

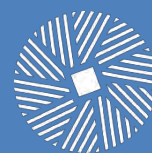


# LAND USE ASSUMPTIONS REPORT

*Upper Uwchlan  
Township,  
Chester County, PA*

In 1999, Upper Uwchlan Township's Board of Supervisors adopted a Transportation Impact Fee Ordinance based in part on a 1998 Land Use Assumptions Report. This is an update of that report and is intended for use in evaluating the current Act 209 program and possible need for changes.

*Prepared by  
the Brandywine Conservancy, Inc.  
August, 2015*





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Pottstown Pike and Park Road Intersection.

## 1. Introduction

In accordance with Act 209 of the Pennsylvania Municipalities Planning Code, Upper Uwchlan Township's Board of Supervisors adopted a Transportation Impact Fee Ordinance in May of 1999. This ordinance can be found in Chapter 79 of the Code of Upper Uwchlan – Article 1. A Land Use Assumptions Report, Roadway Sufficiency Analysis, and Capital Improvements Plan were prepared, and a Transportation Service Area established, in support of this Ordinance. Since 1999, the Board of Supervisors has applied the transportation impact fee to approved subdivisions and land developments involving residential, commercial, and other land uses within the TSA to help obtain needed road improvements.

This is an update of the 1998 Land Use Assumptions Report (LUAR) and is intended for use in evaluating the current Act 209 program and the possible need for changes. This new LUAR proposes an expanded TSA and provides the following:

- A general description of existing roads within an expanded TSA;
- Changes in land use within the Township since 1995;
- A report on population trends that are anticipated to affect township growth; and
- An assessment of the future land development potential within the expanded TSA.

Input of the Township's Planning Commission, a Transportation Impact Fee Advisory Committee (TIFAC), and the Township's transportation consultant, McMahon Associates, Inc., is reflected in this LUAR. The document also relies upon the Upper Uwchlan Township Comprehensive Plan adopted by the Board of Supervisors in April, 2014. As a pre-requisite to formal changes to the existing transportation impact fee, this LUAR has also been transmitted to surrounding municipalities, the Chester County Planning Commission, and the Downingtown Area School District for comment. The Board of Supervisors held a public hearing on this LUAR after allowing the required time for the receipt of comments.

## 2. The Transportation Service Area—Existing Roads

The transportation service area (TSA) established for the township's 1999 transportation impact fee ordinance was 6.46 square miles in area, slightly less than the seven square miles in maximum area permitted by Act 209. Shown as Map 10 following Appendix B of this LUAR, the TSA encompassed most of the land in the township with significant development potential. As part of this update, the existing TSA is being expanded to the full 7.0 square miles and will include vacant or undeveloped land with zoned development potential. Map 1 following Appendix B shows the new (proposed) TSA boundary.

Within the township, there are now 8.28 (linear) miles of roads owned and maintained by the Commonwealth of Pennsylvania, excluding the Pennsylvania Turnpike, and 53.47 miles of roadway that are the responsibility of the Township, according to the Pennsylvania Department of Transportation's (PennDOT) Type 5 Map of July, 2012. Nearly thirty-two miles of Township-maintained roads have been added through growth and development since the previous LUAR was conducted.





*Route 100 (Pottstown Pike).*

The functional classification of all roads and highways in the township is shown on Map 2 following Appendix B. The Pennsylvania Turnpike (I-76) which courses along the TSA's southwestern edge is classified as an expressway. This is a limited access road traveling the length of the State, with the Downingtown Interchange situated along PA Route 100 in neighboring Uwchlan Township, approximately one-half mile from the township's southern line. As a related note, the Pennsylvania Turnpike Commission recently acquired a 56.4 acre property (Shea Farm) in Upper Uwchlan Township, although its plans for use of this property located on the west side of the turnpike are unknown.

PA Route 100, Pottstown Pike, is classified as a principal arterial highway, except for the stretch between the northern and southern intersections with Graphite Mine Road. Pottstown Pike also travels the length of the TSA, and is the most important north-south road in the township and in Chester County, connecting Pottstown in Montgomery County to West Chester Borough.



*Pottstown Pike, Village of Eagle.*

In 2004 the Township obtained dedication of sufficient right-of-way with the Byers Station PRD development for the first of two sections of Graphite Mine Road, an alternative to Pottstown

Pike that skirts the Village of Eagle. This road was constructed with two lanes of an ultimate four-lane section, and includes intersection improvements for the full four-lane section, from Byers Road north to its intersection with existing PA Route 100 south of Fellowship Road. The remaining right-of-way of Graphite Mine Road was later acquired for the remainder from Byers Road south to its intersection with existing PA Route 100 north of Township Line Road. By 2009, the full-length of Graphite Mine Road was completed, as well as major intersection improvements at Route 100, and the construction of Station Boulevard. Graphite Mine Road is also classified as a principal arterial highway. The Township wants to transfer the official PA Route 100 designation from Pottstown Pike to this road to more fully achieve its purpose - to redirect through-traffic around the Village of Eagle so that Pottstown Pike through this village can better serve local traffic and pedestrians.

PA Route 401 (Conestoga Road) is classified as a minor arterial highway. PA Route 401 travels only a half mile across the arm of the township that juts into West Vincent Township, at the northeastern edge of the transportation service area.



*Southbound Route 100 (Pottstown Pike).*



*Pottstown Pike, Village of Eagle.*

Roads classified as major collectors in Upper Uwchlan Township include Byers Road, Little Conestoga Road, and Pottstown Pike (between the Graphite Mine Road intersections). Little Conestoga Road traverses the heart of the township and the transportation service area, connecting PA Route 82 with PA Route 100.

Roads classified as minor collectors within the TSA are Dorlan Mill Road, East Township Line Road, Font Road, Park Road (between Moore Road and Pottstown Pike), Pennsylvania Drive, Ticonderoga Boulevard, Station Boulevard (between Pottstown Pike and Graphite Mine Road) and West Township Line Road. Park Road serves as the primary entrance to Marsh Creek State Park and handles increased weekend and holiday traffic.

Distributor roads move traffic from local roads to collectors or arterials. Some distributor roads serve as spines of large residential or mixed-use developments. Some distributor roads preclude parallel parking, while others do not. Distributor roads include Blackhorse Road, Greenridge



Road, Milford Road, Moore Road, Park Road (west of Moore Road), Saint Andrews Lane, Station Boulevard (between Graphite Mine Road and municipal border), and Styer Road.

All other township roads within the TSA are classified as local access streets. These carry low volumes of traffic at low speeds and connect primarily residential areas with other segments of the Township’s street or road network.

For more of an explanation of Upper Uwchlan Township’s roads with respect to PennDOT’s Roadway Functional Classification, see Table 6 at the end of this report, which is also found in the 2014 Upper Uwchlan Township Comprehensive Plan.

### 3. Changes in Land Use

Since 1998 when the first LUAR was conducted, Upper Uwchlan Township has absorbed a significant amount of regional growth, and is now largely dominated by suburban land uses. The Current Land Use Map, Map 3 following Appendix B, depicts the various land uses within the township by individual map color and legend. Current land use is also described for the entire township by general category in Table 1 below and in the paragraphs that follow this table. Nearly all the growth experienced in the last decade occurred within the new TSA.

**Table 1. Current Land Use and Percent Change since 1995 (DVRPC 2011)**

Land Use	Area		% Change 1995–2011
	acres	% of total	
1 Single-family residential	2,719.8	36.7%	6.6%
2 Multi-family residential	71.2	1.0%	447.7%
3 Commercial	88.3	1.2%	32.8%
4 Heavy commercial	79.0	1.1%	
5 Institutional	159.8	2.2%	68.2%
6 Municipal	129.7	1.8%	85.3%
7 Industrial	280.8	3.8%	405.0%
8 Utility/Transportation	581.5	7.8%	24.2%
9 Agriculture	594.5	8.0%	-9.5%
10 Township recreation / Open space	117.9	1.6%	336.7%
11 Public recreation / open space (Marsh Creek State Park)	1,345.4	18.2%	95.0%
12 Privately Owned, deed-restricted open space	571.3	7.7%	207.1%
13 Open / undeveloped	670.4	9.0%	-30.7%
<b>Total</b>	<b>7,409.6</b>	<b>100.0%</b>	<b>n/a</b>

Changes in land use in the Township since 1995: Residential land uses (single-family detached, duplex or twin, mobile home, and multifamily), which were reported in the 1998 LUAR as

occupying a substantially greater area of the township than was surveyed in 1985, continued to increase in area for the next decade (2000 – 2010). Chester County reported an increase in the township's residential land uses from 1995 to 2011 of 168.8 acres, or 6.6 percent. Multi-family residential land uses also increased in the township by over fifty-eight acres. Large residential developments included Byers Station, Eagle Hunt, and Windsor Ridge, all lying on the east side of PA Route 100, and Eagle Farms, lying on the west side. Windsor Ridge has access to PA Route 100 and Fellowship Road, and includes a mix of single-family homes and townhouses. Byers Station, abutting the historic villages of Eagle and Byers, includes single-family dwellings, townhouses, and multi-family/garden apartments. Toll Brother's development of the Ewing Farm straddling both Upper Uwchlan and West Vincent Townships is limited to single-family homes in Upper Uwchlan Township. Within the last three years, new residential development in the township has slowed to a near stand-still due to a major economic recession affecting this region.

Commercial land uses (retail, service, restaurant, office, auto sales and repair, contractor yards, etc.) also increased in Upper Uwchlan Township since 1995 by 41.3 acres, or nearly 33 percent. This includes regional retail development such as the Eagle Village shopping center, Wawa food and fuel market, CVS Pharmacy, a Car Sense auto dealership in Eagle Village, and a Lexus dealership and service center located on north PA Route 100 at Fellowship Road. Adaptive re-use of historic buildings within the village of Eagle also resulted in new local-serving commercial retail, service, and office uses. Table 1 and Map 2 differentiate between (light) commercial and heavy commercial uses. Little, if any, increase in heavy commercial uses has occurred in Upper Uwchlan since 1995.

Increases in industrial land uses (manufacturing, research and industrial, storage/warehousing, etc.) have been greater than increases in commercial land uses. Almost 144 acres of industrial land were added since 1995, an increase of 104 percent. This increase reflects continued development of new office and research and development uses, and a large vocational training facility, within the township's portion of the Eagleview Corporate Center. This center is located on the west side of the Pennsylvania Turnpike and straddles Upper Uwchlan Township and Uwchlan Township to the south. Some light industrial reuse of existing manufacturing space has also occurred near Eagle Village, including the new Fed Ex shipping terminal located along Ticonderoga Boulevard on the eastern side of the Turnpike.

