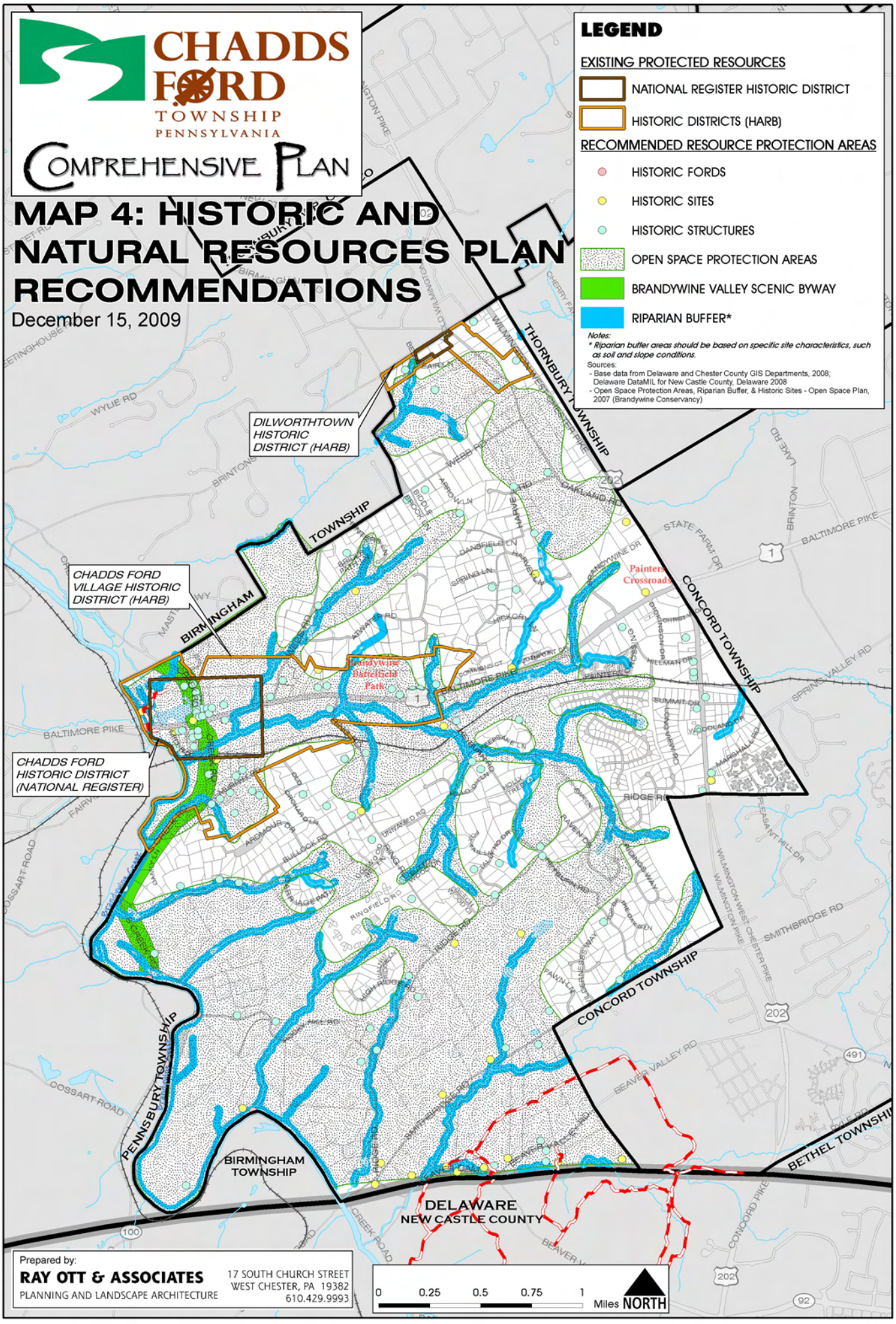
The Chadds Ford Township Open Space Plan of 2007 was adopted as a component of the Comprehensive Plan, and as such, all open space and recreation recommendations and implementation strategies set forth in the Open Space Plan of 2007 should be considered to be the open space and recreation recommendations of this Comprehensive Plan. Map 4 shows Township resource areas to be protected. Historic resources inventories for the Open Space Plan are also shown on Map 4. A complete list of these resources is included in the Open Space Plan.

1. Open Space Protection Focus Areas. The protection of Open Space Focus areas is addressed in Section 2.A.3.a of the Plan for Land Use.

2. Water Supply and Water Quality.

   - Riparian Buffer Zones. Amend the zoning ordinance to require buffer areas along all streams in the Township. The actual buffer boundary should be based on site specific criteria, such as local slope and soil conditions.
   - Stormwater Management. The Pennsylvania Department of Environmental Protection (DEP) is responsible for administering the State's stormwater management programs.

     Act 167 requires municipalities in a watershed with an adopted stormwater management plan to adopt the plan's model ordinance. The Township has adopted Ordinance 104 for Chester Creek municipality-wide. Under a DEP directive, the County will be preparing a new model ordinance for Countywide use. Chadds Ford will need to adopt this new ordinance.


CHADDS FORD TOWNSHIP PENNSYLVANIA
COMPREHENSIVE PLAN
MAP 4: HISTORIC AND NATURAL RESOURCES PLAN RECOMMENDATIONS
December 15, 2009
LEGEND
EXISTING PROTECTED RESOURCES
NATIONAL REGISTER HISTORIC DISTRICT
HISTORIC DISTRICTS (HARB)
RECOMMENDED RESOURCE PROTECTION AREAS
HISTORIC FORDS
HISTORIC SITES
HISTORIC STRUCTURES
OPEN SPACE PROTECTION AREAS
BRANDYWINE VALLEY SCENIC BYWAY
RIPARIAN BUFFER*
Notes:
* Riparian buffer areas should be based on specific site characteristics, such as soil and slope conditions.
Sources:
- Base data from Delaware and Chester County GIS Departments, 2008; Delaware DataMIL for New Castle County, Delaware 2008
- Open Space Protection Areas, Riparian Buffer, & Historic Sites - Open Space Plan, 2007 (Brandywine Conservancy)
DILWORTHTOWN HISTORIC DISTRICT (HARB)
CHADDS FORD VILLAGE HISTORIC DISTRICT (HARB)
CHADDS FORD HISTORIC DISTRICT (NATIONAL REGISTER)
THORNBURY TOWNSHIP
BIRMINGHAM TOWNSHIP
CONCORD TOWNSHIP
PENNSBURY TOWNSHIP
BIRMINGHAM TOWNSHIP
DELAWARE
NEW CASTLE COUNTY
Painters Crossroads
Brandywine Battlefield Park
BALTIMORE PIKE
WILMINGTON WEST CHESTER PIKE
SMITHBRIDGE RD
BEAVER VALLEY RD
COSSART ROAD
BETHEL TOWNSHIP
0 0.25 0.5 0.75 1 Miles
NORTH
Prepared by:
RAY OTT & ASSOCIATES
PLANNING AND LANDSCAPE ARCHITECTURE
17 SOUTH CHURCH STREET
WEST CHESTER, PA 19382
610.429.9993

APPENDIX D: ENVIRONMENTAL, CULTURAL AND HISTORIC RESOURCES INVENTORY AND ANALYSIS

Chadds Ford Township adopted an Open Space Plan in 2007 that includes a detailed inventory, analysis and mapping of the Township's natural, cultural and historic resources. Information from this Plan is summarized in this section, and shown on the Biotic Resources Map (Map 6-1) of the Township's Open Space Plan.

1. ENVIRONMENTAL RESOURCES

The Township retains significant areas of natural resources, including woodlands, stream valleys, surface water and open space/meadow areas.

Woodlands	Woodlands comprise 36% (1,988 acres) of the Twp., most of which is located in areas of hydric soils, floodplains and steep slopes and have been somewhat protected from development encroachment. Only 230 acres (11%) of Twp. woodlands are forested interiors, which are measured as 300 feet from any outer edge.
Stream Valleys and Riparian Areas	Stream valleys are areas containing stream channels (including creeks, streams and rivers) and associated banks that may contain slopes and woodlands. Floodplains, wetlands, and hydric soils form stream valleys and represent the most extensive and contiguous areas of undeveloped land in the Twp. This is due to the fact that these areas present major impediments for development. They frequently flood, and hydric soils areas are either seasonally covered with standing water or have high water tables that present problems for the construction of foundations and basements. These stream valleys are protected through floodplain and wetland regulations in the Twp. zoning and land development ordinances. The 2007 Open Space Plan included a riparian analysis that defined Township riparian areas as land within 100 feet of a stream. The analysis determined that 708 acres within the Township can be classified as riparian areas, and that half of this land is fully buffered.
Watersheds	Watersheds are areas of land that drain into a river or body of water; usually divided by topography or ridge lines. Chadds Ford Twp. is within the Brandywine Creek and Chester Creek major watersheds. The Brandywine Creek watershed accounts for 92% (5,104 acres) of the Twp., and the Chester Creek accounts for the other 8% (468 acres). Minor watersheds include: Harvey Run (2,449 acres, 44% of the Twp.), Brandywine Creek (1,192 acres, 21%), Beaver Creek (861 acres, 15%), Wilson Run (376 acres, 7%), West Branch Chester Creek (250 acres, 5%), Brinton Run (226 acres, 4%), Chester Creek (218 acres, 4%).
Floodplains	The Twp. Open Space Plan states "a floodplain is defined by the boundary of land subject to flooding by an adjacent stream when that floodplain occurs within a storm event with a frequency of at least once every 100 years." The Township's primary water body associated with floodplains is Harvey Run, which flows through the middle portion of the Township.
Slopes and Woodlands	Most of the Township's steeply sloped areas (slopes of 15-25% and 25% or greater) are also wooded and adjacent to stream valleys. Sloped areas remain mostly wooded since they were also difficult to farm and develop, and they are now also protected by regulations in the Township's zoning and land development ordinances. In addition to their scenic landscape quality, woodlands also provide wildlife habitat and are extremely effective in enhancing groundwater recharge and limiting soil erosion. The Township has 1,038 acres of slopes between 15% and 25% (19% of the Twp.) and 452 acres of land over 25% slope (8% of the Township).

Wetlands and Hydric Soils	Wetlands are low-lying areas inundated by water at a frequency and duration sufficient to support wetland vegetation (wetlands include swamps, marshes and wet meadows). Wetlands remove pollutants through chemical, physical, and biological mechanisms. Wetlands recharge groundwater and help purify surface waters, serving many functions in the ecosystem. While the final determination must be made by a trained biologist or soil scientist on a site-by-site basis, several areas have been mapped from existing sources: the National Wetlands Inventory and hydric soils, mapped from the U.S. Department of Agriculture (USDA), Soil Conservation Service soil survey. The Open Space Plan counted 65 known individual wetland areas in Chadds Ford Twp., totaling 115 acres (2% of the Township). Hydric soils are generally unsuitable for development due to high water tables. These soils, as mapped from the USDA Soil Conservation Service Soil Survey, are shown on Map6-5 of the Township Open Space Plan. The Twp. contains 1,135 acres of hydric soils, which comprises roughly 20% of the Township. The largest area of hydric soils is located along Harvey Run.
Prime Agricultural Soils	Prime Agricultural Soils are soil types that are fertile and considered productive for agriculture. They consist of capability Classes I, II, and III soils, as defined by the US Dept. of Agriculture (USDA) Natural Resources Conservation Service. Capability classification is a grouping of soils that shows how suitable they are for most kinds of farming. Class I is the best-suited soils types for crop growing. Class II and III soils have limitations which reduce the choice of plants that can be successfully grown in them and may also require special conservation practices.[2] Prime agricultural soils are located virtually in all areas outside of the stream valleys of the Township. The Open Space Plan indicates that CFT has 1,780 acres of prime agricultural soils, accounting for 32% of the Township.

2. CULTURAL AND HISTORIC RESOURCES

Historic Resources are shown on Map 6-7 of the Township Open Space Plan.

Cultural Resources	The Township's cultural landscape was shaped by several key factors, including the aftermath of the Battle of Brandywine (1777), post-war industrial activities including farming and clay mining, and the establishment and success of the local artist community as illustrated by the Wyeth family, the Brandywine School and the Brandywine River Museum.
Historic Properties	The Township contains many significant structures designated as "historic," including National Historic Landmarks and properties listed in the National Register of Historic Places (a list maintained by the U.S. Department of the Interior). While these designations provide a form of official recognition, none of these designations provide any significant degree of protection. Three (3) properties are National Landmarks including the Brinton 1704 House, the N.C. Wyeth Studio and homestead, and a large portion of the Brandywine Battlefield National Historic Landmark. The Twp. has two National Register Historic Districts, including the Chadds Ford Village Historic District and the Dilworthtown Historic District. Additionally, the Twp. has several individual buildings listed on the National Register, including the John Chads House, Twadels Mill and House, the William Painter Farm and the Gilpin Homestead. (A complete list of historic and archaeological resources and mapping is included in the Township's 2007 Open Space Plan.)
Scenic Resources	Scenic areas in the Township are shown on Map 6-9 of the Open Space Plan, and include areas along and adjacent to Route 1, Webb Road, Harvey Road, Ridge Road, Smithbridge Road, and Beaver Valley Road.

[2] *Soil Survey, Chester and Delaware Counties, USDA Soil Conservation Service, pp. 4-5.*

3. OPEN SPACE

Chadds Ford Township adopted its Open Space Plan in December 2007. Preparation of the Plan was partially funded through the PECO Green Region Program, administered by the Natural Lands Trust.

Map 7-1 "Recreational Open Space" of the Open Space Plan shows open space throughout the Chadds Ford region.

The Brandywine Battlefield Historic Site is state-owned and located on the north side of Route 1. A large area of land, located in the southwest portion of the Township is shown on Map 7-1 as "conservation easement" land. Approximately eight (8) residential developments in the Township have private open space owned by Homeowners Associations.