Even though institutional uses (schools, churches, medical centers, etc.) in Upper Uwchlan Township continue to represent a small percentage of the total township land area, the new St. Elizabeth Catholic Church and School (at Fellowship Road and PA Route 100); and the reconstructed Pickering Valley Elementary School (along Byers Road within Eagle Village), explain a 68.2 percent increase in institutional land area.

Recent increases in municipal lands and lands owned/occupied by utility or transportation-related uses are explained as follows. The township acquired a parcel of land in northern Upper Uwchlan for the Route 100 Sewage Treatment Plant, and the township's Sewage

Authority gained the extensive network of sprayfields involving open space within several private developments. And, as noted earlier, the Turnpike Commission acquired over 50 acres of land along the turnpike, which is currently in agricultural use.

In addition to Marsh Creek State Park which occupies 1,345.4 acres in Upper Uwchlan Township, public recreation/open space land has increased by over ninety-five percent in the township over the past 16 years. This increase reflects a mix of new township parkland for active recreation and new privately-owned (HOA), deed-restricted, open space. In addition, the township has successfully established a public trail/sidewalk network which now links residential developments to municipal parkland, Marsh Creek State Park, Pickering Valley Elementary School, and the Village of Eagle/Byers.

The percent of township land in agricultural use (food or feed crop or livestock) continues to decrease as farmland is converted to developed land and or other forms of open space uses. Within the expanded TSA, a relatively small amount of land remains in farming use, a large portion of which is centrally located in the township and is assumed to be sold for additional residential development in the next ten years. Smaller farms, particularly those located near the intersection of Fellowship Road and PA Route 401, are anticipated to remain in farm-related or rural residential uses for at least the next ten years.

Since 1995 the amount of open/undeveloped land in the township dropped by another 296.6 acres, or roughly 31 percent. This drop is largely due to the continued development of vacant lands within the township's portion of the Eagleview Corporate Center.

Pending developments within the TSA: At the time of this LUAR's publication, parcel 5C in Byers Station, which is a 31-acre, triangular shaped, parcel lying between Graphite Mine Road on the east, Pottstown Pike to the west, and Station Boulevard to the south, had been specifically approved by the township in 1999 as part of a larger Planned Residential Development (PRD) zoning approval. This approval was for 220 multi-family residential dwelling units and 175,000 square feet of retail uses. In 2009, a sketch plan was proposed for parcel 5-C showing the development of 145 carriage homes and 59,725 square feet of commercial development. However, no formal land development plan was submitted and the property remains vacant. In addition, the 106.2 acre Frame property, centrally located in the township and lying on both sides of the Pennsylvania Turnpike, received conditional use approval of 66 single-family dwellings utilizing the zoning ordinance's flexible/open space development option. This development is now undergoing preliminary subdivision plan approval. Also, now part of the new TSA is the 32.1 acre Popjoy property, with a subdivision plan approval for twenty-one single family lots. This subdivision has never moved beyond plan approval, and the TIFAC assumed the property was available for other residential development options based on current zoning.

Three light industrial projects had land development plans approved by the township for the Eagleview Corporate Center since 2008: an 80,000 square foot flex industrial development on

Lot 1, a 71,400 square foot office building on Lot 5, and a 56,000 square foot office building and 14,800 square foot building link on lots 10 and 11 connecting to an existing office building. Another seventy-one acres remain within the township’s portion of the Eagleview Corporate Center. According to their owner, the Hankin Group, Inc., these 71 acres are slated for roughly 283,000 square feet of additional flex industrial space and 137,000 square feet of additional office space.

#### 4. Population Trends

According to the Pennsylvania Municipalities Planning Code, land use assumption reports are to be based on an analysis of the prior five years of population change, and a population projection of at least five years out from the current date. This LUAR uses population projections for a ten year period (2015 – 2025) based on the population analysis and year 2030 projection methodology included in the 2014 Upper Uwchlan Township Comprehensive Plan.

Table 2 below lists the results of the two most recent census counts for Upper Uwchlan Township and its neighboring municipalities, as well as Chester County. Upper Uwchlan’s growth rates started to increase significantly in 2000, and reflected regional residential growth pressure and the completion of Phase 1 of the Route 100 sewage treatment plant, which provided many developers with access to public sewer. As a result, the township gained 4,377 new residents between 2000 and 2010, and regional growth rates remained high until the end of the decade.

Table 2. US Census, 2000 & 2010

Jurisdiction	Population		% Change
	2000	2010	
Upper Uwchlan	6,850	11,227	63.9%
Uwchlan	16,576	18,088	9.1%
East Brandywine	5,822	6,742	15.8%
West Vincent	3,170	4,567	44.1%
West Pikeland	3,551	4,024	13.3%
Wallace	3,240	3,458	6.7%
East Nantmeal	1,787	1,803	0.9%
Chester County	433,501	498,886	15.1%

Beginning in 2009, population growth in Upper Uwchlan Township and its neighboring municipalities slowed significantly as a major economic recession caused new housing developments practically to halt construction. By 2015, the Township’s rate of growth was still low as the region slowly moves out of the recession.

The 2014 Comprehensive Plan utilized a 17% rate of population growth for its 20-year planning horizon (2010 – 2030). This rate was based on a detailed analysis of existing zoning and land



availability in Upper Uwchlan, along with discussions with the Township's Planning Commission regarding the likely timing of development during the Plan's 20-year horizon (2010 – 2030). The Plan projected a population growth rate of 14% for the first ten years (2010-2020), followed by a growth rate of 2% for the second ten years (2020-2030). The twelve percent drop in growth between the two ten year periods assumed that most of the Township's developable land, largely contained in a single parcel, would be developed in the first ten-year period.

Based on the 2014 Comprehensive Plan's demographic analyses and projections, this LUAR estimates the Township 2015 population to be 12,042 persons. By the year 2020, this LUAR estimates the Township's population to be 12,857 persons, and by 2025, 13,017 persons.

## **5. Assessment of Future Development Potential**

The future development potential of the proposed TSA was assessed as part of the land use planning work needed for the Township's comprehensive plan update, and then further refined through meetings of the TIFAC. Two primary assessments were conducted: 1) potential development at ultimate build-out; and 2) potential development for a ten-year period (2015-2025). For both assessments, the TSA was divided into two areas. Area A included all land within the TSA, but excluded all land lying within the Village of Eagle/Byers Concept Plan boundary. Area B included only the land within the Concept Plan boundary. The Village of Eagle/Byers Concept Plan is described in detail in the 2014 Upper Uwchlan Township Comprehensive Plan. The results of the two primary assessments are as follows:

### Potential TSA Development at Ultimate Build-out (Areas A & B combined):

493 additional dwelling units + 1,567,590 sq.ft. of added commercial/industrial space (gross floor area) using a village infill growth scenario;

or

493 additional dwelling units + 2,692,569 sq.ft. of added commercial/industrial space (gross floor area) using a village redevelopment growth scenario.

### Potential TSA Development for a ten-year period (2015-2025; Areas A & B combined):

228 additional dwelling units + 1,752,582 sq.ft. of added commercial/industrial space (gross floor area).

Detailed summaries of the residential and non-residential development potential at ultimate build-out and for the 10-year planning period (2015-2025) for areas A & B are provided in appendices A & B, respectively. The methodologies used to reach these estimates are also explained in the appendices.

## 6. Added Considerations for Future Development

Re-development potential: Factored into the two above-described assessments are two existing parcels identified by the TIFAC as likely to be redeveloped in the next ten years. The first is the land containing the ACME supermarket within the Eagle Village Shopping Center. A new shopping center tenant could either utilize the ACME single-story building, or, redevelop that portion of the property now occupied by the ACME with a two-story building or buildings. The second parcel is the Wolfington Body Company, which is highly visible both from the Pennsylvania Turnpike and from Route 100. This parcel sits at the intersection of Graphite Mine Road and PA Route 100, and its redevelopment could likely take the form of a mix of commercial uses, or include some residential in the mix, with buildings of multiple floors.

Other planned land use changes in the future: The Fellowship Road North area is a focus of the 2014 Comprehensive Plan, particularly for meeting township economic development goals. This area incorporates land along both sides of PA Route 100, and is bordered to the south and east by Fellowship Road, to the south and west by Font Road, and to the northeast by the Windsor Ridge residential community. The area consists of a mix of vacant land and commercial retail, heavy commercial/light industrial, institutional, recreational, and transportation/utility land uses, and a mix of zoning districts that favor residential or non-residential uses, depending on the district.

The 2014 plan update recommends office, medical, or light industrial uses for a portion of this area through development of vacant or underutilized parcels. While both primary assessments factored in the development potential of nearly all the vacant or underutilized parcels from this area, the 37-acre Jankowski parcel was not included due to its existing residential zoning. However, if rezoned to the PI Planned Industrial District, this parcel could yield up to 945,862 square feet of office or light industrial space (gross floor area).

Also, a transportation recommendation included in the 2014 Comprehensive Plan extends existing Milford Road to the north and east to intersect with Route 100 opposite Garrison Drive. The dedication and/or construction of this extension would ideally be part of the Jankowski parcel's development.

## **Appendix A. Methodology: Determining potential development at ultimate build-out**

Assessment one involved determining the TSA's potential development at ultimate build-out. "Ultimate build-out", for the purposes of this report, is defined as "all potentially developable land in the township being developed according to existing zoning." Thirty-six undeveloped or substantially undeveloped tracts (including agricultural lands) within the proposed TSA were identified as having development potential. These tracts or parcels totaled 662.91 acres and represented 14.8 percent of the TSA. See Map 5, Ultimate Build-out, following Appendix B to locate these 37 parcels. As explained in the main portion of this LUAR, the TSA was divided into two areas: A & B. Twenty-three of the 36 parcels were located in area A, 13 parcels were located in area B.

**Area A:** Within area A, 18 of the 24 parcels were zoned for residential uses. The other five parcels, located north of Fellowship Road and east of Route 100, were zoned for commercial or industrial uses. Of the 18 parcels zoned for residential use, 17 were eligible for use of the zoning ordinance's flexible/open space development option (OSDO), and 16 were assumed to make use of that option. (With the exception of the approved Byers Station PRD, all major residential subdivisions developed since the 1998 LUAR have utilized the flexible/open space development option, given public sewer availability.) Of the remaining two parcels zoned for residential use, one was ineligible for the OSDO due to its small size, and was assumed to be subdivided lot-by-lot, utilizing the conventional subdivision provisions of the township's subdivision and land development ordinance. The other parcel was scheduled for a rezoning action by the Board of Supervisors to facilitate light industrial land uses, and therefore was added to the other five currently zoned for non-residential land uses.

For the 17 parcels assumed to be developed residentially, physical building limitations, such as the presence of wetlands or steep slopes, were identified and "netted out" from parcel computations. The maximum yield (number of dwelling units) permitted through use of the OSDO was assumed to be achieved, regardless of dwelling unit type, for the 16 parcels utilizing this option. See Table 3 for a summary of the ultimate build-out results for the 17 parcels to be developed with residential uses.

For the other six parcels, the estimated non-residential yield is based on each parcel's net lot area (after discounting any physical building limitations). Development of these six parcels will be subject to applicable maximum building coverage limitations of the base zoning district. For example, a 30-acre lot with a 30 percent maximum building coverage limitation of the LI District would be limited to buildings covering only 9 of the 30 acres. See Table 4 for a summary of the ultimate build-out results for these six parcels.

**Table 3. Assessment One—Ultimate Residential Build-Out**

(See Map 5)

Map ID*	Tax ID	Zone	Development Type	Acreage		Yield	
				Gross	Net		
1	1	32-3-16	R-2/F-1	Multi-Family	141.59	135.58	149
2	2	32-2-10	R-2/F-2	Multi-Family	86.55	42.90	53
3	3	32-2-12	R-1/F-2	Multi-Family	35.67	35.63	44
4	4	32-1-17.1	R-2/F-1	Multi-Family	58.94	54.34	59
5	5	32-1-30	R-2/F-2	Multi-Family	36.79	36.19	39
6	7	32-3-34	R-2/F-1	Multi-Family	31.61	26.14	28
7	8	32-3-15.2	R-2/F-3	Multi-Family	21.40	20.52	22
8	9	32-3-29	R-1	Single-Family	41.64	20.43	14
9	10	32-3-53.2A	R-2	Single-Family	15.68	15.65	14
10	11	32-3-14	R-2	Single-Family	14.99	14.95	14
11	13	32-3-77.8	R-2/F-1	Multi-Family	15.54	15.23	18
12	15	32-3-77.1	R-2/F-1	Multi-Family	16.80	13.33	14
13	16	32-3-29.2	R-1	Single-Family	19.15	11.05	5
14	17	32-1-15	R-2/F-1	Multi-Family	22.08	15.29	16
15	19	32-4-70	R-3	Single-Family	6.38	2.98	2
16	20	32-4-71	R-3	Single-Family	6.87	2.97	2
17	21	32-3-27	R-1	Single-Family	5.24	0.04	0
<b>Total</b>					<b>576.84</b>	<b>463.22</b>	<b>493</b>

**Table 4. Assessment One—Ultimate Commercial/Industrial Build-Out**

(See Map 5)

Map ID*	Tax ID	Zone	Acreage		Yield	
			Gross	Net	(sq. ft.)	
1	22	32-1-34.1C	C3	13.79	12.86	116,934
2			LI			252,070
3	23	32-3-25	C3	8.70	6.88	179,816
4	24	32-1-34.1D	C3	3.28	3.24	84,680
5	25	32-3-25.1	C3	2.00	1.99	52,010
6	26	32-3-24.1	C3	1.35	1.27	38,192
7	12	32-4-67	LI	33.37	25.16	657,582
<b>Total</b>				<b>62.49</b>	<b>51.4</b>	<b>1,376,582</b>



**Area B:** Area B (for assessment one) included 13 vacant parcels within the Village of Eagle/Byers Concept Plan boundary. For these parcels, two different “build-out” scenarios were assessed. The first was an “infill” scenario which assumed that most of the 13 parcels would develop based on current lot configuration and underlying zoning. See Map 6, Village Ultimate Build-out—Infill, for this area. In a few cases, very small, unbuildable parcels were combined with an adjoining parcel, when under the same ownership, to create a more buildable lot and one which was more likely to comply with the zoning ordinance requirements. This effectively reduced the 13 vacant parcels to 8 parcels. All of these parcels were zoned either the C-1 or C-3 District, and were assumed to develop with commercial uses based on their respective zoning district provisions. All commercial uses were assumed to include buildings of at least one and a half stories in height, given the 2014 Comprehensive Plan policies promoting use of upper floors of new commercial buildings within Eagle Village. Under the infill scenario, and after being combined, the eight parcels were estimated to generate an additional 191,306 square feet of commercial gross floor area. See Table 5.

The second scenario assumed that several of the original 13 parcels, regardless of their size, would be combined with adjoining lots to yield even greater development opportunities. Some merged lots contained existing buildings that would likely need to be demolished to create more attractive redevelopment opportunities. In addition, three parcels were assumed to redevelop without being merged with others, given their large size. See Map 7, Village Ultimate Build-out—Redevelopment, for this area. This scenario is also consistent with the 2010 Village of Eagle/Byers Concept Plan, which assumed parcels would be merged in the future to accommodate larger uses or a marketable mix of uses. Again, the C-1 and C-3 District provisions were used to generate the potential development estimates for all parcels except one. For all but one parcel, the resulting development for the purpose of this LUAR was assumed to be commercial. For the one parcel exception, the existing LI District zoning provisions were used to generate a potential development yield. For the C-1, C-3, and LI District parcels, it was assumed that buildings would be at least two stories in height, given the 2014 Comprehensive Plan policies promoting the use of upper floors of commercial or industrial buildings within Eagle Village. Under the redevelopment scenario, and after combining parcels, 10 resulting parcels were estimated to generate an additional 1,316,285 square feet of commercial and industrial gross floor area. See Table 6.

## **Appendix B. Methodology: Determining potential development for the 10-year planning period (2015-2025)**

Assessment two estimated the development potential within the proposed TSA for the 10-year planning period (2015-2025). The same 36 parcels used for assessment one were used for assessment two, as were areas A and B. Input on the likely timing of development with regard to the 10-year period was provided by the TIFAC. Potential development yields were estimated using existing zoning regulations, although some consideration was given to possible zoning changes.

As shown in Table 7, 228 additional dwelling units were estimated for Area A by 2025. This is 265 dwelling units less than the 493 dwelling units of assessment one, and reflects the TIFAC's assumption that not all developable tracts zoned for residential development will develop in the next 10 years. Those residentially zoned parcels selected by the TIFAC within Area A as most likely to develop during the 10-year planning period are shown on Map 8. Map 8 also shows 5 parcels within Area A identified by the TIFAC as most likely to be developed with commercial or industrial uses during the 10-year planning period. As shown in Table 8, an additional 582,012 square feet of office or light industrial space was estimated for four of these five parcels assuming the establishment of two-story buildings on each site. Another 328,791 square feet of heavy commercial/light industrial space was estimated for the remaining parcel assuming the establishment of a single-story building. Map 8 also reflects the locations of these five parcels.

For Area B, the 10-year build-out scenario selected by the TIFAC is reflected in Map 9 following Appendix B. This scenario assumes that some vacant and under-developed parcels will be combined to yield larger non-residential developments consistent with the Eagle/Byers Village Concept Plan (see the 2014 Upper Uwchlan Township Comprehensive Plan). Table 9 presents the results of this build-out analysis, and shows up to an additional 789,768 square feet of commercial gross floor area generated within the 10-year planning period (2015-2025), and assumes the establishment of at least two-story buildings.

Table 5. Assessment One—Ultimate Village Infill

(See Map 6)

Parcel #		Lot Size		Zoning	Lot Coverage	Building Coverage @ 1.5 stories		Probability L, H	≥1.5	>12,000	<12,000
Main	Sub	Acres	Square Feet			Percent	(sq. ft.)		40% or 70%	60%	80%
1	B	0.49	21,344	C1	60%	30%	9,604	L	3,842		3,073
	C	0.17	7,405				3,333	L	1,333		1,066
	D	2.41	104,980				47,241	H	33,069	19,841	
	E+F	2.16	94,090				42,340	H	29,638	17,783	
5	A+B	0.57	24,829	C1	60%	30%	11,173	L	4,469		3,575
6	A+B	5.84	254,390	C3	60%	30%	114,475	H	80,132	48,079	
7	A+B+C	4.92	214,315	C1	60%	30%	96,442	H	67,509	40,506	
8		6.97	303,613	C1	60%	30%	136,626	H	95,638	57,383	
<b>Total</b>		<b>23.53</b>	<b>1,024,967</b>				<b>461,414</b>		<b>315,630</b>	<b>191,306</b>	

Table 6. Assessment One—Ultimate Village Redevelopment

(See Map 7)

Parcel #	Lot Size		Zoning	Lot Coverage	Building Coverage at 2 stories		Probability of Development 70%	Total Coverage 80%
	Acres	Square Feet			Percent	(sq. ft.)		
1	14.08	613,325	C1	60%	30%	367,995	257,596	206,077
2	15.10	657,756	C3	60%	30%	394,654	276,257	221,006
3	2.19	95,396	C3	60%	30%	57,238	40,066	32,053
4	2.04	88,862	C3	60%	30%	53,317	37,322	29,858
5	10.09	439,520	C1	60%	30%	263,712	184,598	147,679
6	6.91	301,000	C3	60%	30%	180,600	126,420	101,136
7	6.55	285,318	C1	60%	30%	171,191	119,934	95,867
8	6.97	303,613	C1	60%	30%	54,650	38,255	30,604
9	14.20	618,552	C1	60%	30%	111,334	77,933	62,347
10	26.60	1,159,696	LI	50%	30%	695,8118	487,072	389,658
<b>Total</b>	<b>104.73</b>	<b>4,562,039</b>				<b>2,350,509</b>	<b>1,645,353</b>	<b>1,316,285</b>



Table 7. Assessment Two—Residential 10-Year Build-Out

(See Map 8)

	Map ID	Tax ID	Zone	Development Type	Acreage		Yield
					Gross	Net	
2015-2025	19	32-4-70	R-3	Single-Family	6.38	2.98	2
	20	32-4-71	R-3	Single-Family	6.87	2.97	2
	1	32-3-16	R-2/F-1	Multi-Family	141.59	135.58	149
	5	32-1-30	R-2/F-2	Multi-Family	36.79	36.19	39
	8	32-3-15.2	R-2/F-3	Multi-Family	21.40	20.52	22
	10	32-3-53.2A	R-2	Single-Family	15.68	15.65	14
<b>Total</b>					<b>228.7</b>	<b>213.89</b>	<b>228</b>

Table 8. Assessment Two—Commercial/Industrial 10-Year Build-Out

(See Map 8)

	Map ID*	Tax ID	Zone	Acreage		Yield (sq. ft.) @ 2 stories	
				Gross	Net		
2015-2025	1	32-1-34.1C	C3	13.79	12.86	116,934	
	2		LI			252,070	
	3	23	32-3-25	C3	8.70	6.88	179,816
	4	25	32-3-25.1	C3	2.0	1.99	52,011
	5	26	32-3-24.1	C3	1.35	1.27	33,192
	6	12	32-4-67	LI	33.37	25.16	328,791
<b>Total</b>				<b>59.21</b>	<b>48.16</b>	<b>962,814</b>	

Table 9. Assessment Two—Village 10-Year Build-Out

(See Map 9)