4. SUMMARY AND PLANNING IMPLICATIONS

a. Greater protection should be provided for forests/woodlands through the Township zoning ordinance.

b. Greater protection should be provided for riparian buffer areas through the Township zoning ordinance.

c. Further protection and enhancement of riparian buffers and open space areas will protect/improve the Township's watersheds.

d. Steep slopes must continue to be protected from development and woodland clearing.

e. Hydric soils are typically unsuited for on-lot septic systems and these areas should be avoided for the placement of these facilities.

f. Prime agricultural soils should be protected from future development through the Township zoning ordinance.

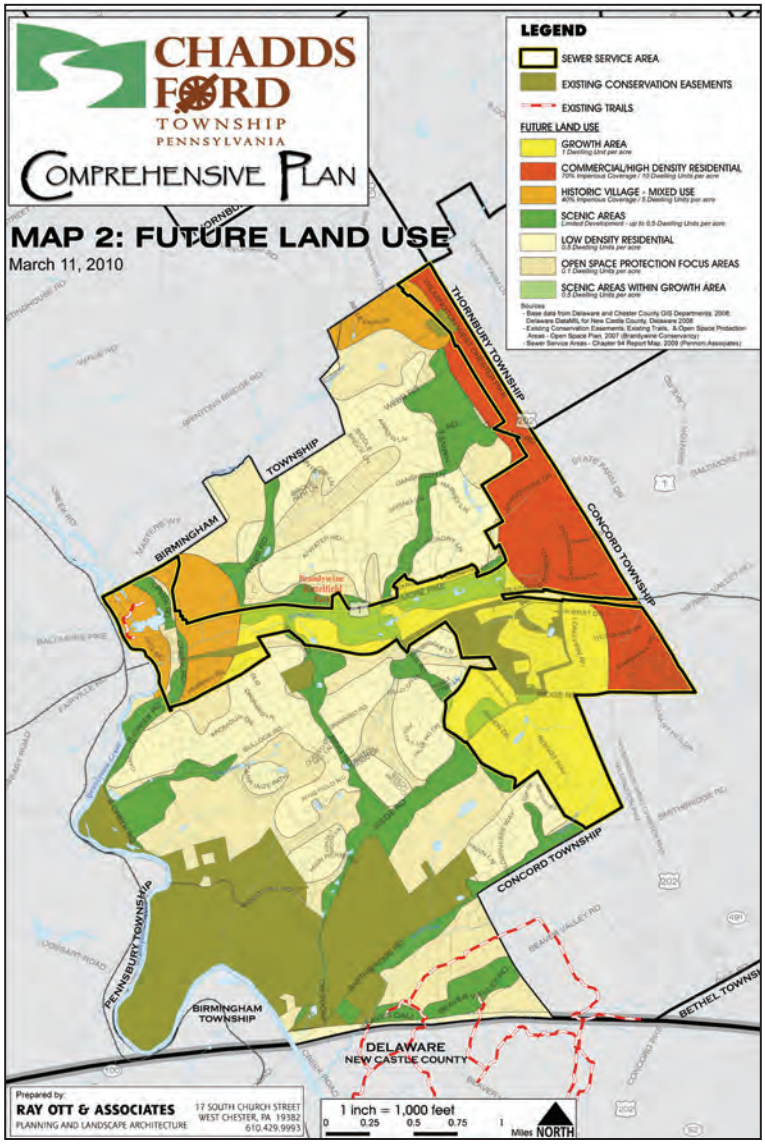
g. Several resources have received a Determination of Eligibility (DOE) by the National Register, including: The Thomas Speakman House, Brandywine Baptist Church Parsonage, Ring-Kuerner Farm, Samuel Painter Farm, Philadelphia and Central Railroad, and the expansion of the Dilworthtown Historic District. National Register nominations should be pursued for these important resources.

h. Scenic road designations can be used as a basis for guiding the future use and improvements to the road and for implementing controls via zoning and land development ordinances to help protect the landscapes along these roads.

SERVICE AREAS

Map 2: Future Land Use, dated March 11, 2010, from the 2010 Comprehensive Plan, depicted "Scenic Areas" along several Scenic Roads, including:

+ Creek Road;
+ Webb Road;
+ Harvey Road;
+ Ring Road;
+ Heyburn Road;
+ Ridge Road;
+ Smithbridge Road;
+ Beaver Valley Road; and
+ Baltimore Pike.



The Scenic Roads should be re-evaluated, and Ordinance Amendments should be drafted to address such items as: Building Setbacks; Building Heights; Street Trees and Landscaping; and Building Materials & Colors.

Appendix C

The information included in the Chadds Ford Township Comprehensive Plan of 2010 pertaining to Transportation and Circulation is provided in this Appendix C, and includes:

- Transportation & Circulation Plan;
- Map 3: Transportation Recommendations; and
- Appendix C: Transportation and Circulation Inventory and Analysis.

Note:

Some of the information in this Appendix pertains to the 2000 Census. Updated information from the 2010 Census is included in Appendix D.

1. Variety of Housing Types. Chadds Ford Township provides a wide variety of both owner-occupied and rental housing units, over half of which have been constructed since 1980. According to the 2000 Census data, the Township's renter-occupied housing accounted for 14% of all units. It is recommended that the Township continue policies to maintain this variety of housing opportunities.
2. Future Housing Needs. The residential build-out analysis prepared for the Future Land Use recommendations predicts that this Plan accommodates approximately 830 new dwelling units, which addresses the housing needs for the Township's projected population by 2030, as incorporated in the Township Open Space Plan (2008).

C. TRANSPORTATION AND CIRCULATION PLAN

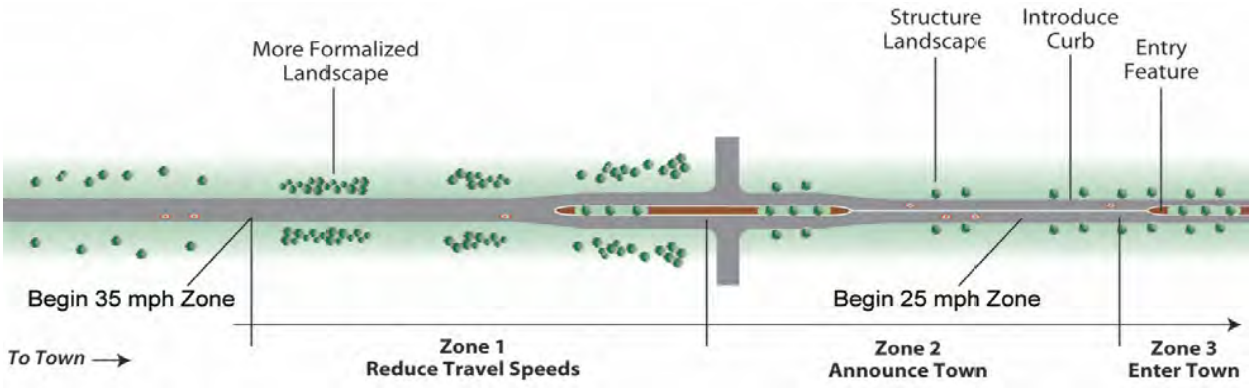
Goals and Objectives

The transportation goal from Chapter 1 is *"Provide and maintain a high quality, safe road network that serves the needs of all residents and encourages the development of alternative modes of transportation, including rail and bus service."* Objectives include the development of pedestrian and bicycle routes that link to key destinations in the Township, as well as the implementation of traffic calming techniques within the Village of Chadds Ford.

Background

Planning implications for transportation and circulation (see Appendix C: Transportation and Circulation Inventory and Analysis) include the potential need for the extension of bus service within the Township, the need to provide connected trails for pedestrians and bicyclists, and the need to address traffic congestion, in part through the completion of the connection of Hillman Drive at US Route 1 and US Route 202.

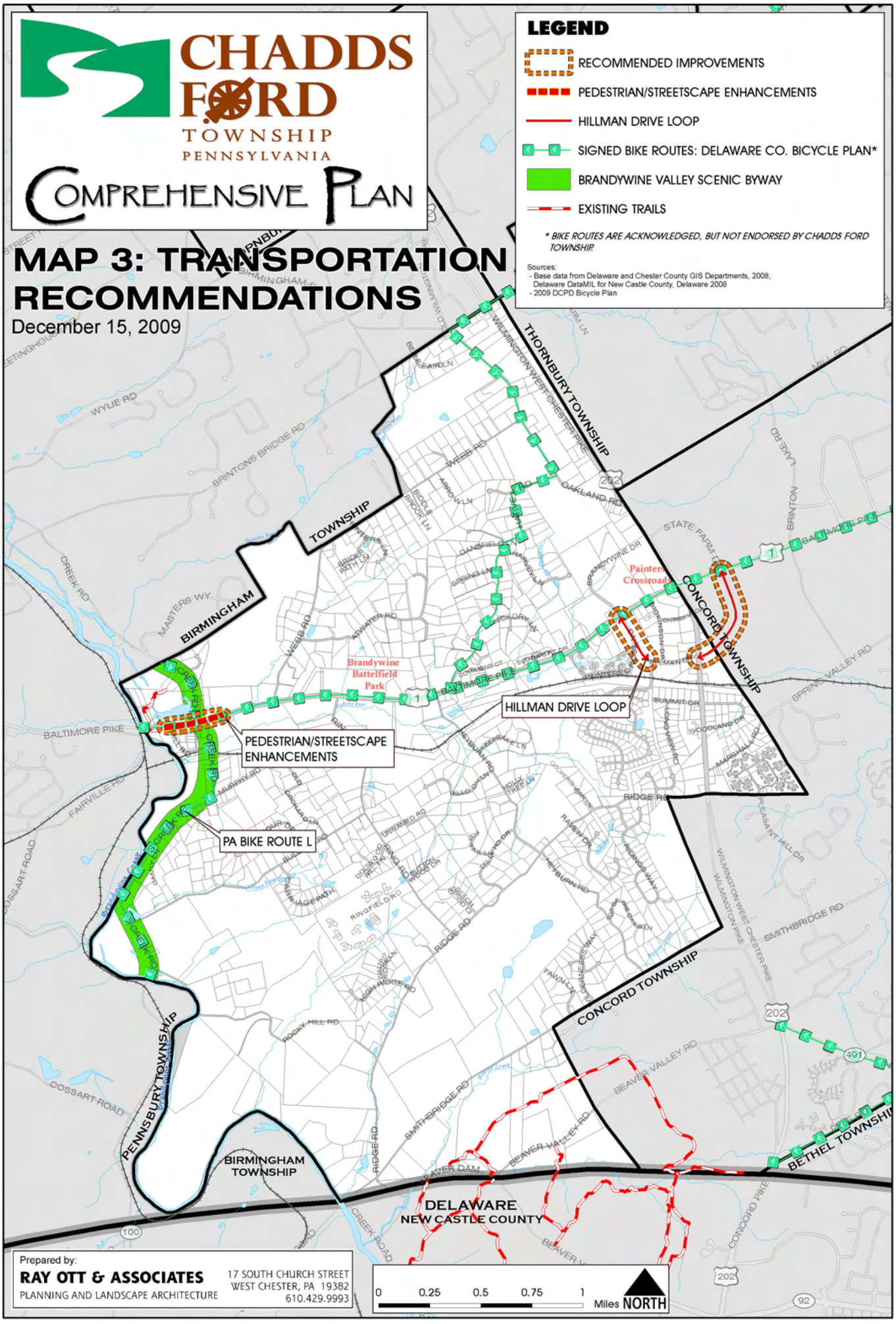
The Circulation Map (Map 3) shows the areas of the Township where the following recommendations concerning roadway improvements, trails, and scenic roads should be implemented. Recommendations regarding scenic roads are also included in the Chadds Ford Township Open Space Plan of 2007.



Source: Smart Transportation Guidebook, PennDOT, March 2008

Figure 4: Traffic Speed Transitions Techniques

1. Road Functional Classification. It is recommended that the road functional classification systems shown on the Circulation Plan Map (see Appendix C, pages C-3 and C-4) be used to guide the maintenance and future improvements of this road system.


CHADDS FORD TOWNSHIP
PENNSYLVANIA
COMPREHENSIVE PLAN
MAP 3: TRANSPORTATION RECOMMENDATIONS
December 15, 2009
LEGEND
RECOMMENDED IMPROVEMENTS
PEDESTRIAN/STREETSCAPE ENHANCEMENTS
HILLMAN DRIVE LOOP
SIGNED BIKE ROUTES: DELAWARE CO. BICYCLE PLAN*
BRANDYWINE VALLEY SCENIC BYWAY
EXISTING TRAILS
* BIKE ROUTES ARE ACKNOWLEDGED, BUT NOT ENDORSED BY CHADDS FORD TOWNSHIP.
Sources:
- Base data from Delaware and Chester County GIS Departments, 2008; Delaware DataMIL for New Castle County, Delaware 2008
- 2009 DCPD Bicycle Plan
THORNBURY TOWNSHIP
BIRMINGHAM TOWNSHIP
CONCORD TOWNSHIP
PENNSBURY TOWNSHIP
BIRMINGHAM TOWNSHIP
DELAWARE
NEW CASTLE COUNTY
Brandywine Battlefield Park
Painters Crossroads
HILLMAN DRIVE LOOP
PEDESTRIAN/STREETSCAPE ENHANCEMENTS
PA BIKE ROUTE L
BALTIMORE PIKE
WILMINGTON WEST CHESTER PIKE
OAKLAND RD
WEBB RD
BRINTONS BRIDGE RD
WYLIE RD
CREEK RD
FAIRVILLE RD
COSSART ROAD
RIDGE RD
SMITHBRIDGE RD
BEAVER VALLEY RD
BRANDYWINE DR
SPRING VALLEY RD
BRINTON
LAKE RD
Prepared by:
RAY OTT & ASSOCIATES
PLANNING AND LANDSCAPE ARCHITECTURE
17 SOUTH CHURCH STREET
WEST CHESTER, PA 19382
610.429.9993
0 0.25 0.5 0.75 1 Miles
NORTH

APPENDIX C: TRANSPORTATION AND CIRCULATION PLAN AND ANALYSIS

This chapter addresses the elements of existing transportation, road circulation, and bike routes and trail systems in the Township. A summary is provided at the end of the chapter.