	Lot Size		Zoning	Lot Coverage	Building Coverage Two stories		70% Probability of Development	80% Total Building Yield		
	Area #	Acres			Square Feet	Percent	Yield (sq. ft.)	Yield (sq. ft.)	Yield (sq. ft.)	
2015-2025	2	15.10	657,756	C3	60%	30%	394,654	276,257	221,006	
	3	2.19	95,396	C3	60%	30%	57,238	40,067	32,053	
	4	2.04	88,862	C3	60%	30%	53,317	37,322	29,858	
	6	6.91	301,000	C3	60%	30%	180,600	126,420	101,136	
	7	6.55	285,318	C1	60%	30%	171,191	119,834	95,867	
	8	6.97	303,613	C1	60%	30%	182,168	127,518	102,014	
	9	14.20	618,552	C1	60%	30%	371,131	259,792	207,834	
	<b>Total</b>	<b>53.96</b>	<b>2,350,497</b>					<b>1,410,229</b>	<b>987,210</b>	<b>789,768</b>







# Map 1 Transportation Service Area

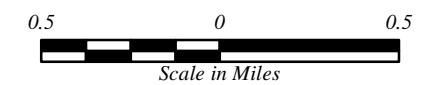
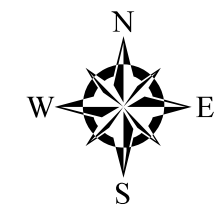
## 2015 Land Use Assumptions Report

Upper Uwchlan Township  
Chester County, Pennsylvania



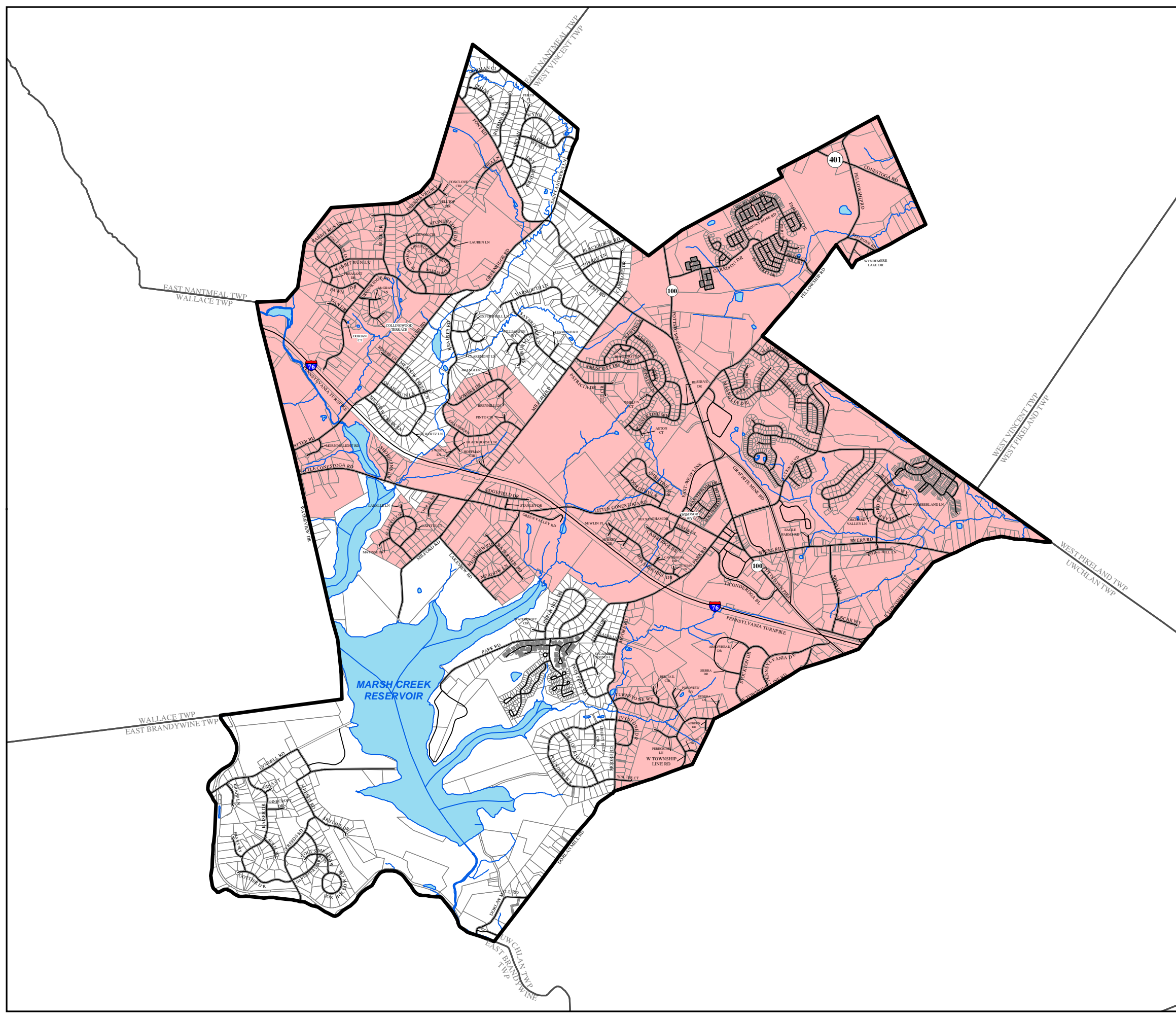
### LEGEND

-  Roads
-  Streams
-  Bodies of water
-  Tax parcels
-  Transportation service area (7.0 sq. mi.)
-  Township boundaries



Data sources: Base data from Chester County GIS Department, 12/2011.  
Transportation service areas created by Brandywine Conservancy, 2001  
(edited by Brandywine Conservancy 5/2013).

Map created: June 18, 2015





# Map 2 Roadway Functional Classifications

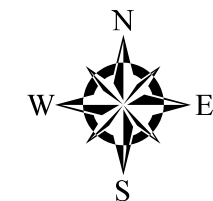
2015 Land Use Assumptions Report

Upper Uwchlan Township  
Chester County, Pennsylvania



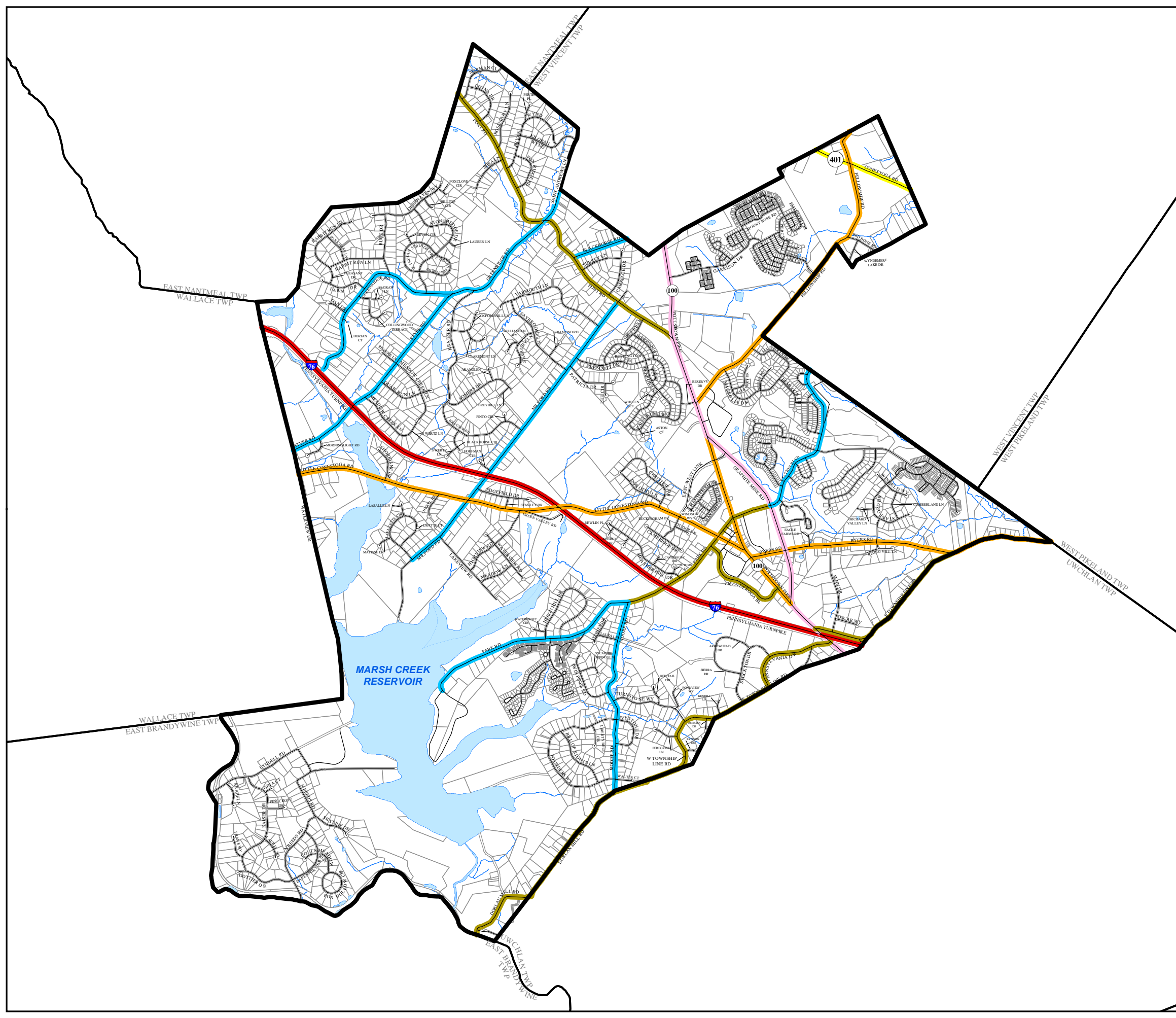
## LEGEND

- Roads
- Streams
- Bodies of water
- Tax parcels
- Township boundaries
- Roadway classifications**
- Expressway
- Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Distributor



Data sources: Base data from Chester County GIS Department, 12/2011.  
Roadway classifications from McMahon Associates, Inc., digitized by Brandywine Conservancy, 5/2013.