1. COMMUTING TO WORK

Table C-1, Commuting to Work, illustrates how Township residents travel to work. While Delaware County residents reported that 75% of them drive alone to work, Chadds Ford Township residents report that 82.5% of workers drive to work alone. The Township has 13 residents who walk to work, and 35 residents report using public transportation as a means of traveling to work.

Table C- 1: Commuting to Work

	2000	*Twp.*	*County*
Workers 16 years and older	**1,714**	**100.0%**	**100.0%**
Drove alone (car, truck or van)	1,414	82.5%	75.0%
Carpooled (car, truck or van)	143	8.3%	9.7%
Public Transportation*	35	2.0%	7.8%
Walked	13	0.8%	3.7%
Other means	15	0.9%	0.7%
Worked At Home	94	5.5%	2.7%

Avg. travel time to work (minutes)		**28.3**	**27.1**

** Used public transit as part of commute.*

Source: 2000 U.S. Census.

2. PUBLIC TRANSPORTATION

As discussed above, only 35 of 1,714 working residents of the Township used public transportation to commute to work. The public transportation choices for the residents of the Township are both limited and inconvenient. This limited access to public transportation not only affects residents' commuting choices but also the choices of those who work in the Township but live outside the Township.

Rail Service

The Township does not have SEPTA regional rail service within the township limits. Residents desiring to use regional rail service must use roadways to access transit stations located in surrounding areas such as Marcus Hook (R2 Marcus Hook/Wilmington) or Elwyn (R3 Media/Elwyn); while both stations are in Delaware County, they are both a distance from the township. Both regional rail systems provide service between southern and central Delaware County to the City of Philadelphia, respectively. Townships residents can also access SEPTA regional rail in nearby eastern Chester County at the Exton Station (R5 Paoli/Thorndale). The Exton Station is also an Amtrak station stop servicing New York City, Washington D.C. and beyond.

Bus Service

Currently, SEPTA operates a single bus route which serves the Township. SEPTA Route 111 provides service to the Shopping Center at Painters Crossing and the Chadds Ford Business Campus. Route 111 terminates at the 69th Street Terminal Station providing access to multiple bus routes and the Market-Frankfort Line light rail service. On weekdays Route 111 service is provided during the AM/PM peak travel times and hourly on the weekends.

Trolley/Subway Service

There is no trolley or subway service to or between locations in the Township. There is service between Philadelphia and Media and Sharon Hill in Delaware County; however Township residents must travel to transit stations via alternate means to access this service.

ADA Paratransit Service

In accordance with the Americans with Disabilities Act (ADA), SEPTA provides comparable service for residents with disabilities who are functionally unable to use regular accessible fixed route bus service. This service would apply only to those eligible individuals needing to use the Route 111 service and beyond in SEPTA's coverage area.

Delaware County Transit Options

The Community Transit of Delaware County provides door-to-door transportation service for medically qualified and elderly qualified residents of Delaware County. The service requires an advanced reservation and operates on a first come, first served basis. The Community Transit services destinations within Delaware County and Philadelphia, and destinations within Montgomery and Chester Counties on a more limited basis.

3. CIRCULATION SYSTEM

The existing road network plays a significant role in providing transportation services to Township residents. In this section, the system is inventoried as follows:

- *Roadway Functional Classification*
- *Roadway Inventory (including traffic volumes, typical cross sections and traffic control devices)*

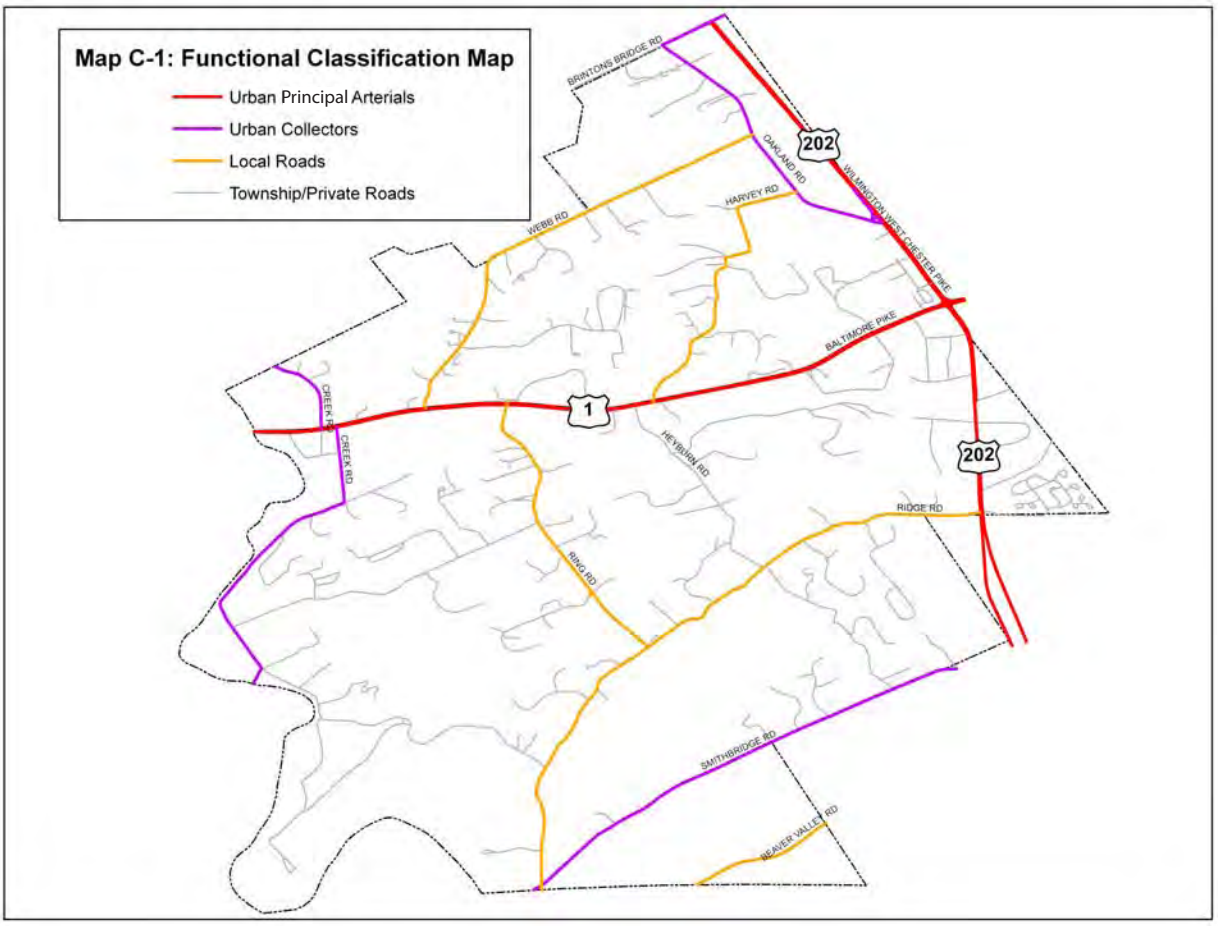
Roadway Functional Classification

Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide. Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads. The Functional Classifications presented in the following section were gathered using PennDOT Functional Classification Maps for Delaware County. Urbanized areas are designated as such by the Bureau of the Census. Delaware County has been designated as an urban area and

thus certain functional classifications apply. The four functional systems for urbanized areas are urban principal arterials, minor arterial streets, collector streets, and local streets.

The Township has a total of approximately 33.2 miles of roads within its boundaries, excluding privately owned and maintained roads. These roads are owned and maintained either by the Township or the State. The State owns approximately 17.7 miles, while the Township owns the remaining 13.4 miles. The remaining roads are privately owned roads which serve small groups of residences within the township. There are 10 traffic signals within, or on the boundaries of the Township.

The different classifications for roadways found within the township are shown on Map C-1. Details on road classifications and traffic count information are further described below.



Urban Principal Arterials

Roads in Township: US Route 202 (Wilmington Pike)
US Route 1 (Baltimore Pike)

The principal arterial system carries the major portion of trips entering and leaving urban areas, as well as the majority of through movements desiring to bypass an area. Because of the nature of the travel served by the principal arterial system, almost all fully and partially controlled access facilities will be part of this functional system. However, this system is not restricted to controlled access routes. There are approximately 6.2 miles of Urban Principal Arterials in the Township.

Urban Minor Arterials

Roads in Township: None in Township

The minor arterial street system should interconnect with and augment the urban principal arterial system and provide service to trips of moderate length at a somewhat lower level of travel mobility than principal arterials. This system also distributes travel to geographic areas smaller than those identified with the higher system.

Urban Collectors

Roads in Township: Brintons Bridge Road
Creek Road
Marshall Road
Oakland Road
Smith Bridge Road

The collector street system provides both land access service and traffic circulation within residential neighborhoods, commercial and industrial areas. It differs from the arterial system in that facilities on the collector system may penetrate residential neighborhoods, distributing trips from the arterials through the area to the ultimate destination. Conversely, the collector street also collects traffic from local streets in residential neighborhoods and channels it into the arterial system. There are approximately 6.5 miles of Urban Collectors in the Township.

Local Roads

Roads in Township: Remainder of public roads in the Township.

The local road system comprises all facilities not on one of the higher systems. It serves primarily to provide direct access to abutting land and access to the higher order systems. It offers the lowest level of mobility and usually contains no bus routes. Service to through traffic movement usually is deliberately discouraged. There are approximately 20.5 miles of Local Roads in the Township.

Private Roads

Roads in Township: Roads owned and maintained by Homeowners Associations or private individuals.

Private roads provide access to adjacent land, typically only for residential uses. They typically provide connectivity to the network at a single point as their intent is to serve at least three residences. There are 16.9 miles of private roads in the township.

Road Inventory

Applied Bank Boulevard

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.09 miles

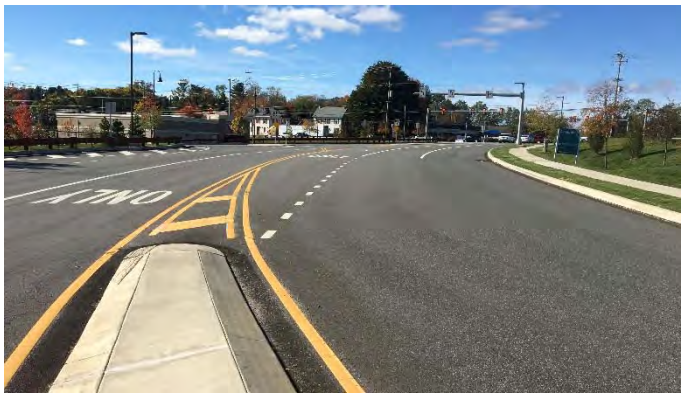
Number of Lanes: 2

Lane Width: 14 feet

Shoulders: No

Center Median: Yes

Speed Limit: 25 mph



Roadway runs from Wilmington/West Chester Pike (S.R. 0202) just south of Baltimore Pike (S.R. 0001) to the township line. Signalized intersection includes US 202.

Atwater Road (T390)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.9 miles

Number of Lanes: 2

Lane Width: 11 feet

Shoulders: No

Center Median: No

Speed Limit: 25 mph

Atwater Road runs from Webb Road to a dead end, and intersects one state road. Intersections where only Atwater Road is stop controlled include Webb Road.

Beaver Valley Road (S.R. 3044)

Ownership: State

Func. Class: Local Road

ADT: 603

Year of ADT: 2012

Roadway Length: 0.6 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No

Center Median: No

Speed Limit: 40 mph

Roadway runs from the Delaware State line – just north of Beaver Dam Road - to the township line – just west of a private roadway, and intersects no state or township roads.

Beechwood Circle (T402)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.2 miles

Number of Lanes: 2

Lane Width: 12 feet

Shoulders: No, raised curbing along both edges

Center Median: No

Speed Limit: Not posted

Beechwood Circle runs from Ridge Road to a dead end, and intersects one state road. Intersections where only Beechwood Circle is stop controlled include Ridge Road.

Bellefair Lane (T410)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.2 miles

Number of Lanes: 2

Lane Width: 12 feet

Shoulders: No, raised curbing along both edges

Center Median: No

Speed Limit: Not available

Bellefair Lane runs from Brinton's Bridge Road to a dead end, and intersects one state road. Intersections where only Bellefair Lane is stop controlled include Brinton's Bridge Road.

Brandywine Drive (T419)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.6 miles

Number of Lanes: 2

Lane Width: 18 feet

Shoulders: No, raised curbing along both edges and some sidewalk

Center Median: No

Speed Limit: 25 mph

Brandywine Drive runs from US 1 to US 202, and intersects two state roads. Signalized intersections include US 1 and US 202.

Brinton's Bridge Road (S.R.4016)

Ownership: State

Func. Class: Urban Collector

ADT: 2,510

Year of ADT: 2002

Roadway Length: 0.9 miles

Number of Lanes: 2

Lane Width: 11 feet

Shoulders: No

Center Median: No

Speed Limit: 40 mph

Brinton's Bridge Road runs from South New Street to just west of Cherry Farm Lane, and intersects one state road and two township roads. Intersections where only the minor leg is stop controlled include Bellefair Lane. Intersections where all legs are stop controlled include Oakland Road. Signalized intersections include US 202.

Bullock Road (T326)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 1.3 miles

Number of Lanes: 2

Lane Width: 9 feet

Shoulders: No

Center Median: No

Speed Limit: 25 mph

Bullock Road runs from Ring Road to Creek Road, and intersects two state roads and one township road. Intersections where only the minor leg is stop controlled include Carriage Path. Intersections where only Bullock Road is stop controlled include Ring Road and Creek Road.