Map created: June 18, 2015

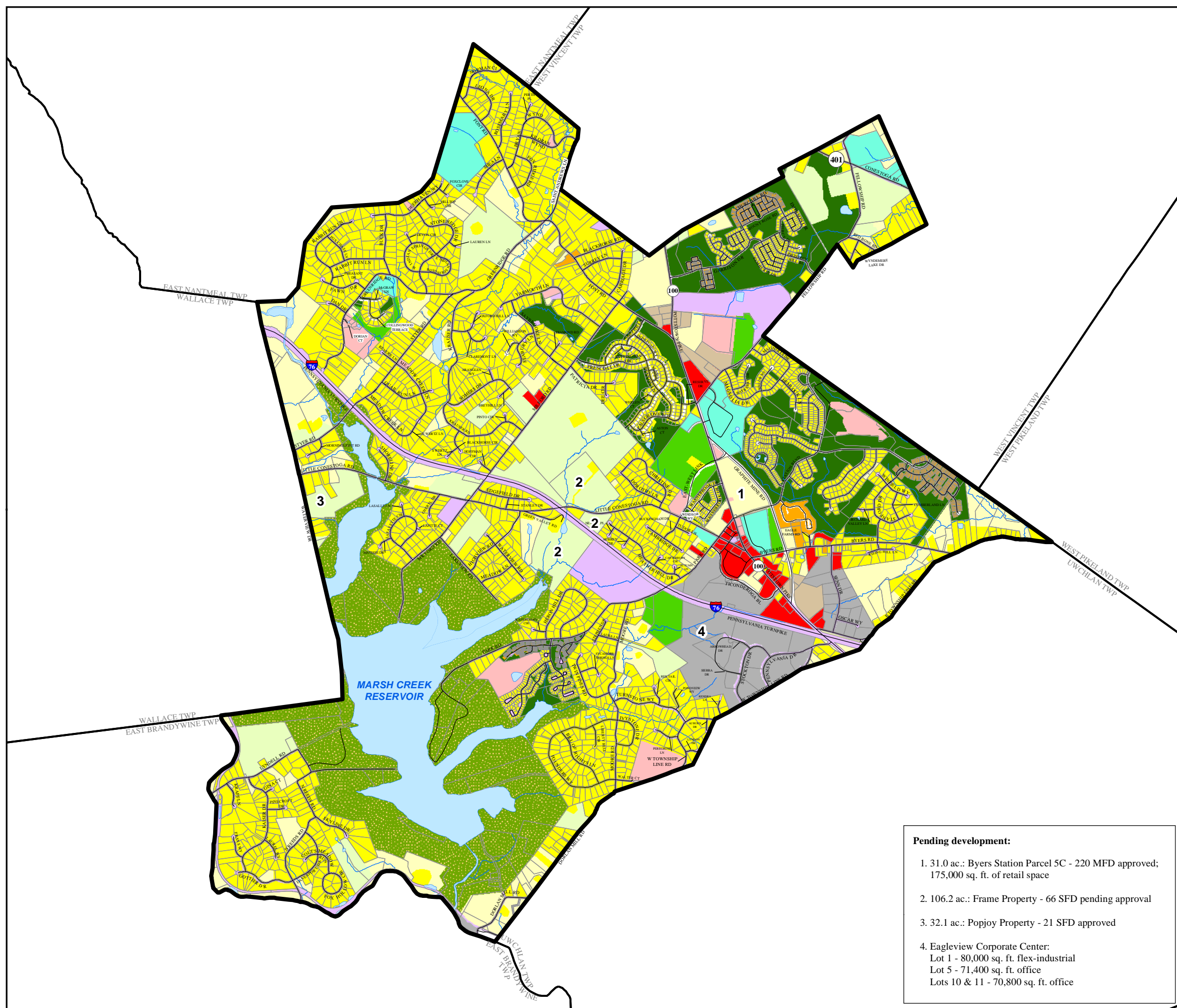




# Map 3 Current Land Use

## 2015 Land Use Assumptions Report

Upper Uwchlan Township  
Chester County, Pennsylvania



**LEGEND**

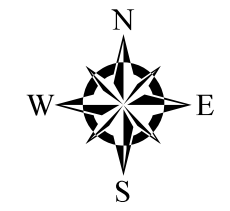
Roads  
 Streams  
 Bodies of water (527.4 ac.)  
 Tax parcels  
 Township boundaries

**Land use**

- Single-family residential (2719.8 ac.; 36.2%)
- Multi-family residential (71.2 ac.; 1.0%)
- Commercial (88.3 ac.; 1.2%)
- Heavy commercial (79.0 ac.; 1.1%)
- Institutional (159.8 ac.; 2.1%)
- Municipal (129.7 ac.; 1.7%)
- Industrial (280.8 ac.; 3.7%)
- Utility/transportation (581.5 ac.; 7.8%)
- Agriculture (594.5 ac.; 7.9%)
- Township recreation/open space (117.9 ac.; 1.6%)
- Public recreation/open space (Marsh Creek State Park) (1345.4 ac.; 17.9%)
- Privately owned, deed restricted open space (571.3 ac.; 7.6%)
- Open/undeveloped (670.4 ac.; 8.9%)

Total Township acreage = 7,505.2 ac.  
 Total Open / Undeveloped acreage\* = 1,245.1 ac.; 16.6%  
 (\* - includes agricultural acreage)

- Pending development:**
1. 31.0 ac.: Byers Station Parcel 5C - 220 MFD approved; 175,000 sq. ft. of retail space
  2. 106.2 ac.: Frame Property - 66 SFD pending approval
  3. 32.1 ac.: Popjoy Property - 21 SFD approved
  4. Eagleview Corporate Center:  
 Lot 1 - 80,000 sq. ft. flex-industrial  
 Lot 5 - 71,400 sq. ft. office  
 Lots 10 & 11 - 70,800 sq. ft. office



Data sources: Base data from Chester County GIS Department, 12/2011.  
 Land Use from DVRPC, 1995 (modified by Brandywine Conservancy, 1/2013).

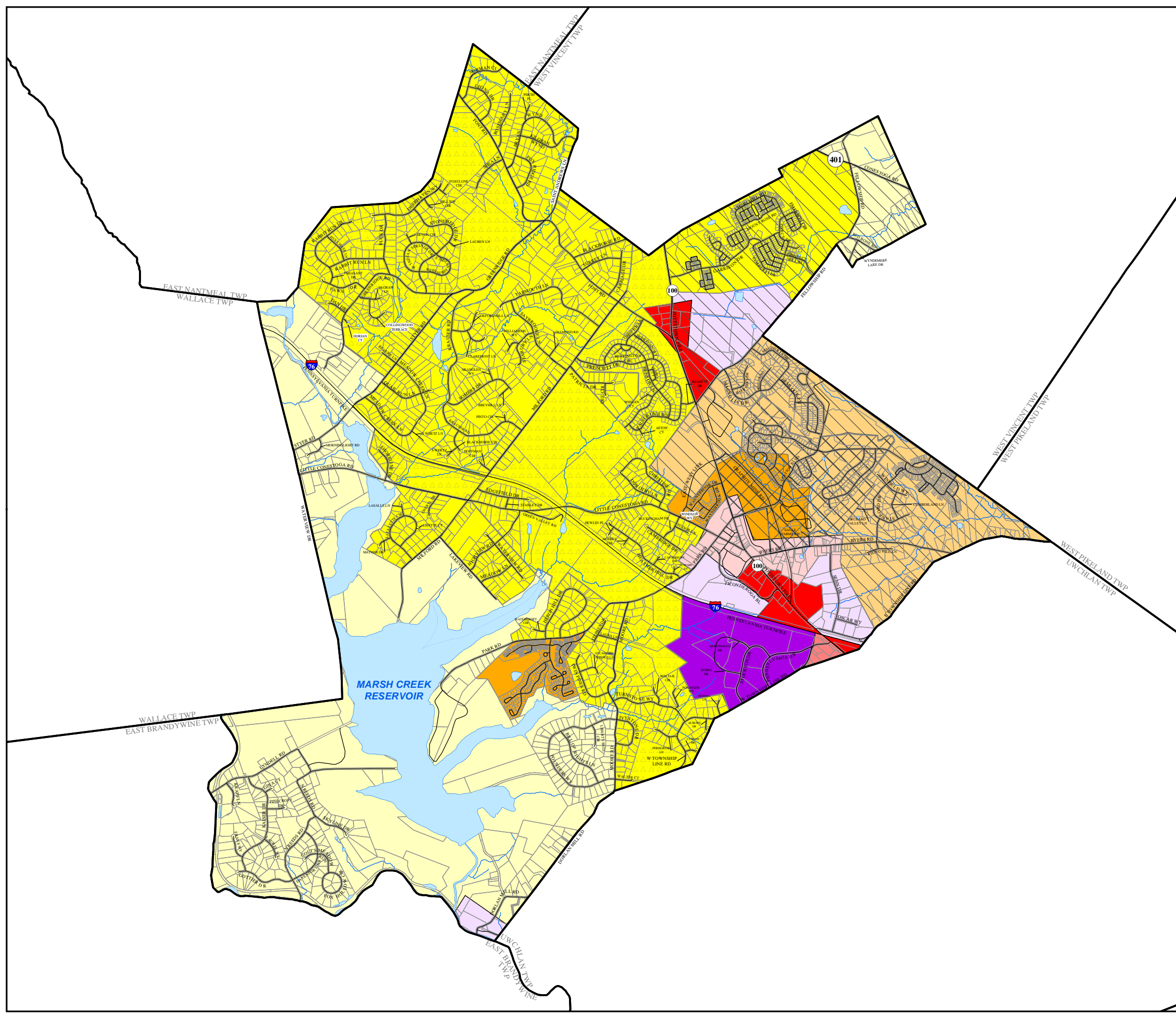
Map created: June 18, 2015



# Map 4 Zoning

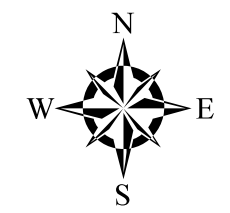
## 2015 Land Use Assumptions Report

Upper Uwchlan Township  
Chester County, Pennsylvania



### LEGEND

- Roads
- Streams
- Bodies of water
- Tax parcels
- Overlay Districts**
  - F1 - Flexible Development Overlay
  - F2 - Flexible Development Overlay
  - PRD - Planned Residential Development
- Current Zoning**
  - R1 - Residential District (1 dwelling unit/2 acres) - 2442.339 ac.
  - R2 - Residential District (1 dwelling unit/acre) - 3336.734 ac.
  - R3 - Residential District (1.5 dwelling units/acre) - 780.521 ac.
  - R4 - Residential District (2-4 dwelling units/acre) - 239.419 ac.
  - C1 - Village Commercial District - 124.493 ac.
  - C2 - Limited Commercial District - 12.734 ac.
  - C3 - Highway Commercial District - 116.433 ac.
  - LI - Limited Industrial District - 259.015 ac.
  - PI - Planned Industrial/Office District - 193.536 ac.