Buttonwood Drive (T395)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.1 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No

Center Median: No

Speed Limit: Not posted

Buttonwood Drive runs from Ring Road to a dead end, and intersects one state road. Intersections where only Buttonwood Drive is stop controlled include Ring Road.

Carnation Lane

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.1 miles

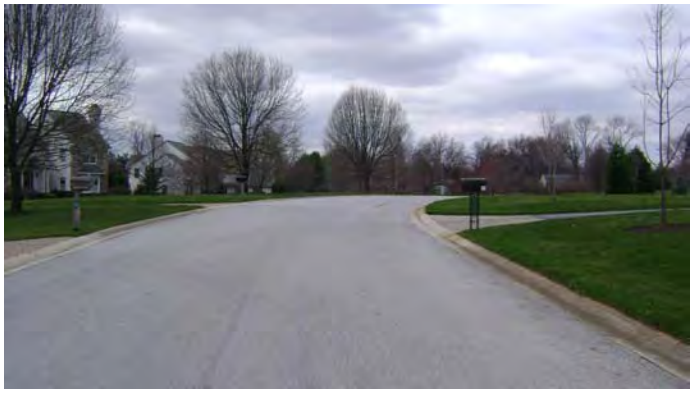
Number of Lanes: 2

Lane Width: 12 feet

Shoulders: No, low profile curb and gutter along both edges

Center Median: No

Speed Limit: Not posted



Carnation Lane runs from Harvey Drive to a dead end, and intersects one state road. Intersections where only Carnation Lane is stop controlled include Harvey Drive.

Carriage Path (T404)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.4 miles

Number of Lanes: 2

Lane Width: 12 feet

Shoulders: No

Center Median: No

Speed Limit: Not posted

Carriage Path runs from Bullock Road to a dead end, and intersects one township road. Intersections where only Carriage Path is stop controlled include Bullock Road.

Cooper's Hawk Lane (T409)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.1 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No, low profile curb and gutter along both edges

Center Median: No

Speed Limit: Not posted

Cooper's Hawk Lane runs from Ridge Road to a dead end, and intersects one state road. Intersections where only Cooper's Hawk Lane is stop controlled include Ridge Road.

Creek Road (S.R. 3101)

Ownership: State

Func. Class: Urban Collector

ADT: North of US 1: 3,510

South of US 1: 2,624

Year of ADT: 2012

2016

Roadway Length: 1.9 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No

Center Median: No

Speed Limit:

North of US 1: 40 mph

South of US 1: 35 mph

Creek Road runs from Delaware State line just south of Rocky Hill Road to the Chester County line just north of Upper Bank Drive, and intersects two state roads and two township roads. Intersections where only the minor leg is stop controlled include Bullock Road and Station Way Road. Intersections where only the south leg of Creek Road is stop controlled include US 1. Signalized intersections include US 1 / Station Way Road.

Dogwood Hill Lane (T405)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.1 miles

Number of Lanes: 2

Lane Width: 12 feet

Shoulders: No

Center Median: No

Speed Limit: Not posted

Dogwood Hill Lane runs from Ring Road to a dead end, and intersects one state road. Intersections where only Dogwood Hill Lane is stop controlled include Ring Road.

Eagle Circle (T408)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.1 miles

Number of Lanes: 2

Lane Width: 12 feet

Shoulders: No, raised curb along both edges

Center Median: No

Speed Limit: Not posted

Eagle Circle runs from Raven Drive to a dead end, and intersects one township road. Intersections where only Eagle Circle is stop controlled include Raven Drive.

Grouse Trail (T414)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.1 miles

Number of Lanes: 2

Lane Width: 12 feet

Shoulders: No, raised curb along both edges

Center Median: No

Speed Limit: Not posted

Grouse Trail runs from Pheasant Lane to a dead end, and intersects one township road. Intersections where only Grouse Trail is stop controlled include Pheasant Lane.

Harvey Drive (S.R. 4020)

Ownership: State

Func. Class: Local Road

ADT: 453

Year of ADT: 2013

Roadway Length: 1.4 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No

Center Median: No

Speed Limit: 25 mph

Harvey Drive runs from US 1 to Oakland Road, and intersects one state road and three township roads. Intersections where only the minor leg is stop controlled include Spring Lane and Carnation Lane. Intersections where only Harvey Drive is stop controlled include US 1. Intersections where all legs are stop controlled include Oakland Road.

Heyburn Road (T304)

Ownership: Township

Func. Class: Local Road

ADT: 1,071

Year of ADT: 2009

Roadway Length: 1.8 miles

Number of Lanes: 2

Lane Width: 9 feet

Shoulders: No

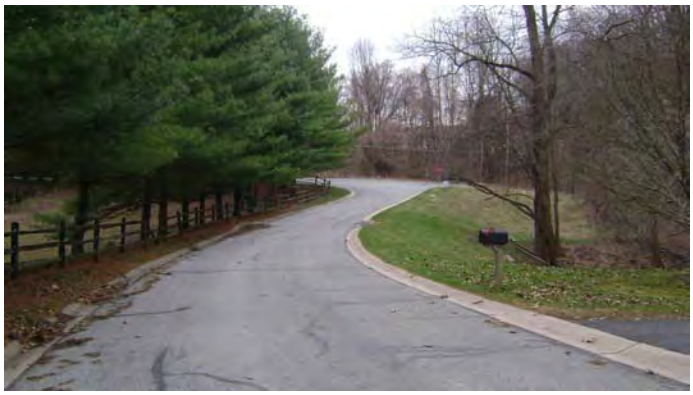
Center Median: No

Speed Limit: 25 mph

Heyburn Road runs from Smith Bridge Road to US 1, and intersects three state roads and four township roads. Intersections where only the minor leg is stop controlled include Top of the Oaks, Tally Ho Drive, Holly Tree Lane, and Hilloch Lane. Intersections where only Heyburn Road is stop controlled include Smith Bridge Road and US 1. Intersections where all legs are stop controlled include Ridge Road.

High Ridge Road (T415)

Ownership: Township
Func. Class: Local Road
ADT: Not available
Year of ADT: Not available
Roadway Length: 0.4 miles
Number of Lanes: 2
Lane Width: 10 feet
Shoulders: No, low profile curb and gutter along both edges
Center Median: No
Speed Limit: Not posted



High Ridge Road runs from Ridge Road to a dead end, and intersects one state road and one township road. Intersections where only the minor leg is stop controlled include Walnut Ridge Lane. Intersections where only High Ridge Road is stop controlled include Ridge Road.

Hilloch Lane (T397)

Ownership: Township
Func. Class: Local Road
ADT: Not available
Year of ADT: Not available
Roadway Length: 0.4 miles
Number of Lanes: 2
Lane Width: 10 feet
Shoulders: No, low profile curb and gutter along both edges
Center Median: No
Speed Limit: Not posted

Hilloch Lane runs from Heyburn Road to a dead end, and intersects one township road. Intersections where only Hilloch Lane is stop controlled include Heyburn Road.

Hoffman's Mill Road (T302)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.2 miles

Number of Lanes: 2

Lane Width: 12 feet

Shoulders: No

Center Median: No

Speed Limit: Not posted

Hoffman's Mill Road runs from Station Way Road to US 1, and intersects one state road and one township road. Intersections where only Hoffman's Mill Road is stop controlled include Station Way Road and US 1.

Holly Tree Lane (T417)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.1 miles

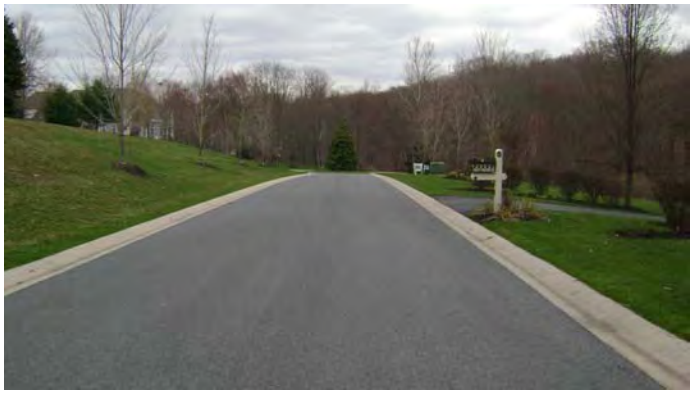
Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No, low profile curb and gutter along both edges

Center Median: No

Speed Limit: Not posted



Holly Tree Lane runs from Heyburn Road to a dead end, and intersects one township road. Intersections where only Holly Tree Lane is stop controlled include Heyburn Road.

Hunter's Lane (T398)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.3 miles

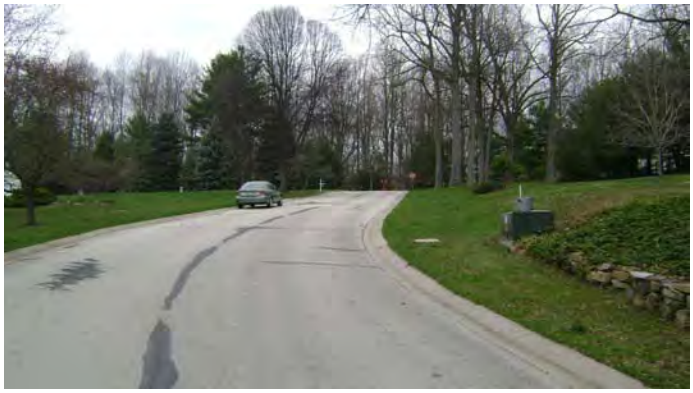
Number of Lanes: 2

Lane Width: 11 feet

Shoulders: No, low profile curb and gutter along both edges

Center Median: No

Speed Limit: Not posted



Hunter's Lane runs from Webb Road to a dead end, and intersects one state road. Intersections where only Hunters Lane is stop controlled include Webb Road.

Kelly Drive

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.1 miles

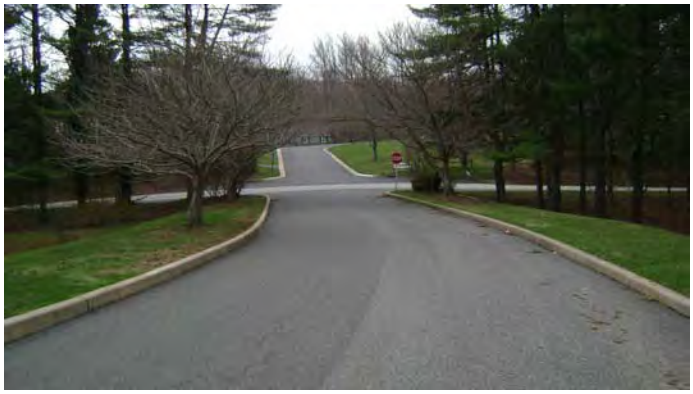
Number of Lanes: 2

Lane Width: 12 feet

Shoulders: No, raised curbing along both edges

Center Median: No

Speed Limit: Not posted



Kelly Drive runs from Smith Bridge Road to a dead end, and intersects one state road. Intersections where only Kelly Drive is stop controlled include Smith Bridge Road.

Longview Road (T394)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.3 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No

Center Median: No

Speed Limit: Not posted

Longview Road runs from Summit Drive to a dead end, and intersects one township road. Intersections where only Longview Road is stop controlled include Summit Drive.

Marshall Road (T325)

Ownership: Township

Func. Class: Urban Collector

ADT: 4,464

Year of ADT: 2012

Roadway Length: 0.4 miles

Number of Lanes: 2

Lane Width: 9 feet

Shoulders: No

Center Median: No

Speed Limit: 25 mph

Marshall Road runs from US 202 to the township line, and intersects one state road. Intersections where only Marshall Road is stop controlled include US 202.

Mountain View Trail (T401)

Ownership: Township
Func. Class: Local Road
ADT: Not available
Year of ADT: Not available
Roadway Length: 0.1 miles
Number of Lanes: 2
Lane Width: 10 feet
Shoulders: No, low profile curb and gutter along north edge
Center Median: No
Speed Limit: Not posted

Mountain View Trail runs from Wilderness Way to a dead end, and intersects one township road. Intersections where only Mountain View Trail is stop controlled include Wilderness Way.

Oakland Road (T389)

Ownership: Township
Func. Class: Urban Collector
ADT: 4,369
Year of ADT: 2016
Roadway Length: 1.3 miles
Number of Lanes: 2
Lane Width: 10 feet
Shoulders: No
Center Median: No
Speed Limit: 25 mph

Oakland Road runs from Brinton's Bridge Road to US 202, and intersects four state roads. Intersections where only the minor leg is stop controlled include the off ramp from US 202. Intersections where all legs are stop controlled include Brinton's Bridge Road, Webb Road, and Harvey Road. Signalized intersections include US 202.

Pheasant Lane (T413)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.1 miles

Number of Lanes: 2

Lane Width: 12 feet

Shoulders: No, raised curbing along both edges

Center Median: No

Speed Limit: Not posted

Pheasant Lane runs from Ridge Road to a dead end, and intersects one state road and one township road. Intersections where only the minor leg is stop controlled include Grouse Trail. Intersections where only Pheasant Lane is stop controlled include Ridge Road.

Raven Drive (T407)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.5 miles

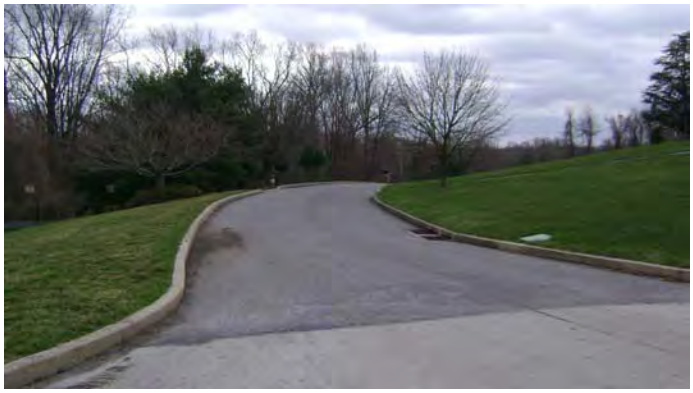
Number of Lanes: 2

Lane Width: 12 feet

Shoulders: No, raised curbing along both edges

Center Median: No

Speed Limit: Not posted



Raven Drive runs from Ridge Road to a dead end, and intersects one state road and one township road. Intersections where only the minor leg is stop controlled include Eagle Circle. Intersections where only Raven Drive is stop controlled include Ridge Road.