Data sources: Base data from Chester County GIS Department, 12/2011.  
Zoning created by Brandywine Conservancy, 10/2005.  
Map created: June 18, 2015



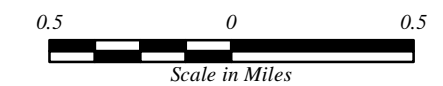
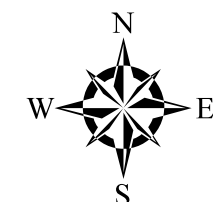
**Map 5**  
**Assessment One**  
**Ultimate Build-Out**  
 Outside Village of Eagle/Byers  
 Concept Plan Boundary  
*2015 Land Use Assumptions Report*

*Upper Uwchlan Township  
 Chester County, Pennsylvania*



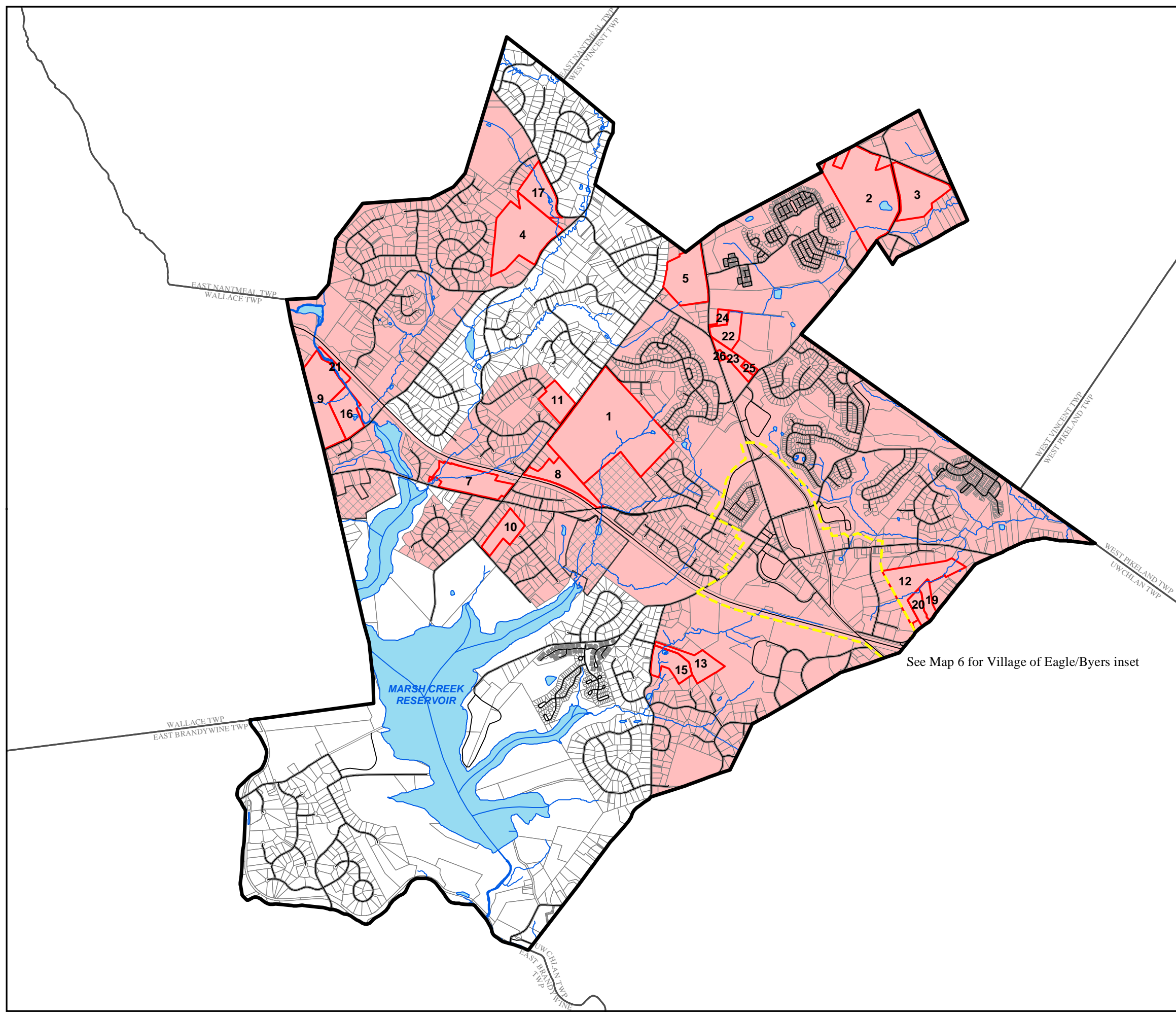
**Legend**

- Roads
- ~ Streams
- ☪ Bodies of water
- ▭ Developable parcels
- ▭ Village of Eagle/Byers Concept Plan Boundary
- ▭ Pending development
- ▭ Transportation service area
- ▭ Tax parcels
- ▭ Township boundaries

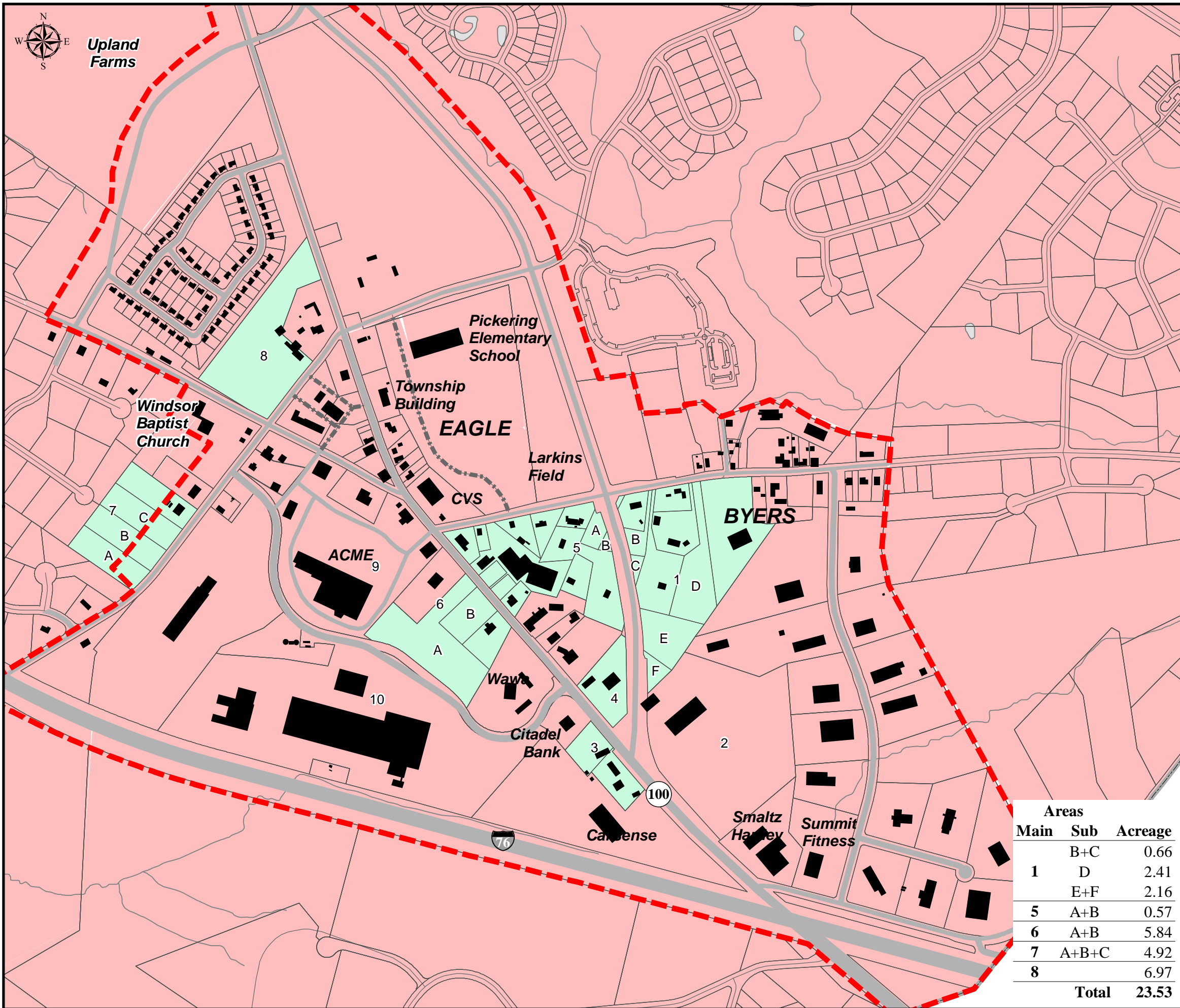


Data sources: Base data from Chester County GIS Department, 12/2011. Steep slopes generated by Brandywine Conservancy, 2005. Wetlands from NWI, 2009. Woodlands digitized by Brandywine Conservancy, 1999 (edited by Brandywine Conservancy, 6/2009). Hydric soils from NRCS, 2007. Transportation service areas created by Brandywine Conservancy, 2001.

Map created: July 9, 2015



See Map 6 for Village of Eagle/Byers inset



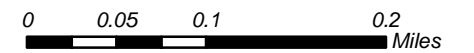
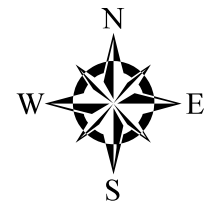
**Map 6**  
**Assessment One**  
**Village Ultimate Build-Out**  
**(Infill)**  
*2015 Land Use Assumptions Report*  
*Upper Uwchlan Township*  
*Chester County, Pennsylvania*



**Legend**

- Access roads
- Village planning area
- Existing buildings
- Village roads
- Township boundary
- Tax parcels
- Village parcels - redevelopment
- Roads
- Streams
- Bodies of water
- Transportation service area

Areas		
Main	Sub	Acreage
	B+C	0.66
<b>1</b>	D	2.41
	E+F	2.16
<b>5</b>	A+B	0.57
<b>6</b>	A+B	5.84
<b>7</b>	A+B+C	4.92
<b>8</b>		6.97
<b>Total</b>		<b>23.53</b>



**Data Source:** Base data from Chester County GIS Department, 12/2008. Village planning area digitized from plan created by McMahon Associates, 4/2009. Village roads and Access Roads from Brandywine Conservancy through aerial photo interpretation, 8-2009 (updated 2/2011).