Ridge Road (S.R. 3048)

Ownership: State

Func. Class: Local Road

ADT: 2,342

Year of ADT: 2014

Roadway Length: 2.8 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No

Center Median: No

Speed Limit: 35 mph

Ridge Road runs from US 202 to Smith Bridge Road, and intersects three state roads and nine township roads. Intersections where only the minor leg is stop controlled include Pheasant Lane, Ridings Boulevard, Cooper's Hawk Lane), Raven Drive, Tally Ho Drive, Beechwood Circle, Ring Road, High Ridge Road, and Rocky Hill. Intersections where only Ridge Road Drive is stop controlled include Smith Bridge Road. Intersections where all legs are stop controlled include Heyburn Road. Signalized intersections include US 202.

Ridings Boulevard (T411)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.1 miles

Number of Lanes: 2

Lane Width: 14 feet

Shoulders: No, raised curbing along both edges

Center Median: Yes, raised grass and concrete

Speed Limit: Not posted

Ridings Boulevard runs from Ridge Road to Ridings Way, and intersects one state road and one township road. Intersections where only Ridings Boulevard is stop controlled include Ridge Road and Ridings Way.

Ridings Way (T412)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.8 miles

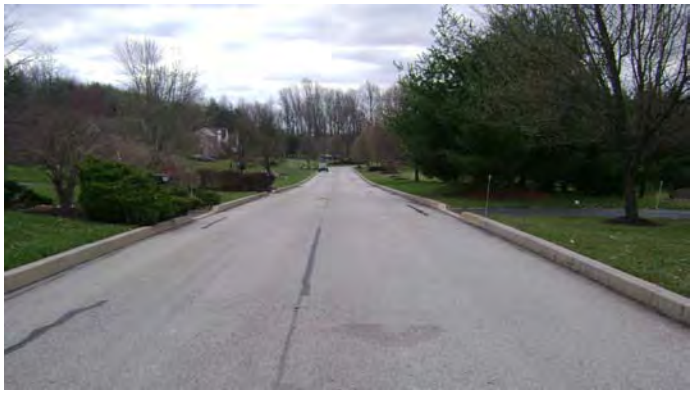
Number of Lanes: 2

Lane Width: 12 feet

Shoulders: No, raised curbing along both edges

Center Median: No

Speed Limit: Not posted



Ridings Way runs from a dead end to Ridings Way, and intersects two township roads. Intersections where only the minor leg is stop controlled include Ridings Boulevard. Intersections where only Ridings Way is stop controlled include Ridings Way.

Ring Road (S.R. 3027)

Ownership: State

Func. Class: Local Road

ADT: 1,667

Year of ADT: 2014

Roadway Length: 1.4 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No

Center Median: No

Speed Limit: 35 mph

Ring Road runs from Ridge Road to US 1, and intersects two state and three township roads. Intersections where only the minor leg is stop controlled include Buttonwood Drive, Dogwood Hill Lane, and Bullock Road. Intersections where only Ring Road is stop controlled include Ridge Road. Signalized intersections include US 1.

Rocky Hill (T387)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.1 miles

Number of Lanes: 2

Lane Width: 9 feet

Shoulders: No

Center Median: No

Speed Limit: Not posted

Rocky Hill runs from Ridge Road to a dead end, and intersects one state road. Intersections where only Rocky Hill is stop controlled include Ridge Road.

Smith Bridge Road (S.R. 3046)

Ownership: State

Func. Class: Urban Collector

ADT: 1,438

Year of ADT: 2016

Roadway Length: 2.0 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No

Center Median: No

Speed Limit: 40 mph

Smith Bridge Road runs from Delaware State line – just west of Ridge Road - to just west of Feldspar Drive, and intersects one state road and three township roads. Intersections where only the minor leg is stop controlled include Heyburn Road, Wilderness Way, Kelly Drive, and Ridge Road.

South View Path (T400)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.1 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No, low profile curb and gutter along both edges

Center Median: No

Speed Limit: Not posted

South View Path runs from Wilderness Way to a dead end, and intersects one township road. Intersections where all legs are stop controlled include Wilderness Way – except northbound lane of Wilderness Way.

Spring Lane (T406)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.2 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No, raised curbing along both edges

Center Median: No

Speed Limit: Not posted

Spring Lane runs from Harvey Drive to a dead end, and intersects one state road. Intersections where only Spring Lane is stop controlled include Harvey Drive.

Springhill Drive (T403)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.2 miles

Number of Lanes: 2

Lane Width: 14 feet

Shoulders: No, raised curbing along both edges

Center Median: No

Speed Limit: Not posted

Springhill Drive runs from US 202 / Ridge Road to Pleasant Hill Drive, and intersects one state road. Signalized intersections include US 202 / Ridge Road.

Station Way Road

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.2 miles

Number of Lanes: 2

Lane Width: 12 feet

Shoulders: No

Center Median: No

Speed Limit: Not posted

Station Way Road runs from Creek Road to US 1. The section of roadway between Hoffman's Mill Road and US 1 is a one way road running towards US 1, and intersects two state roads and one township road. Intersections where only the minor leg is stop controlled include Hoffman's Mill Road. Intersections where only Station Way is stop controlled include Creek Road. Signalized intersections include US 1.

Summit Drive (T393)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.2 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No

Center Median: No

Speed Limit: Not posted

Summit Drive runs from US 202 to a dead end, and intersects one state road and one township road. Intersections where only the minor leg is stop controlled include Longview Road. Intersections where only Summit Drive is stop controlled include US 202.

Tally Ho Drive (T396)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.4 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No

Center Median: No

Speed Limit: Not posted

Tally Ho Drive runs from Ridge Road to a dead end, and intersects one state road and one township road. Intersections where only Tally Ho Drive is stop controlled include Ridge Road and Heyburn Road.

Top of the Oaks (T418)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.3 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No

Center Median: No

Speed Limit: 25 mph

Top of the Oaks runs from Heyburn Road to a dead end, and intersects one township road. Intersections where only Top of the Oaks is stop controlled include Heyburn Road.

US 1: Baltimore Pike (S.R. 0001)

Ownership: State

Func. Class: Principal Arterial Highway

ADT:

	At US 202	At Chadd's Ford Village
	NB: 14,395	NB: 14,400
	SB: 13,478	SB: 13,645

Year of ADT: 2016

Roadway Length: 2.8 miles

Number of Lanes: 4

Lane Width: 12 feet

Shoulders: Yes, variable width

Center Median: Yes, raised concrete

Speed Limit: 45-55 mph

Baltimore Pike runs from just west of Hoffman's Mill Road to US 202, and intersects six state roads and three township roads. Intersections where only the minor leg is stop controlled include Hoffman's Mill Road, Creek Road south of US 1, Webb Road, Heyburn Road, and Harvey Road. Signalized intersections include Creek Road / Station Way Road, Ring Road, Brandywine Drive / Hillman Drive (private road), and US 202.

US 202: Wilmington / West Chester Pike (S.R. 0202)

Ownership: State

Func. Class: Principal Arterial Highway

ADT:

North of US 1	South of US 1
NB: 20,294	NB: 18,148
SB: 18,628	SB: 18,485

Year of ADT: 2012

Roadway Length: 3.4 miles

Number of Lanes: 4

Lane Width: 12 feet

Shoulders: Yes, variable width

Center Median: Yes, raised concrete

Speed Limit: 45 mph

Wilmington / West Chester Pike runs from Brinton's Bridge Road to just north of Smith Bridge Road, and intersects three state roads and five township roadways. Intersections where only the minor leg is stop controlled include Summit Drive / Woodland Drive, Woodland Drive, and Marshall Road. Signalized intersections include Brinton's Bridge Road, Oakland Road, Brandywine Drive, US 1, Hillman Drive/Applied Bank Boulevard, Corporate Center Way (private road), and Ridge Road / Springhill Drive.

Walnut Ridge Lane (T416)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.1 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No, low profile curb and gutter along both edges

Center Median: No

Speed Limit: Not posted

Walnut Ridge Lane runs from High Ridge Road to a dead end, and intersects one township road. Intersections where only Walnut Ridge Lane is stop controlled include High Ridge Road.

Webb Road (S.R. 4022)

Ownership: State

Func. Class: Local Road

ADT: 1,511

Year of ADT: 2015

Roadway Length: 2.0 miles

Number of Lanes: 2

Lane Width: 9 feet

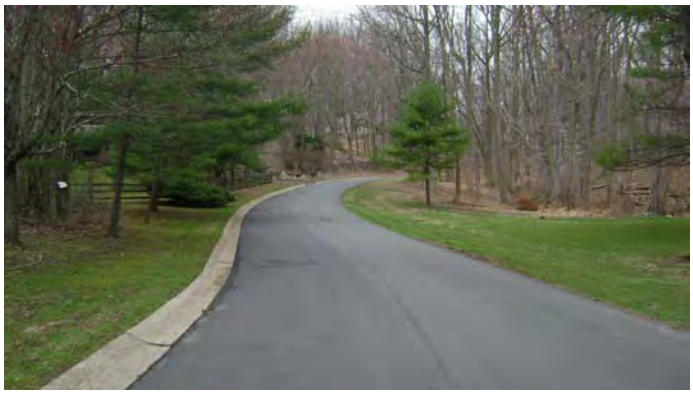
Shoulders: No

Center Median: No

Speed Limit: 35 mph

Webb Road runs from US 1 to Oakland Road, and intersects one state road and three township roads. Intersections where only the minor leg is stop controlled include Atwater Road and Hunters Lane. Intersections where only Webb Road is stop controlled include US 1. Intersections where all legs are shop controlled include Oakland Road.

Wilderness Way (T399)



Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.3 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No, raised curbing along west edge

Center Median: No

Speed Limit: Not posted

Wilderness Way runs from Smith Bridge Road to a dead end, and intersects one state road and two township roadways. Intersections where only the minor leg is stop controlled include Mountain View Trail. Intersections where only Wilderness Way is stop controlled include Smith Bridge Road. Intersections where all legs are shop controlled include South View Path – except northbound leg of Wilderness Way.

Woodland Drive (T392)

Ownership: Township

Func. Class: Local Road

ADT: Not available

Year of ADT: Not available

Roadway Length: 0.5 miles

Number of Lanes: 2

Lane Width: 10 feet

Shoulders: No, low profile curb and gutter along both edges

Center Median: No

Speed Limit: Not posted

Woodland Drive runs from US 202 to US 202, and intersects one state road and one township road. Intersections where only Woodland Drive is stop controlled include US 202 / Summit Drive and US 202.

4. ROADWAY CONDITIONS

Average Daily Traffic

Average Annual Daily Traffic (AADT) is the total 24-hour traffic volume, in both directions, on a road segment for a typical weekday. ADT data is be used to gauge both the use and performance of these roadways. Traffic volumes were gathered using PennDOTs Internet Traffic Monitoring System (iTMS) where available. The iTMS program is supported by PennDOT's Bureau of Planning and Research which is responsible for capturing, analyzing and reporting roadway data to various agencies and the public. This data was supplemented with a smaller data collection effort at specific sites helping to provide overall insight into circulation of vehicles within and through the Township.

Table C-2, Roadway Segment AADT contains the AADT volumes that were compiled and used for analysis in this study. Not surprisingly, US 202 (Wilmington/West Chester Pike) and US 1 (Baltimore Pike) carry the largest daily volumes through the township at roughly 37,000 and 28,000 vehicles, respectively. Oakland Road, Creek Road, Ridge Road, Marshall Road and Brintons Bridge Road carry between 4,500 and 2,000 vehicles daily through and within the Township. Webb Road, Ring Road, Smith Bridge Road, Heyburn Road, Beaver Valley Road, Beaver Dam Road and Brandywine Drive carry 1,900 or less vehicles daily. For more details on the AADTs please see Table C-2; for roadway performance figures please see Table C-3 in the Roadway Performance section.

Table C-2: Roadway Segment AADT

Road Name	AADT[1]
Other Principal Arterial Highways	
US-1; Baltimore Pike	
At Village of Chadds Ford	28,045
Near US-202	27,873
US-202; Wilmington / West Chester Pike	
North of US-1	38,922
South of US-1	36,633
Urban Collector	
Brinton's Bridge Road	2,510
Creek Road	
North of US-1	3,510
South of US-1	2,624
Marshall Road	4,464
Oakland Road	4,369
Smith Bridge Road	1,438
Local Road	
Beaver Valley Road	603
Harvey Road	453
Heyburn Road[2]	1,071
Ridge Road	2,342
Ring Road	1,667
Webb Road	1,511

[1] *Unless noted, AADT values from PennDOT iTMS*
[2] *AADT collected as part of this effort*

Accident Reports

Crash data for Baltimore Pike & Heyburn Road and Ridge Road & Heyburn Road were retrieved utilizing PennDOT's database. At this time reportable crash data more recent than 2007 is not available, therefore this effort focused on data from 2003 to 2007. A review of the crash history at the intersection of US 1 & Heyburn Road and Ridge Road & Heyburn Road were conducted to determine if the type of crashes occurring at either intersection warranted installing a traffic signal or other modification of existing traffic control.