Map created: June 18, 2015



**Map 7**  
**Assessment One**  
**Village Ultimate Build-Out**  
**(Redevelopment)**

*2015 Land Use Assumptions Report*

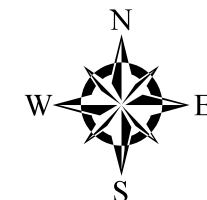
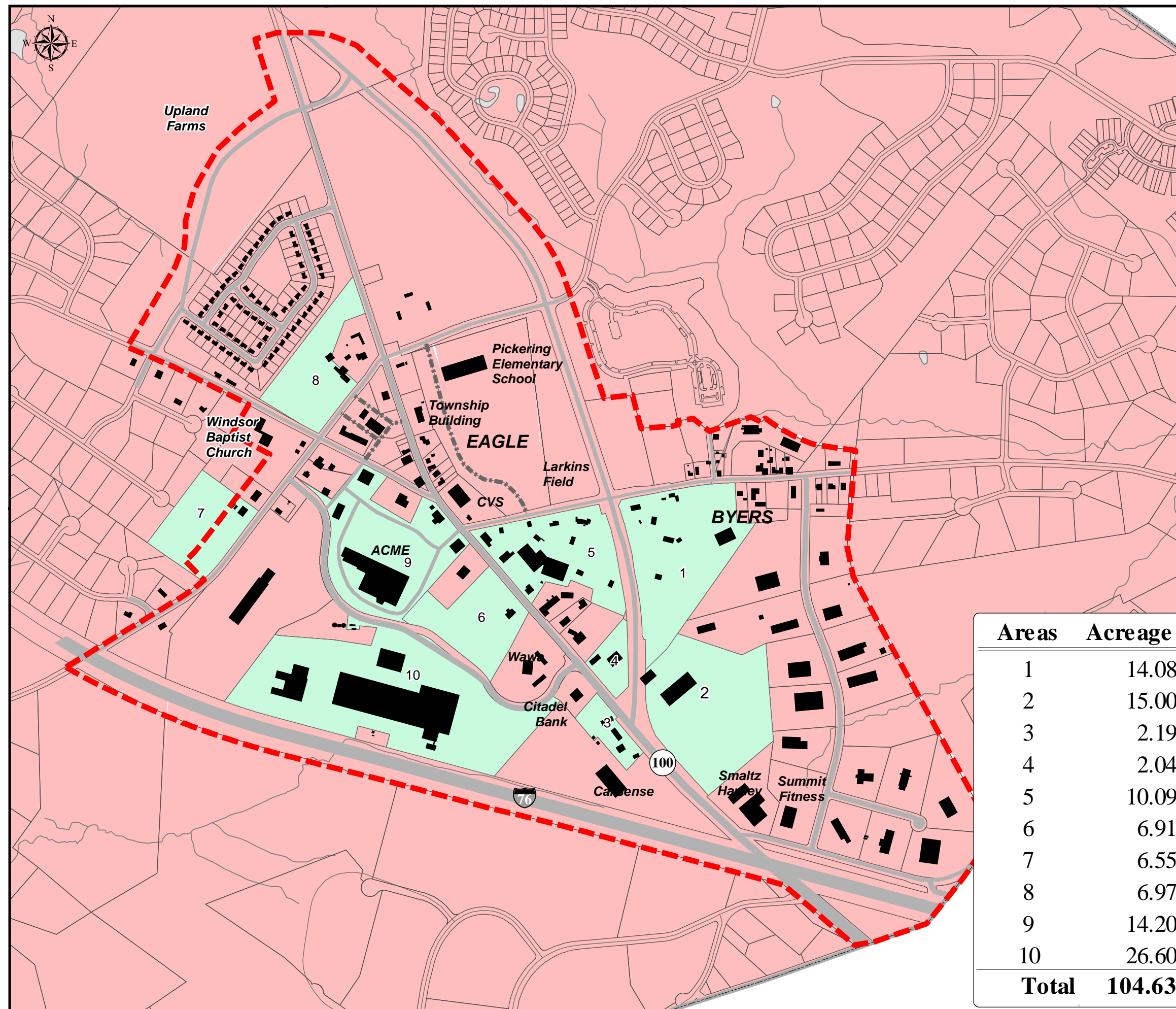
*Upper Uwchlan Township*  
*Chester County, Pennsylvania*



**Legend**

- Access roads
- Village planning area
- Existing buildings
- Village roads
- Township boundary
- Village Parcels - redevelopment
- Roads
- Streams
- Bodies of water
- Transportation service area

Areas	Acreage
1	14.08
2	15.00
3	2.19
4	2.04
5	10.09
6	6.91
7	6.55
8	6.97
9	14.20
10	26.60
<b>Total</b>	<b>104.63</b>



0 0.05 0.1 0.2 Miles



**Data Source:** Base data from Chester County GIS Department, 12/2008. Village planning area digitized from plan created by McMahon Associates, 4/2009. Village roads and Access Roads from Brandywine Conservancy through aerial photo interpretation, 8-2009 (updated 2/2011).

Map created: June 18, 2015

**Map 8**  
**Assessment Two**  
**10-Year Build-Out**  
 Outside Village of Eagle/Byers  
 Concept Plan Boundary  
*2015 Land Use Assumptions Report*

*Upper Uwchlan Township  
 Chester County, Pennsylvania*



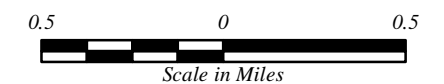
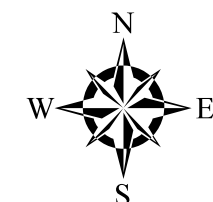
**Legend**

- Roads
- ~ Streams
- ☪ Bodies of water
- ▭ Parcels- Development within 10-year horizon
- ▭ Village of Eagle/Byers Concept Plan Boundary
- ▭ Pending development
- ▭ Transportation service area
- ▭ Tax parcels
- ▭ Township boundaries

See Map 6 for Village of Eagle/Byers inset

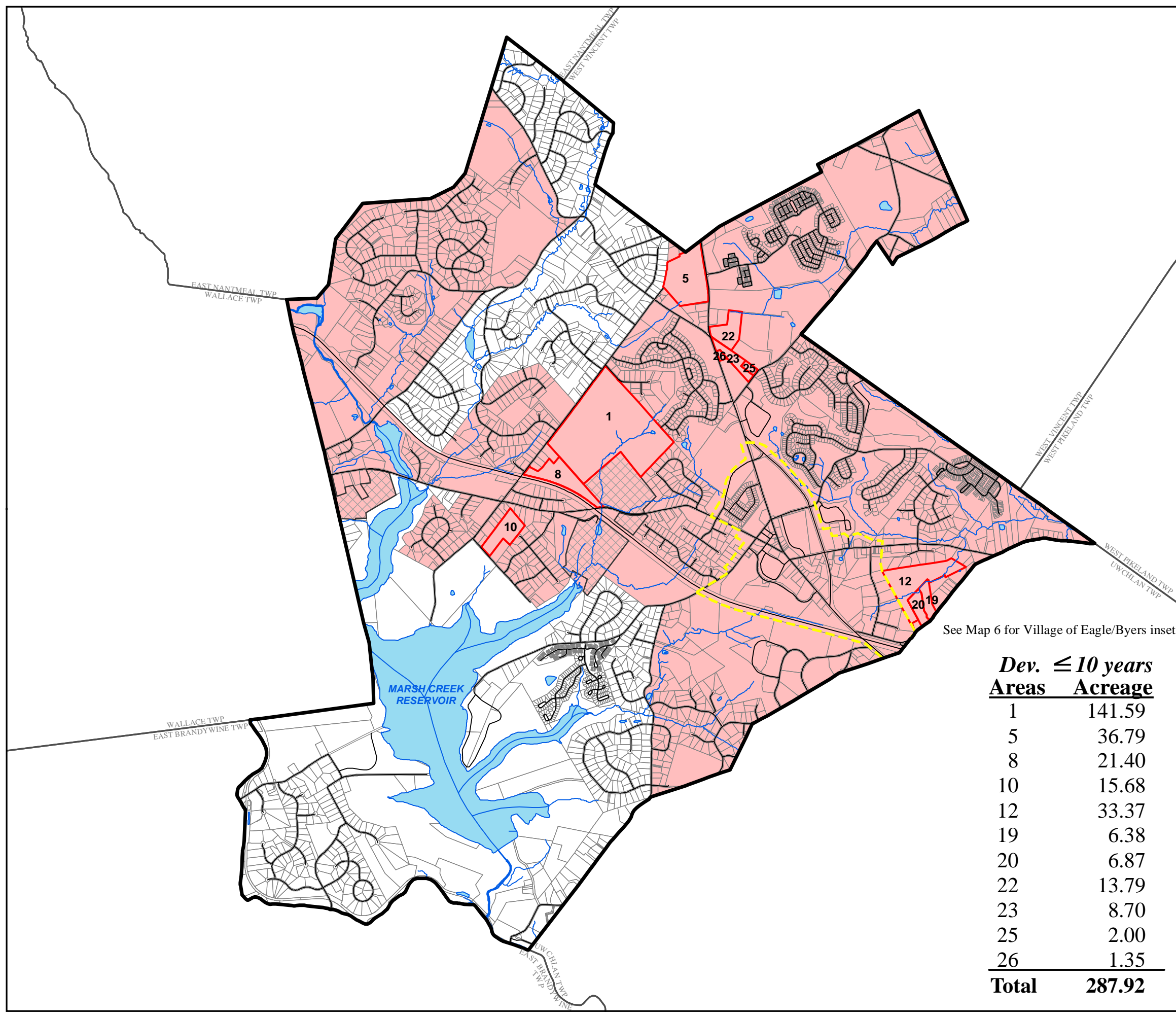
**Dev. ≤ 10 years**  
**Areas Acreage**

1	141.59
5	36.79
8	21.40
10	15.68
12	33.37
19	6.38
20	6.87
22	13.79
23	8.70
25	2.00
26	1.35
<b>Total</b>	<b>287.92</b>