US 1 & Heyburn Road
The review of crash data at the intersection of US 1 & Heyburn Road was conducted to determine if the recent fatality that occurred in December 2008 was preceded by accidents within the intersection that could be corrected by a traffic signal. Crash data was provided by PennDOT for the past full five years, 2003 – 2007, for approximately 500 feet in each direction along US 1 where the intersection is located. During this time period there were a total of 9 reportable crashes involving 20 vehicles. Unfortunately the most recent fatality in December 2008 was not available from PennDOTs records, but further research of a police report may provide the cause of the crash.

Based on the review of crash data available for US 1 & Heyburn Road only 2 of the 9 accidents are correctable through the use of a traffic signal. The vehicle action that can be corrected by a traffic signal includes a car turning left at the intersection onto Heyburn Road and being hit by oncoming traffic.

Ridge Road & Heyburn Road
The review of crash data at the intersection of Ridge Road & Heyburn Road was conducted to determine if the stop controlled intersection would warrant modification of existing traffic control based on the accidents recorded along Ridge Road. Crash data was provided by PennDOT for the past full five years, 2003 – 2007. During this time period there were a total of 3 reportable crashes involving 4 vehicles.

Based on the review of the crash data for Ridge Road & Heyburn Road none of the reported accidents are correctable through modification of existing traffic control, including a traffic signal. The reported crashes at this intersection involve careless driving by the motorist traveling too fast and either hitting a fixed object or sideswiping a car traveling in the same direction.
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Data Collection Effort

Data collection was preformed at strategic sites within the Township to gain a better understanding of the circulation of vehicles throughout the Townships roadway network. This data collection effort was used to supplement the existing data available, details of the analysis can be found in the Roadway Performance section. The following sites were collected:

Turning Movement Counts
Intersection turning movement counts were performed from 7AM-9AM and 4PM-6PM on February 25, 2009. This data is used to generate intersection performance figures and can be used for signal warrant analysis. All intersection movements were captured at the following intersections.

- US 202 (Wilmington/West Chester Pike) & Marshall Road
- US 1 (Baltimore Pike) & Heyburn Road
- Ridge Road & Heyburn Road

Automatic Tube Recorders
An Automatic Tube Recorder (ATR) was installed on Heyburn Road between US 1 (Baltimore Pike) and Ridge Road to gather roadway classification data. These ATRs gather both weekday and weekend data as well as vehicle classification providing insight into the type of vehicles using the Township roadways.

Roadway Performance

Using both data available from PennDOT iTMS and data collected as part of this effort the following roadway performance figures were developed. Analysis was performed using Highway Capacity Manual (2000) standards and HCS 2000 software. Levels of Service (LOS) presented in the following table, Table C-3, are a quality measure describing operational conditions within the traffic stream. These measures relate to speed, travel time, freedom to maneuver, traffic interruptions and comfort and convenience. Letters designate each level, from A to F, with LOS A representing the best operating conditions and LOS F the worst. The LOS values in Table C-3 are capacity driven based on vehicle volumes and geometric parameters of the roadways.

Table C-3: Roadway Segment LOS

Road Name	LOS
Other Principal Arterial Highways	
US-1; Baltimore Pike	
At Village of Chadds Ford	NB: C
	SB: C
Near US-202	NB: E
	SB: C
US-202; Wilmington / West Chester Pike	
North of US-1	NB: C
	SB: C
South of US-1	NB: D
	SB: D
Urban Collector	
Brinton's Bridge Road	A
Creek Road	
North of US-1	A
South of US-1	A
Marshall Road	A
Oakland Road	A
Smith Bridge Road	A
Local Road	
Beaver Valley Road	A
Harvey Road	A
Heyburn Road	A
Ridge Road	A
Ring Road	A
Webb Road	A

Intersection turning movement counts also provide Level of Service indictors similar to roadway segments. Intersection levels of service are primarily driven by the type of traffic control present and the demand for the potential allowable movements. Table C-4: Intersection LOS details the LOS by approach for the intersections where turning movement counts were performed.

Table C-4: Intersection LOS

Road Name		LOS
US-1; Baltimore Pike & Heyburn Road		
AM	Westbound Lefts	C
	Northbound Lefts	E
	Northbound Rights	D
	Northbound Approach	*D*
PM	Westbound Lefts	B
	Northbound Lefts	D
	Northbound Rights	B
	Northbound Approach	*C*
US 202; Wilmington/West Chester Pike & Marshall Road		
AM	Southbound Lefts	C
	Westbound Lefts	F
	Westbound Rights	C
	Westbound Approach	*F*
PM	Southbound Lefts	C
	Westbound Lefts	F
	Westbound Rights	C
	Westbound Approach	*F*
Heyburn Road & Ridge Road		
AM	Eastbound	A
	Westbound	A
	Northbound	A
	Southbound	A
	Intersection LOS	*A*
PM	Eastbound	A
	Westbound	A
	Northbound	A
	Southbound	A
	Intersection LOS	*A*

Circulation Analysis

Understanding the circulation on the Townships Road Network can provide essential guidance to future planning decision. Using the data collected from the 5 ATR sites, some conclusions can be drawn about how vehicles are using the Townships roadways.

Oakland Road
During the AM peak travel time Oakland Road recorded 337 southbound vehicles, which are appear to be headed to US 202 (Wilmington/West Chester Pike). The evening peak travel time only recorded 241 of those vehicles returning, on the northbound direction. This gives the appearance that morning commuters are using Oakland Road as a through route to US 202 (Wilmington/West Chester Pike), bypassing the intersection of PA 926 & US 202 (Wilmington/West Chester Pike).

Ridge Road to Ring Road
During the AM peak travel time both Ring and Ridge Roads see modest volumes of 75 southbound and 171 eastbound vehicles, respectively. Comparing this to the PM peak travel time there is an increase to 248 westbound vehicles on Ridge Road and 153 northbound vehicles on Ring Road. It appears that this increase is caused by through vehicles wishing to avoid the signal at US 202 (Wilmington/West Chester Pike) & US 1 (Baltimore Pike). These vehicles are cutting through the township roads to access the less congested signal at US 1 (Baltimore Pike) & Ring Road to continue southbound on Baltimore Pike.

5. BIKE ROUTES AND TRAILS

As noted in the Chadds Ford Township Open Space Plan there is a high demand for improving the hiking / biking trail system in the Township. Currently the only designated trail in the Township is the Brandywine River Trail, which connects the Chadds Ford Historical Society building and the Brandywine Conservancy. These trails are valuable as a recreational resource for pedestrians, equestrians, bicyclists, cross-country skiers, etc., and they can be used as an alternative means of transportation in the Township.

The Open Space Plan recommends the connection of the Brandywine River Trail with a new trail that connects to the Chadds Ford Township building, and the potential for connecting this network of trails with existing / planned trails in Birmingham Township, Chester County. Other potential connections for the trail – as provided by the Open Space Plan – include: the Estates at Chadds Ford, Brandywine Battlefield Park, Brandywine Creek Park, Dilworthtown, and Painters Crossing. Additionally, the plan recommends working with the committees responsible for planning the Brandywine Valley Scenic Byway and the Brandywine Greenways to promote to preservation of open spaces along these routes and the inclusion of trails along these routes. The implementation of trail planning as noted in the Open Space Plan should be encouraged as it outlines a clear path for providing the desired comprehensive trail system in Chadds Ford Township.

Other bicycle trails within the Township include one of BicyclePA's designated bicycle routes, route L. This route follows Creek Road from the township line to township line. In future planning efforts, where feasible, steps should be considered to add bicycle compatibility along Creek Road.

6. SUMMARY AND PLANNING IMPLICATIONS

The purpose of the following observations and implications are to ensure that the Townships goals are both achieved and preserved in future planning efforts. the following observations were drawn from a combination of field views, traffic data collections and meetings with the Comprehensive Plan Task Force.

	Observation	Implication
Public Transportation	Public Transportation is limited to 2 stops at the eastern edge of the Township	Based on Township needs, expansion of service to Chadds Ford Village mat be appropriate. This will provide workers at Village businesses an alternative means of travel to work
Roadway Conditions	Degrading Levels of Service on US 202 & US 1	As Levels of Service along and at the intersection of US 202 & US 1 continue to degrade, traffic will continue to seek alternate paths through township roadways. The Township should coordinate with PennDOT and Concord Township to identify safety and capacity improvements along these roadways.
	The Township's existing circulation system functions and serves the township quite well	Adherence to context sensitive planning principles in accordance with Township goals and the requirement of traffic impact studies for future developments will preserve these levels of service
Bike Routes and Trails	The Chadds Ford Open Space Plan calls for a bicycle and trail system; BicyclePA designates Creek Road as a cross state bicycle trail	Future planning efforts should consider the creation of dedicated facilities for both hikers and bikers. This will also provide alternative modes for residents commuting to work

Appendix D

The Census data from 2010 included in this Appendix is intended to amplify and update information in Chapter 3 and Appendix C.

DP-1

Profile of General Population and Housing Characteristics: 2010

2010 Demographic Profile Data

NOTE: For more information on confidentiality protection, nonsampling error, and definitions, see http://www.census.gov/prod/cen2010/doc/dpsf.pdf.

Geography: Chadds Ford township, Delaware County, Pennsylvania

Subject	Number	Percent
SEX AND AGE		
Total population	3,640	100.0
Under 5 years	173	4.8
5 to 9 years	246	6.8
10 to 14 years	290	8.0
15 to 19 years	215	5.9
20 to 24 years	129	3.5
25 to 29 years	162	4.5
30 to 34 years	175	4.8
35 to 39 years	185	5.1
40 to 44 years	275	7.6
45 to 49 years	321	8.8
50 to 54 years	344	9.5
55 to 59 years	322	8.8
60 to 64 years	248	6.8
65 to 69 years	221	6.1
70 to 74 years	122	3.4
75 to 79 years	94	2.6
80 to 84 years	75	2.1
85 years and over	43	1.2
Median age (years)	44.5	(X)
16 years and over	2,876	79.0
18 years and over	2,779	76.3
21 years and over	2,696	74.1
62 years and over	705	19.4
65 years and over	555	15.2
Male population	1,759	48.3
Under 5 years	102	2.8
5 to 9 years	135	3.7
10 to 14 years	145	4.0
15 to 19 years	114	3.1
20 to 24 years	53	1.5
25 to 29 years	76	2.1
30 to 34 years	88	2.4
35 to 39 years	72	2.0
40 to 44 years	136	3.7
45 to 49 years	153	4.2
50 to 54 years	158	4.3
55 to 59 years	158	4.3
60 to 64 years	108	3.0

Subject	Number	Percent
65 to 69 years	109	3.0
70 to 74 years	66	1.8
75 to 79 years	39	1.1
80 to 84 years	33	0.9
85 years and over	14	0.4
Median age (years)	43.5	(X)
16 years and over	1,356	37.3
18 years and over	1,302	35.8
21 years and over	1,257	34.5
62 years and over	326	9.0
65 years and over	261	7.2
Female population	1,881	51.7
Under 5 years	71	2.0
5 to 9 years	111	3.0
10 to 14 years	145	4.0
15 to 19 years	101	2.8
20 to 24 years	76	2.1
25 to 29 years	86	2.4
30 to 34 years	87	2.4
35 to 39 years	113	3.1
40 to 44 years	139	3.8
45 to 49 years	168	4.6
50 to 54 years	186	5.1
55 to 59 years	164	4.5
60 to 64 years	140	3.8
65 to 69 years	112	3.1
70 to 74 years	56	1.5
75 to 79 years	55	1.5
80 to 84 years	42	1.2
85 years and over	29	0.8
Median age (years)	45.3	(X)
16 years and over	1,520	41.8
18 years and over	1,477	40.6
21 years and over	1,439	39.5
62 years and over	379	10.4
65 years and over	294	8.1
RACE		
Total population	3,640	100.0
One Race	3,599	98.9
White	3,253	89.4
Black or African American	50	1.4
American Indian and Alaska Native	1	0.0
Asian	276	7.6
Asian Indian	113	3.1
Chinese	106	2.9
Filipino	12	0.3
Japanese	4	0.1
Korean	11	0.3
Vietnamese	17	0.5
Other Asian [1]	13	0.4
Native Hawaiian and Other Pacific Islander	0	0.0
Native Hawaiian	0	0.0
Guamanian or Chamorro	0	0.0
Samoan	0	0.0

Subject	Number	Percent
Other Pacific Islander [2]	0	0.0
Some Other Race	19	0.5
Two or More Races	41	1.1
White; American Indian and Alaska Native [3]	5	0.1
White; Asian [3]	21	0.6
White; Black or African American [3]	9	0.2
White; Some Other Race [3]	3	0.1
Race alone or in combination with one or more other races: [4]		
White	3,293	90.5
Black or African American	62	1.7
American Indian and Alaska Native	9	0.2
Asian	297	8.2
Native Hawaiian and Other Pacific Islander	0	0.0
Some Other Race	22	0.6
HISPANIC OR LATINO		
Total population	3,640	100.0
Hispanic or Latino (of any race)	106	2.9
Mexican	25	0.7
Puerto Rican	24	0.7
Cuban	15	0.4
Other Hispanic or Latino [5]	42	1.2
Not Hispanic or Latino	3,534	97.1
HISPANIC OR LATINO AND RACE		
Total population	3,640	100.0
Hispanic or Latino	106	2.9
White alone	83	2.3
Black or African American alone	2	0.1
American Indian and Alaska Native alone	0	0.0
Asian alone	1	0.0
Native Hawaiian and Other Pacific Islander alone	0	0.0
Some Other Race alone	13	0.4
Two or More Races	7	0.2
Not Hispanic or Latino	3,534	97.1
White alone	3,170	87.1
Black or African American alone	48	1.3
American Indian and Alaska Native alone	1	0.0
Asian alone	275	7.6
Native Hawaiian and Other Pacific Islander alone	0	0.0
Some Other Race alone	6	0.2
Two or More Races	34	0.9
RELATIONSHIP		
Total population	3,640	100.0
In households	3,636	99.9
Householder	1,436	39.5
Spouse [6]	859	23.6
Child	1,084	29.8
Own child under 18 years	825	22.7
Other relatives	128	3.5
Under 18 years	29	0.8
65 years and over	45	1.2
Nonrelatives	129	3.5
Under 18 years	6	0.2
65 years and over	5	0.1
Unmarried partner	68	1.9
In group quarters	4	0.1

Subject	Number	Percent
Institutionalized population	0	0.0
Male	0	0.0
Female	0	0.0
Noninstitutionalized population	4	0.1
Male	4	0.1
Female	0	0.0
HOUSEHOLDS BY TYPE		
Total households	1,436	100.0
Family households (families) [7]	1,022	71.2
With own children under 18 years	432	30.1
Husband-wife family	859	59.8
With own children under 18 years	359	25.0
Male householder, no wife present	51	3.6
With own children under 18 years	21	1.5
Female householder, no husband present	112	7.8
With own children under 18 years	52	3.6
Nonfamily households [7]	414	28.8
Householder living alone	338	23.5
Male	111	7.7
65 years and over	33	2.3
Female	227	15.8
65 years and over	92	6.4
Households with individuals under 18 years	455	31.7
Households with individuals 65 years and over	401	27.9
Average household size	2.53	(X)
Average family size [7]	3.03	(X)
HOUSING OCCUPANCY		
Total housing units	1,513	100.0
Occupied housing units	1,436	94.9
Vacant housing units	77	5.1
For rent	11	0.7
Rented, not occupied	6	0.4
For sale only	24	1.6
Sold, not occupied	17	1.1
For seasonal, recreational, or occasional use	12	0.8
All other vacants	7	0.5
Homeowner vacancy rate (percent) [8]	1.8	(X)
Rental vacancy rate (percent) [9]	5.9	(X)
HOUSING TENURE		
Occupied housing units	1,436	100.0
Owner-occupied housing units	1,268	88.3
Population in owner-occupied housing units	3,265	(X)
Average household size of owner-occupied units	2.57	(X)
Renter-occupied housing units	168	11.7
Population in renter-occupied housing units	371	(X)
Average household size of renter-occupied units	2.21	(X)

X Not applicable.

[1] Other Asian alone, or two or more Asian categories.

[2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

[3] One of the four most commonly reported multiple-race combinations nationwide in Census 2000.

[4] In combination with one or more of the other races listed. The six numbers may add to more than the total population, and the six

percentages may add to more than 100 percent because individuals may report more than one race.

[5] This category is composed of people whose origins are from the Dominican Republic, Spain, and Spanish-speaking Central or South American countries. It also includes general origin responses such as "Latino" or "Hispanic."
[6] "Spouse" represents spouse of the householder. It does not reflect all spouses in a household. Responses of "same-sex spouse" were edited during processing to "unmarried partner."
[7] "Family households" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.

[8] The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant "for sale." It is computed by dividing the total number of vacant units "for sale only" by the sum of owner-occupied units, vacant units that are "for sale only," and vacant units that have been sold but not yet occupied; and then multiplying by 100.
[9] The rental vacancy rate is the proportion of the rental inventory that is vacant "for rent." It is computed by dividing the total number of vacant units "for rent" by the sum of the renter-occupied units, vacant units that are "for rent," and vacant units that have been rented but not yet occupied; and then multiplying by 100.
Source: U.S. Census Bureau, 2010 Census.

S0801

COMMUTING CHARACTERISTICS BY SEX

2010-2014 American Community Survey 5-Year Estimates

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Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

Subject	Chadds Ford township, Delaware County, Pennsylvania				
	Total		Male		Female
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
Workers 16 years and over	2,059	+/-179	1,078	+/-124	981
MEANS OF TRANSPORTATION TO WORK					
Car, truck, or van	88.9%	+/-4.0	90.8%	+/-5.0	86.7%
Drove alone	85.2%	+/-4.6	85.3%	+/-5.9	85.1%
Carpooled	3.6%	+/-2.7	5.5%	+/-4.3	1.6%
In 2-person carpool	3.6%	+/-2.7	5.5%	+/-4.3	1.6%
In 3-person carpool	0.0%	+/-1.2	0.0%	+/-2.3	0.0%
In 4-or-more person carpool	0.0%	+/-1.2	0.0%	+/-2.3	0.0%
Workers per car, truck, or van	1.02	+/-0.02	1.03	+/-0.03	1.01
Public transportation (excluding taxicab)	2.2%	+/-1.6	2.5%	+/-2.7	1.9%
Walked	1.9%	+/-2.0	2.1%	+/-3.2	1.7%
Bicycle	0.0%	+/-1.2	0.0%	+/-2.3	0.0%
Taxicab, motorcycle, or other means	0.5%	+/-0.8	0.0%	+/-2.3	1.1%
Worked at home	6.4%	+/-3.3	4.5%	+/-3.4	8.5%
PLACE OF WORK					
Worked in state of residence	66.9%	+/-6.0	64.1%	+/-8.3	70.0%
Worked in county of residence	39.0%	+/-5.7	35.9%	+/-7.8	42.4%
Worked outside county of residence	27.9%	+/-5.2	28.2%	+/-6.4	27.6%
Worked outside state of residence	33.1%	+/-6.0	35.9%	+/-8.3	30.0%
Living in a place	0.0%	+/-1.2	0.0%	+/-2.3	0.0%
Worked in place of residence	0.0%	+/-1.2	0.0%	+/-2.3	0.0%
Worked outside place of residence	0.0%	+/-1.2	0.0%	+/-2.3	0.0%
Not living in a place	100.0%	+/-1.2	100.0%	+/-2.3	100.0%
Living in 12 selected states	100.0%	+/-1.2	100.0%	+/-2.3	100.0%
Worked in minor civil division of residence	13.7%	+/-4.3	9.7%	+/-4.3	18.0%
Worked outside minor civil division of residence	86.3%	+/-4.3	90.3%	+/-4.3	82.0%
Not living in 12 selected states	0.0%	+/-1.2	0.0%	+/-2.3	0.0%
Workers 16 years and over who did not work at home	1,927	+/-168	1,029	+/-123	898
TIME LEAVING HOME TO GO TO WORK					

Subject	Chadds Ford township, Delaware County, Pennsylvania				
	Total		Male		Female
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate
12:00 a.m. to 4:59 a.m.	0.0%	+/-1.3	0.0%	+/-2.4	0.0%
5:00 a.m. to 5:29 a.m.	1.1%	+/-1.3	0.7%	+/-1.2	1.6%
5:30 a.m. to 5:59 a.m.	3.7%	+/-2.3	5.8%	+/-3.9	1.2%
6:00 a.m. to 6:29 a.m.	4.9%	+/-2.7	7.5%	+/-4.3	2.0%
6:30 a.m. to 6:59 a.m.	13.1%	+/-4.8	13.0%	+/-6.0	13.1%
7:00 a.m. to 7:29 a.m.	19.8%	+/-5.4	16.1%	+/-6.0	24.1%
7:30 a.m. to 7:59 a.m.	15.5%	+/-4.2	17.2%	+/-4.9	13.6%
8:00 a.m. to 8:29 a.m.	14.8%	+/-4.9	13.5%	+/-5.7	16.4%
8:30 a.m. to 8:59 a.m.	10.3%	+/-4.2	11.0%	+/-5.2	9.6%
9:00 a.m. to 11:59 p.m.	16.7%	+/-4.4	15.2%	+/-6.4	18.5%
TRAVEL TIME TO WORK					
Less than 10 minutes	7.2%	+/-2.9	7.0%	+/-4.5	7.3%
10 to 14 minutes	8.5%	+/-3.4	9.6%	+/-4.7	7.1%
15 to 19 minutes	11.9%	+/-4.3	9.9%	+/-4.6	14.1%
20 to 24 minutes	20.1%	+/-4.5	22.4%	+/-6.9	17.5%
25 to 29 minutes	10.4%	+/-4.0	9.3%	+/-4.2	11.7%
30 to 34 minutes	16.3%	+/-4.4	19.3%	+/-6.3	12.8%
35 to 44 minutes	9.0%	+/-4.4	7.2%	+/-4.3	11.1%
45 to 59 minutes	7.2%	+/-3.1	5.9%	+/-3.5	8.7%
60 or more minutes	9.4%	+/-3.3	9.3%	+/-5.0	9.6%
Mean travel time to work (minutes)	27.9	+/-2.3	27.1	+/-2.5	28.9
VEHICLES AVAILABLE					
Workers 16 years and over in households	2,059	+/-179	1,078	+/-124	981
No vehicle available	0.0%	+/-1.2	0.0%	+/-2.3	0.0%
1 vehicle available	16.1%	+/-5.2	6.3%	+/-4.1	26.8%
2 vehicles available	42.5%	+/-7.1	45.0%	+/-8.1	39.9%
3 or more vehicles available	41.4%	+/-7.3	48.7%	+/-7.9	33.3%
PERCENT IMPUTED					
Means of transportation to work	7.9%	(X)	(X)	(X)	(X)
Private vehicle occupancy	8.1%	(X)	(X)	(X)	(X)
Place of work	8.8%	(X)	(X)	(X)	(X)
Time leaving home to go to work	20.0%	(X)	(X)	(X)	(X)
Travel time to work	9.7%	(X)	(X)	(X)	(X)
Vehicles available	1.1%	(X)	(X)	(X)	(X)

Subject	Chadds Ford township, Delaware County, Pennsylvania
	Female
	Margin of Error
Workers 16 years and over	+/-120
MEANS OF TRANSPORTATION TO WORK	
Car, truck, or van	+/-5.4
Drove alone	+/-5.8
Carpooled	+/-2.0
In 2-person carpool	+/-2.0
In 3-person carpool	+/-2.5
In 4-or-more person carpool	+/-2.5
Workers per car, truck, or van	+/-0.02
Public transportation (excluding taxicab)	+/-2.1
Walked	+/-2.3
Bicycle	+/-2.5
Taxicab, motorcycle, or other means	+/-1.7
Worked at home	+/-4.8
PLACE OF WORK	
Worked in state of residence	+/-8.1
Worked in county of residence	+/-9.6
Worked outside county of residence	+/-7.5
Worked outside state of residence	+/-8.1
Living in a place	+/-2.5
Worked in place of residence	+/-2.5
Worked outside place of residence	+/-2.5
Not living in a place	+/-2.5
Living in 12 selected states	+/-2.5
Worked in minor civil division of residence	+/-6.6
Worked outside minor civil division of residence	+/-6.6
Not living in 12 selected states	+/-2.5
Workers 16 years and over who did not work at home	+/-113
TIME LEAVING HOME TO GO TO WORK	
12:00 a.m. to 4:59 a.m.	+/-2.7
5:00 a.m. to 5:29 a.m.	+/-2.4
5:30 a.m. to 5:59 a.m.	+/-2.0
6:00 a.m. to 6:29 a.m.	+/-2.3
6:30 a.m. to 6:59 a.m.	+/-5.5
7:00 a.m. to 7:29 a.m.	+/-8.9
7:30 a.m. to 7:59 a.m.	+/-5.8
8:00 a.m. to 8:29 a.m.	+/-6.6
8:30 a.m. to 8:59 a.m.	+/-5.4
9:00 a.m. to 11:59 p.m.	+/-6.9
TRAVEL TIME TO WORK	
Less than 10 minutes	+/-4.4
10 to 14 minutes	+/-4.2
15 to 19 minutes	+/-6.1
20 to 24 minutes	+/-6.1
25 to 29 minutes	+/-6.8
30 to 34 minutes	+/-6.1
35 to 44 minutes	+/-7.2
45 to 59 minutes	+/-4.5
60 or more minutes	+/-4.8
Mean travel time to work (minutes)	+/-3.7

Subject	Chadds Ford township, Delaware County, Pennsylvania
	Female
	Margin of Error
VEHICLES AVAILABLE	
Workers 16 years and over in households	+/-120
No vehicle available	+/-2.5
1 vehicle available	+/-8.7
2 vehicles available	+/-9.2
3 or more vehicles available	+/-8.4
PERCENT IMPUTED	
Means of transportation to work	(X)
Private vehicle occupancy	(X)
Place of work	(X)
Time leaving home to go to work	(X)
Travel time to work	(X)
Vehicles available	(X)

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

The 12 selected states are Connecticut, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Wisconsin.

Workers include members of the Armed Forces and civilians who were at work last week.

While the 2010-2014 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates

Explanation of Symbols:

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7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.