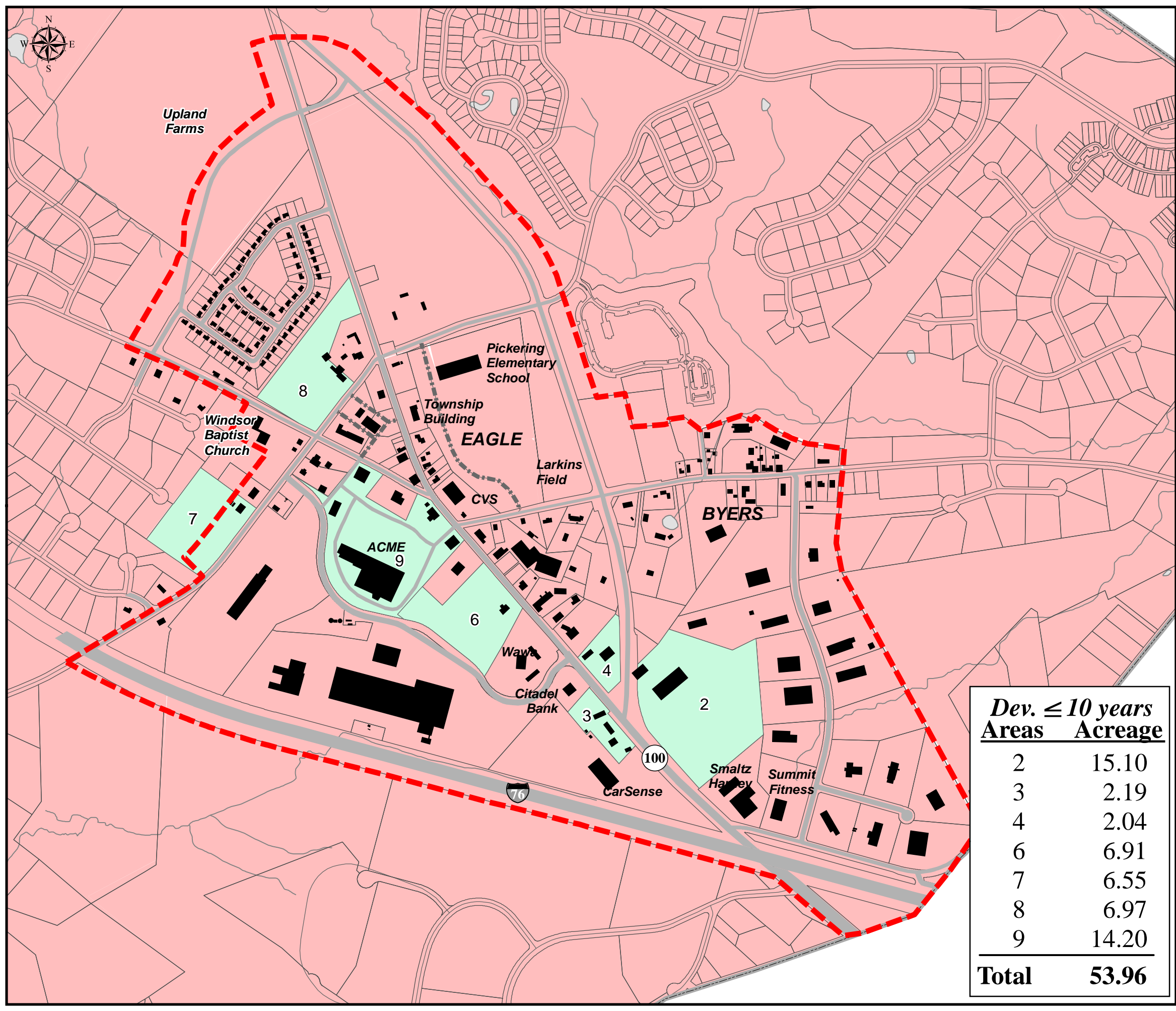


Data sources: Base data from Chester County GIS Department, 12/2011. Steep slopes generated by Brandywine Conservancy, 2005. Wetlands from NWI, 2009. Woodlands digitized by Brandywine Conservancy, 1999 (edited by Brandywine Conservancy, 6/2009). Hydric soils from NRCS, 2007. Transportation service areas created by Brandywine Conservancy, 2001.

Map created: September 17, 2015







**Map 9**  
**Assessment Two**  
**Village 10-Year Build-Out**  
**(Expected)**  
*2015 Land Use Assumptions Report*

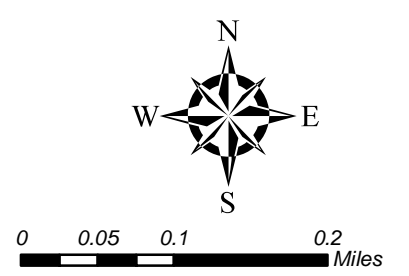
*Upper Uwchlan Township*  
*Chester County, Pennsylvania*



**Legend**

- Access roads
- Village planning area
- Existing buildings
- Village roads
- Township boundary
- Roads
- Streams
- Bodies of water
- Transportation service area
- Village Parcels - Development within 10-year horizon

<i>Dev. ≤ 10 years</i>	
<b>Areas</b>	<b>Acreage</b>
2	15.10
3	2.19
4	2.04
6	6.91
7	6.55
8	6.97
9	14.20
<b>Total</b>	<b>53.96</b>



**Data Source:** Base data from Chester County GIS Department, 12/2008. Village planning area digitized from plan created by McMahon Associates, 4/2009. Village roads and Access Roads from Brandywine Conservancy through aerial photo interpretation, 8-2009 (updated 2/2011).  
 Map created: September 17, 2015

# Map 10 Existing Transportation Service Area

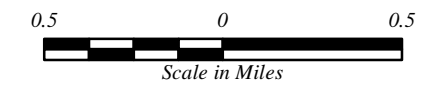
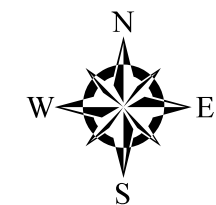
2015 Land Use Assumptions Report

Upper Uwchlan Township  
Chester County, Pennsylvania



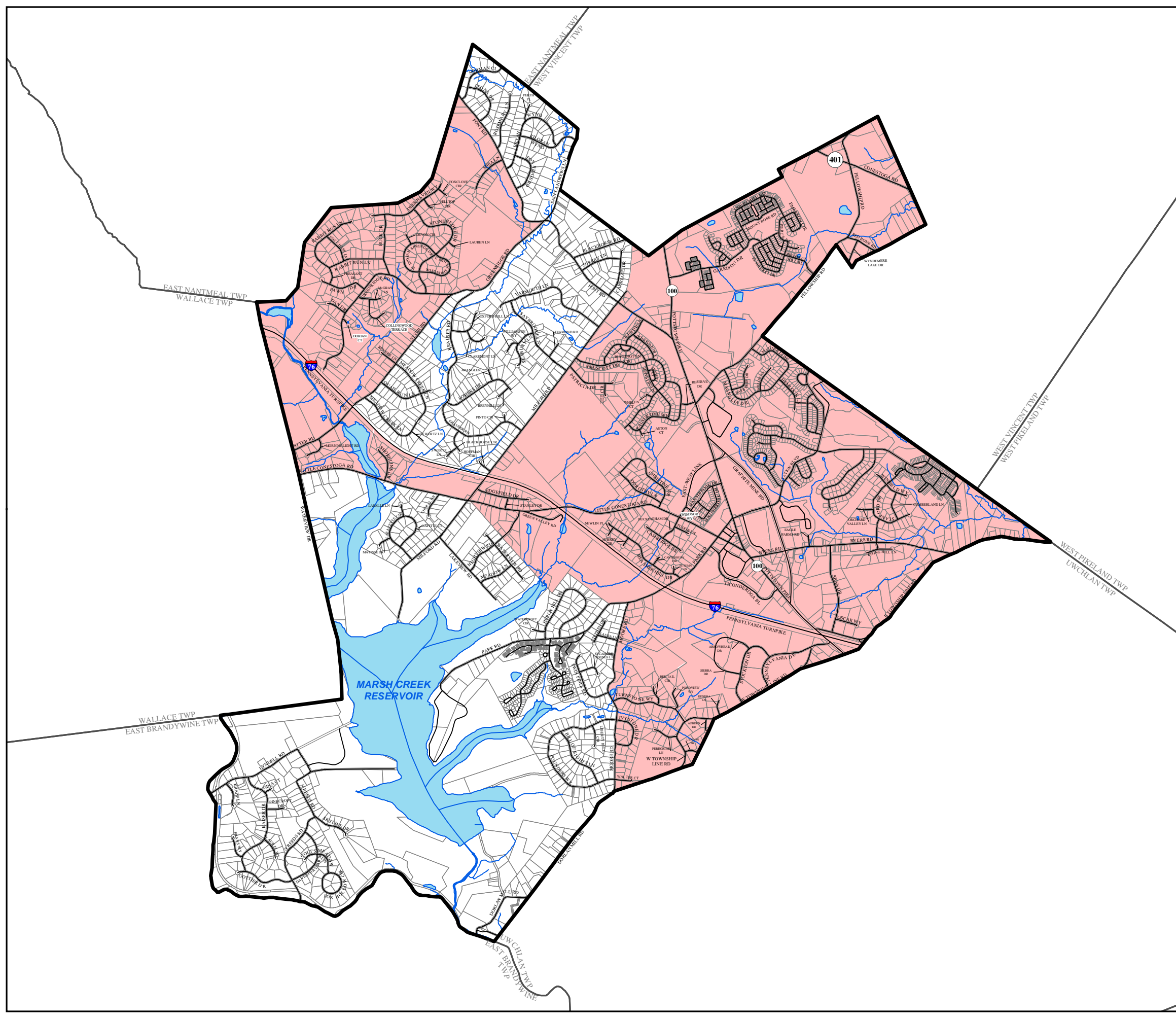
## LEGEND

- Roads
- Streams
- Bodies of water
- Tax parcels
- Transportation service area (6.46 sq. mi.)
- Township boundaries



Data sources: Base data from Chester County GIS Department, 12/2011.  
Transportation service areas created by Brandywine Conservancy, 2001.

Map created: July 9, 2015





**Table 6. Roadway Functional Classifications**

Roadway Functional Classification	Smart Transportation Road Type	Approx. Avg. Daily Traffic (vehicles per day)	Average Trip Length	Desired Operating Speed	Mobility & Access	Upper Uwchlan Township Roadways
Expressway	Expressway	15,000 - 100,000+	> 20 miles	55 - 65 mph	Highest level of mobility and limited access	PA Turnpike (I-76)
Principal Arterial	Regional Arterial	10,000 - 60,000	15 - 35 miles	45 - 55 mph	Higher level of mobility	PA Route 100 (Pottstown Pike) <i>(except where parallel to Graphite Mine Road)</i> Graphite Mine Road
Minor Arterial	Community Arterial	8,000 - 20,000	7 - 25 miles	35 - 55 mph	Higher level of mobility	PA Route 401 (Conestoga Road)
Major Collector	Community Collector	4,000 - 10,000	5 - 10 miles	35 - 35 mph	Balance mobility and access	Byers Road Little Conestoga Road Fellowship Road Pottstown Pike <i>(where parallel to Graphite Mine Road)</i>
Minor Collector	Neighborhood Collector	1,000 - 5,000	< 7 miles	20 - 35 mph	Balance mobility and access	Dorlan Mill Road East township Line Road Font Road Park Road <i>(between Moore Road and Pottstown Pike)</i> Pennsylvania Drive Ticonderoga Boulevard Station Boulevard <i>(between Pottstown Pike and Graphite Mine Road)</i> West township Line Road
Distributor	Local	Less than 1,500	< 5 miles	20 - 30 mph	Higher level of access and limited through traffic	Blackhorse Road Greenridge Road Milford Road Moore Road Park Road <i>(west of Moore Road)</i> Saint Andrews Lane Station Boulevard <i>(between Graphite Mine Road and municipal border)</i> Styer Road
Local	Local	Less than 1,500	< 5 miles	20 - 30 mph	Highest level of access and lowest level of through traffic	Most other roadways