U.S. Census Bureau

AMERICAN FactFinder

S2403

INDUSTRY BY SEX AND MEDIAN EARNINGS IN THE PAST 12 MONTHS (IN 2014 INFLATION-ADJUSTED DOLLARS) FOR THE CIVILIAN EMPLOYED POPULATION 16 YEARS AND OVER

2010-2014 American Community Survey 5-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Data and Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

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D-11

Subject	Chadds Ford township, Delaware County, Pennsylvania					
	Total		Male		Female	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Civilian employed population 16 years and over	2,068	+/-178	51.8%	+/-3.9	48.2%	+/-3.9
Agriculture, forestry, fishing and hunting, and mining:	0	+/-10	-	**	-	**
Agriculture, forestry, fishing and hunting	0	+/-10	-	**	-	**
Mining, quarrying, and oil and gas extraction	0	+/-10	-	**	-	**
Construction	143	+/-88	67.1%	+/-31.3	32.9%	+/-31.3
Manufacturing	300	+/-93	55.0%	+/-13.6	45.0%	+/-13.6
Wholesale trade	58	+/-39	36.2%	+/-31.2	63.8%	+/-31.2
Retail trade	142	+/-63	62.0%	+/-23.0	38.0%	+/-23.0
Transportation and warehousing, and utilities:	114	+/-64	78.9%	+/-19.2	21.1%	+/-19.2
Transportation and warehousing	101	+/-62	89.1%	+/-16.5	10.9%	+/-16.5
Utilities	13	+/-15	0.0%	+/-72.1	100.0%	+/-72.1
Information	40	+/-31	20.0%	+/-30.1	80.0%	+/-30.1
Finance and insurance, and real estate and rental and leasing:	243	+/-69	58.8%	+/-15.1	41.2%	+/-15.1
Finance and insurance	224	+/-64	63.8%	+/-15.2	36.2%	+/-15.2
Real estate and rental and leasing	19	+/-22	0.0%	+/-59.7	100.0%	+/-59.7
Professional, scientific, and management, and administrative and waste management services:	285	+/-79	68.8%	+/-13.4	31.2%	+/-13.4
Professional, scientific, and technical services	233	+/-74	66.1%	+/-15.6	33.9%	+/-15.6
Management of companies and enterprises	9	+/-14	100.0%	+/-86.7	0.0%	+/-86.7

Subject	Chadds Ford township, Delaware County, Pennsylvania					
	Total		Male		Female	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Administrative and support and waste management services	43	+/-31	76.7%	+/-32.4	23.3%	+/-32.4
Educational services, and health care and social assistance:	533	+/-116	31.0%	+/-9.1	69.0%	+/-9.1
Educational services	201	+/-72	34.8%	+/-13.5	65.2%	+/-13.5
Health care and social assistance	332	+/-94	28.6%	+/-12.9	71.4%	+/-12.9
Arts, entertainment, and recreation, and accommodation and food services:	106	+/-52	45.3%	+/-25.9	54.7%	+/-25.9
Arts, entertainment, and recreation	17	+/-20	0.0%	+/-63.1	100.0%	+/-63.1
Accommodation and food services	89	+/-48	53.9%	+/-26.9	46.1%	+/-26.9
Other services, except public administration	44	+/-48	43.2%	+/-24.2	56.8%	+/-24.2
Public administration	60	+/-50	55.0%	+/-29.1	45.0%	+/-29.1
PERCENT IMPUTED						
Industry	9.6%	(X)	(X)	(X)	(X)	(X)

Subject	Chadds Ford township, Delaware County, Pennsylvania					
	Median earnings (dollars)		Median earnings (dollars) for male		Median earnings (dollars) for female	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Civilian employed population 16 years and over	58,571	+/-9,005	80,250	+/-25,418	46,023	+/-13,861
Agriculture, forestry, fishing and hunting, and mining:	-	**	-	**	-	**
Agriculture, forestry, fishing and hunting	-	**	-	**	-	**
Mining, quarrying, and oil and gas extraction	-	**	-	**	-	**
Construction	54,427	+/-44,046	53,333	+/-29,978	-	**
Manufacturing	105,714	+/-29,411	151,016	+/-88,663	78,021	+/-39,296
Wholesale trade	83,750	+/-78,380	-	**	60,481	+/-36,852
Retail trade	33,205	+/-14,605	34,500	+/-24,164	12,750	+/-15,750
Transportation and warehousing, and utilities:	54,118	+/-4,140	52,361	+/-8,093	73,333	+/-18,212
Transportation and warehousing	53,523	+/-5,149	52,361	+/-8,093	-	**
Utilities	-	**	-	**	-	**
Information	41,875	+/-38,446	-	**	41,042	+/-29,832
Finance and insurance, and real estate and rental and leasing:	81,406	+/-59,724	123,792	+/-49,363	38,167	+/-43,831
Finance and insurance	101,500	+/-61,838	123,792	+/-49,363	38,583	+/-43,291
Real estate and rental and leasing	-	**	-	**	-	**
Professional, scientific, and management, and administrative and waste management services:	74,926	+/-62,055	93,214	+/-127,289	44,813	+/-97,803
Professional, scientific, and technical services	91,607	+/-131,644	171,458	+/-159,971	71,458	+/-91,078
Management of companies and enterprises	-	**	-	**	-	**
Administrative and support and waste management services	32,625	+/-60,387	33,875	+/-59,385	-	**
Educational services, and health care and social assistance:	63,603	+/-10,667	164,063	+/-59,262	60,484	+/-22,456
Educational services	50,536	+/-17,303	83,750	+/-88,939	45,139	+/-18,501
Health care and social assistance	80,250	+/-14,146	242,639	+/-74,810	64,821	+/-24,612
Arts, entertainment, and recreation, and accommodation and food services:	12,308	+/-9,860	32,727	+/-41,624	4,808	+/-18,908
Arts, entertainment, and recreation	-	**	-	**	-	**
Accommodation and food services	15,852	+/-5,729	32,727	+/-41,624	15,739	+/-9,534
Other services, except public administration	14,464	+/-10,213	-	**	-	**
Public administration	45,288	+/-43,943	45,673	+/-63,086	31,875	+/-36,427
PERCENT IMPUTED						
Industry	(X)	(X)	(X)	(X)	(X)	(X)

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Industry codes are 4-digit codes and are based on the North American Industry Classification System (NAICS). The Census industry codes for 2013 and later years are based on the 2012 revision of the NAICS. To allow for the creation of 2010-2014 tables, industry data in the multiyear files (2010-2014) were recoded to 2013 Census industry codes. We recommend using caution when comparing data coded using 2013 Census industry codes with data coded using Census industry codes prior to 2013. For more information on the Census industry code changes, please visit our website at http://www.census.gov/people/io/methodology/.

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Appendix E

Placemaking

“Promote Placemaking” is one of the Guiding Principles on page 4-2.

Placemaking is intended to convey the desired outcome for the physical form of a development to address such items as:

+ compact development patters (as a form of clustering), frequently intended to be designed with a central green;
+ environmental resources protection (including the protection of steep slopes, wetlands, and woodlands); and
+ walkability (as a goal related to trails, pathways, sidewalks, and crosswalks).

On pages E-2 and E-3, several “Best Practices” examples of Placemaking are included. The images on pages E-2 and E-3 should be utilized to inspire the layout of developments in the future in Chadds Ford Township.

In addition, Chapter 5 should be utilized to draft Ordinances pertaining to Placemaking.

Relative to Ordinance Amendments to promote Placemaking, several options should be considered after the Comprehensive Plan is adopted such as:

- Amendments to the PRD Provisions;
- a possible TND-1 Overlay District along the Route 202 corridor; and
- a new cluster development ordinance that includes the images in Chapter 5 and Appendix E.

Please refer to Chapter 6, Implementation Strategies, for additional information.

Placemaking Principles
Examples of Residential Placemaking

Ship Carpenter Square
Lewes, DE

Ship Carpenter Square, in Lewes, DE, is a good example of a neighborhood of single-family detached homes, with common open space in the form of a central green.

The central green serves as a Green Court upon which the homes have frontage. The "loop road" for vehicular access provides rear access to garages.

Brick House Farm

Brick House Farm, in Newtown Square, PA, is another good example of a neighborhood of single-family detached homes, and a central green.

The central green contains a perimeter walkway, and includes a Gazebo, Shade Trees, and Benches.

Glen Miills School
Faculty Housing

The Glen Mills School Faculty Housing, in Glen Mills, PA, is noted for a series of central greens, around which single-family homes on small lots are grouped.

Great "curb" appeal is achieved with front porches, and rear access to garages.

Ponds of Woodward

The Ponds of Woodward, in Mendenhall, PA, has a compact arrangement of housing with triplex clusters, and smaller lots for detached single-family dwellings, along with open space.

The open space includes both an active apple orchard, passive recreation, and the adaptive reuse of the barn as a Day Care facility.

Placemaking Principles
Examples of Mixed-Use Development Placemaking

Willowdale Town Center
Unionville, PA

Willowdale Town Center, in Unionville, PA, is a good example of commercial buildings located around the perimeter of the site, and centrally located green space.

Smaller scale commercial buildings are emblematic of a Chester County Village.

Eagleview Town Center
Exton, PA

Eagleview Town Center, in Exton, PA, has a large common open space area surrounded by restaurants, shops, condominiums, apartments, and live-work units.

The central green space provides opportunities for a Farmers Market and other special community events.

Concordville Town Center
Concordville, PA

Concordville Town Center, in Concordville, PA, has a central public open space that includes a Pergola, Fountain, small Amphitheater, and a small Green.

The central public open space connects to stores and shops via unit paver plazas.

Legacy Village
Cleveland, Ohio

Legacy Village, in Cleveland, OH, has a central green “wrapped” by commercial buildings.

The central green provides opportunities for pedestrian gathering and for special events.

Appendix F

Zoning District Calculations & Fair Share Analysis

During the preparation of this Comprehensive Plan Update 2017, questions were raised regarding a Fair Share Analysis.

Zoning District Calculations are listed on page F-2 to identify the acreages for each zoning district. The total land area zoned to permit multi-family dwellings in the R-A, R-M, and PRD Districts totals 9.61% of the total land area of Chadds Ford Township.

On page F-3, the 9.61% of total land area zoned for multi-family dwellings is compared to lower amounts from several relevant court cases. As a result, a conclusion was reach that Chadds Ford Township, based on the amount of land zoned for multi-family dwellings, has met its Fair Share.

THOMAS COMITTA ASSOCIATES, INC.
Town Planners & Landscape Architects

Zoning District Calculations
Chadds Ford Township - Delaware County, Pennsylvania

December 8, 2016

Zoning District	Acreage	Percentage
B – Business	72.03	1.29%
B-1 – Business	28.53	0.51%
LI – Light Industrial	78.73	1.41%
PBC – Planned Business Center	122.59	2.20%
PBC-1 – Planned Business Center	32.04	0.58%
POC – Planned Office Center	82.79	1.49%
R-1 – Residence	4,242.28	76.19%
R-2 – Residence	307.09	5.52%
R-A – Residence/Apartment	26.12	0.47%
R-M – Residence/Multi-Family	53.13	0.95%
PRD – Planned Residential	456.08	8.19%
Route 1 and Route 202 Rights-of-Way	66.59	1.20%

Total Acreage = 5,568 acres

Notes:

1. The area of the Rights-of-Way of Route 1 and Rote 202, as shown on the Chadds Ford Township Map have been excluded from the acreages of the Zoning Districts.

2. The pending 92.84 acre PRD known as W onderland Farms is not reflected in the PRD category. It is included in the R-1 District.

3. The Estates at Chadds Ford is included as part of the PRD District.

THOMAS COMITTA ASSOCIATES, INC.
Town Planners & Landscape Architects

Fair Share Analysis
Chadds Ford Township – Delaware County, PA

December 8, 2016**; Updated: January 17, 2017**

Summary of Relevant Cases

Case	% of land zoned for multifamily dwellings	Notes
1. Cambridge Land Co. v Marshall Twp (Allegheny County) (1989)[1]	**2.75%** of land area; (7.6% of total units)	Township has provided for multi-family dwellings in proportion to the needs of the community.
2. Appeal of Herman Silver v. Upper Southampton Twp (1978)[2]	**3.5%** of land area (11 to 15% of total units)	Township 75% developed
3. Dolington Group & Toll Bros. v. Upper Makefield Twp (2003)[3]	**3.58%** of total land area	Applied to a joint zoning Ordinance

Notes:

A. Chadds Ford Township has **9.61**% of the total land area zoned R-A, R-M, and PRD. Each of these 3 Zoning Districts permit multi-family dwellings.

B. According to Glen Loch – West Whiteland Case, CFT could get credit for the PRD Districts, even though some (not all) housing units that have been built are multi-family.

[1] Cambridge Land Co. v. MARSHALL TP., 560 A.2d 253 (Pa. Commw. Ct. 1989)

[2] Silver Appeal, 35 Pa. Commw. 569 (Pa. Commw. Ct. 1978)

[3] Dolington Group & Toll Bros. v. Upper Makefield Twp., 839 A.2d 1021 (Pa. Supreme Ct. 2003)

CHADDS FORD TOWNSHIP
Delaware County, PA

RESOLUTION 2017-17

ADOPTION OF 2017 COMPREHENSIVE PLAN UPDATE

WHEREAS, the Chadds Ford Township Board of Supervisors desires to update the Chadds Ford Township Comprehensive Plan and has engaged in a review and update of its Comprehensive Plan pursuant to Article III of Pennsylvania Municipalities Planning Code (the "MPC")

WHEREAS, Chadds Ford Township has provided the attached Chadds Ford Township Comprehensive Plan Update 2017 to the Delaware County Planning Department, the Unionville Chadds Ford School District, and all contiguous municipalities for their review and comment in compliance with the MPC;

WHEREAS, in accordance with the MPC, the Planning Commission held a Public Meeting on November 9, 2016, at which it recommended that the Board of Supervisors adopt the revised Comprehensive Plan;

WHEREAS, the Board of Supervisors has met the procedural requirements of the MPC for the amendments to a municipality's comprehensive plan, including holding a Public Hearing;

WHEREAS, the Board of Supervisors respects the rights of all property owners in the Township and recognizes the importance of all land owners efforts for land preservation to protect the natural, historical, scenic and open space resources in the Township;

WHEREAS, the Comprehensive Plan Update 2017 is attached in its entirety to this Resolution as Exhibit "A" and is made a part hereof.

NOW, THEREFORE, BE IT RESOLVED, by the Chadds Ford Township Board of Supervisors, this 26th day of April 2017 that the Chadds Ford Township Comprehensive Plan 2017, attached hereto as Exhibit "A", is hereby **ADOPTED.**

RESOLVED and **ADOPTED** this 26th day of April, 2017.

CHADDS FORD TOWNSHIP
BOARD OF SUPERVISORS

ATTEST:

Matthew DiFilippo
Township Secretary

Frank G. Murphy, Esq., Chairman

Samantha Reiner, Vice-Chair

Noelle Barbone, Supervisor

Resolution for Plan Adoption

The Chadds Ford Township Board of Supervisors held two (2) Public Hearings on this Comprehensive Plan Update 2017, February 1, 2017 and April 5, 2017.

At the Meeting on 4/26, 2017, Resolution No. 2017-17 was Adopted.